November 2020 /February 2021 Operational Case Study

2019 CIMA Professional Qualification

Full post exam support materials

Below is the full post-exam supporting material for the operational case study exam.

Pre-seen material

November 2020 /February 2021 operational case study pre-seen can be found here

Examiner's report

The November 2020/February 2021 examiner's report can be found here

Exam variants

- Variant 1 can be accessed here
- Variant 2 can be accessed here
- Variant 3 can be accessed here
- Variant 4 can be accessed here
- Variant 5 can be accessed here
- Variant 6 can be accessed here

Suggested solutions

- Suggested solutions for variant 1 can be accessed here
- Suggested solutions for variant 2 can be accessed here
- Suggested solutions for variant 3 can be accessed here
- Suggested solutions for variant 4 can be accessed here
- Suggested solutions for variant 5 can be accessed here
- Suggested solutions for variant 6 can be accessed here

Marking Guidance

- Marking guidance for variant 1 can be accessed here
- Marking guidance for variant 2 can be accessed here
- Marking guidance for variant 3 can be accessed here
- Marking guidance for variant 4 can be accessed here
- Marking guidance for variant 5 can be accessed here
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If you need any further information please contact cima.contact@aicpa-cima.com or your local office.

November 2020 - February 2021 Operational Case Study Examination

Pre-seen material

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Your role

You are a Finance Officer working within the Finance Department of AmaZZZing Beds. You are principally involved in the preparation of management accounting information and providing information to managers to assist with decision making. At times you are also expected to assist with the preparation of the financial statements and answer queries regarding financial reporting and other financial matters.

Introduction

AmaZZZing Beds is based in Eastland, a country in Europe with the E$ as its currency. The company sells mattresses and beds through its network of 120 stores, which are located throughout Eastland, and through its own website. It is the country's largest bed and mattress retailer, based on revenue. AmaZZZing Beds sells all of the major brands of mattresses and beds as well as its own brand which the company manufactures at its manufacturing facility in Eastland. The company does not currently sell mattresses or beds outside of Eastland.

The company was founded in 1978 by George Norton. He started the business with a single store selling a wide range of furniture. Soon realising that customers were constantly asking for advice about mattresses and beds, by 1982 the company was focusing entirely on these products. In 1990 AmaZZZing Beds opened a production facility where it could manufacture its own brand of mattresses and divan beds. At this time there were 40 stores and by the year 2000 there were 100 stores nationwide. In 2005, George Norton sold the business to a private equity company and retired from the business. The private equity investor still holds 100% of the company's share capital.

AmaZZZing Beds' aim is to continue to be the number one retailer of mattresses and beds in Eastland. It plans to achieve this by:

- Offering a full product range, including all of the major mattress and bed brands available in Eastland, within its retail stores and on-line through its website.
- Having retail staff that are well trained in both customer service and providing support to customers in their selection of a suitable mattress.
- Making its retail stores user friendly. It uses a colour coding system on mattress information to identify the type of mattress and its unique features.

At its manufacturing facility, AmaZZZing Beds manufactures its own brand of sprung mattresses, hybrid mattresses and divan beds. It also has a small research and development team that is constantly looking at mattress technology to try and improve the sleep experience for consumers. Approximately 30% of the company's revenue and 33% of its gross profit is from the mattresses and beds that it manufactures. All other mattresses and beds sold in the retail stores are bought in from well-known branded manufacturers.

Revenue for the year to 30 June 2020 was E$174 million of which 64% was for mattresses and 36% for beds. Gross profit for the year to 30 June 2020 was E$80 million of which 67% related to mattresses and 33% to beds. The company employs 1,160 people: 130 at Head Office, 575 in the retail stores, 285 at the production facility and 170 in Logistics (Distribution Centre and delivery fleet).

The directors

Chief Executive Officer: Ben De Luca

Ben has been CEO since 2005 and has been involved in furniture retail since starting his professional life as a store manager for a national furniture retail chain. He is responsible for overseeing the whole business and is the key point of liaison with the private equity investor. Ben has an increasing interest in green and ethical issues surrounding mattress production and recycling.

Retail Director: Meena Patrick

Meena has worked for AmaZZZing Beds for over 25 years, starting as an Assistant Store Manager. She is responsible for the operation of all 120 retail stores. Meena is keen to ensure that the customer experience is as easy and pleasurable as possible and expects all retail staff to be knowledgeable about the products and give excellent customer service. She is very knowledgeable about sleep science and wellness and is interested in finding ways that the company could expand in these areas.

Production Director: Gavin Thorpe

Gavin has worked for AmaZZZing Beds for 6 months. He previously worked as a Senior Production Manager for Zee Sleep, the leading manufacturer of branded mattresses in Eastland. He is responsible for all aspects of the production facility. Gavin is interested in product design as well as production and is keen to expand the range of mattresses and beds made at the manufacturing facility.

Purchasing Director: Mo Singh

Mo has worked for AmaZZZing Beds for 15 years in the Purchasing Department. She is responsible for all aspects of purchasing, both raw materials for the manufacturing facility and bought in products. Mo has, over the years, built up excellent relationships with many of the company's suppliers.

Marketing Director: Helene Hugo

Helene has worked for AmaZZZing Beds for 5 years, having previously been employed as a marketing account executive in Eastland's largest marketing agency. She is responsible for all of the company's marketing and works closely with Meena Patrick on the branding of the business. Helene was instrumental in successfully relaunching the company's brand 4 years ago.

Logistics Director: Jack Norton

Jack has worked for AmaZZZing Beds for 25 years, starting as a logistics co-ordinator. He is responsible for the delivery fleet and all logistics operations. Jack was the main driver behind the company deciding to gradually replace its delivery fleet with hybrid vehicles. This initiative is currently 35% complete.

Finance Director: Stephan Tang

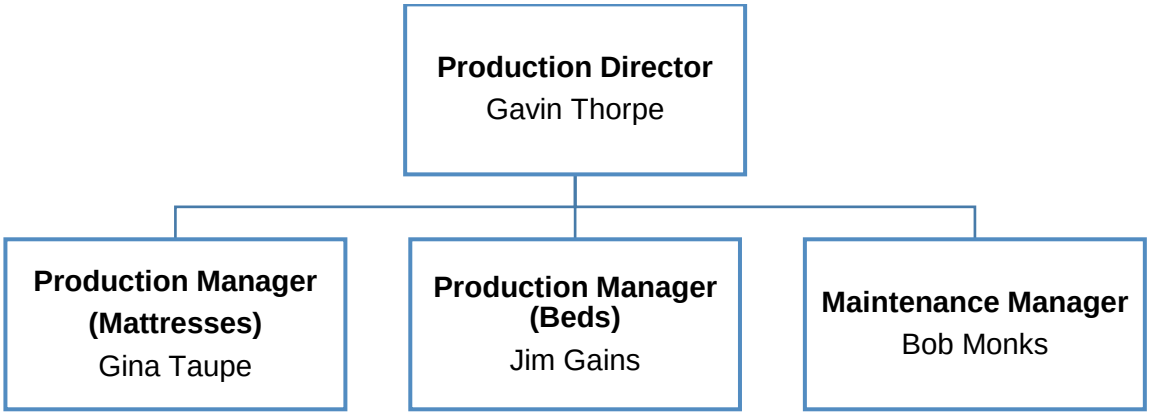
Stephan has worked for AmaZZZing Beds for 10 years and has been Finance Director for the last 2 years. He has been a qualified accountant for 15 years. Stephan is responsible for all aspects of finance including all internal and external reporting. He also has a lot of expertise in IT and, supported by external consultants, is responsible for the company's IT systems.

Human Resources Director: Karl Baptiste

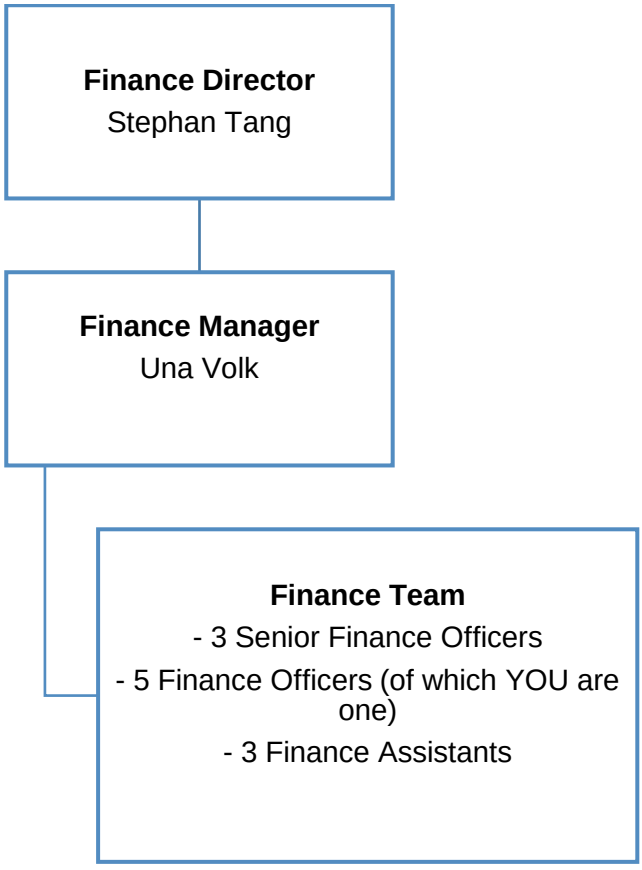
Karl has worked for AmaZZZing Beds for 7 years, but has worked in various HR roles for the last 30 years. He is responsible for all HR issues relating to the company's employees and is an expert in employment law. Karl has a keen interest in employee welfare and has started a number of initiatives that have sought to improve this.

Production and Finance teams

Production:



Finance:



Extract from the AmaZZZing Beds website: Our products

A quick guide to the mattress types that we retail

Sprung	•A traditional mattress made with an internal core of coiled springs and padding layers. The spring layer can be open coil (springs are inter-connected) or pocket sprung (each spring is contained within a separate fabric pocket). Open coil springs give support across the entire sleeping area, whilst pocket springs allow each spring to move independently, leading to greater support where the body needs it most.
Memory Foam	•A mattress which combines a layer of memory foam (made from polyurethane) with support foam. Memory foam uses body heat to soften and mould to the sleeper's shape. It bounces back slowly after use and over time remembers body shape and sleeping position.
Latex	•A mattress made from natural latex created from the white sap of Hevea brisiliensis (rubber trees). Natural latex is hypoallergenic, responsive and contours to body shape to provide relief from aches and pains.
Hybrid	•A mattress that combines an inner core of springs (pocket or open coil) with layers of support foam and memory foam. Provides the best of both worlds: springs for support and foam for comfort.

The following are the standard sizes for mattresses in Eastland:

- Single (0.90 metre width)
- Double (1.40 metre width)
- King (1.60 metre width)
- Super King (1.80 metre width)

The mattresses that we retail include our own range of pocket sprung and hybrid mattresses which we manufacture at our production facility.

A quick guide to the bed types that we retail

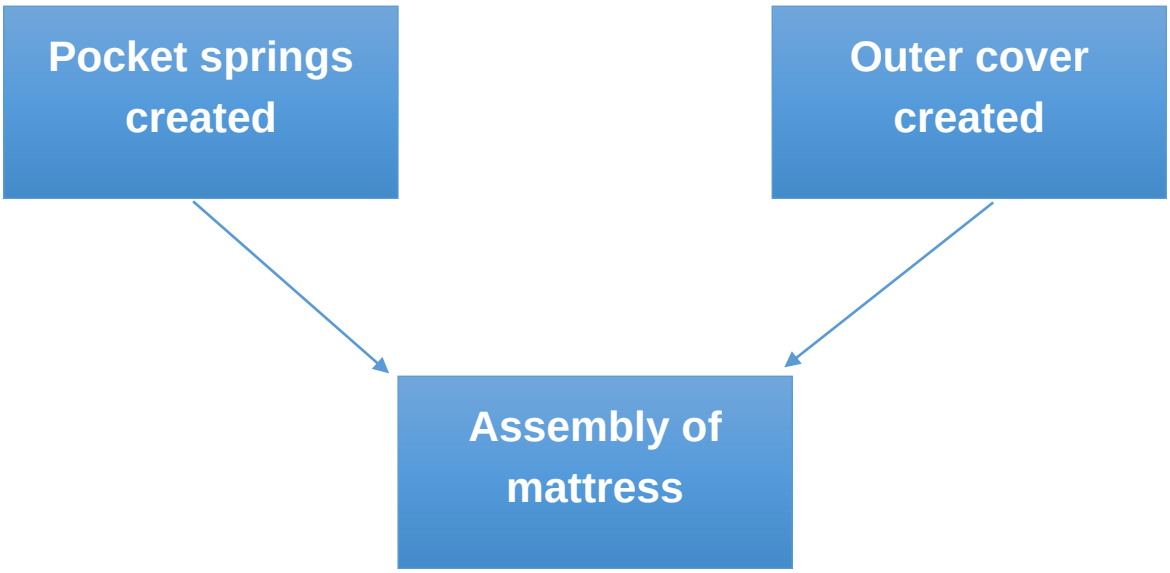
Divan	•A traditional firm bed base made from a wooden inner shell and heavy duty fabric covering which forms the mattress base. Many of our divan beds include underbed storage.
Upholstered	•A bed which includes a slatted mattress base within an upholstered shell. The slatted base can either be made using straight slats or curved sprung slats. Upholstered beds usually include a built-in headboard and some include underbed storage.
Wooden	•A bed frame made entirely from wood (usually pine or oak) with a slatted mattress base. Slats in the base can either be straight slats or curved sprung slats. The headboard is part of the bed frame.
Metal	•A bed frame made of metal with a slatted mattress base. Slats in the base can either be straight slats or curved sprung slats. The headboard is part of the bed frame.

Picture: Upholstered bed with underbed storage

All beds are available in sizes appropriate to fit the four standard sizes of mattresses sold. The beds that we retail include our own range of divan beds which we manufacture at our production facility.

Extract from the AmaZZZing Beds website: Our production process for mattresses

Here at AmaZZZing Beds our mattresses are made by our highly skilled production employees using high quality materials. Firstly, the pocket springs and mattress outer cover are created and then each mattress is assembled largely by hand.



Pocket springs created

Each of our mattresses contains an inner core of 2 layers of springs that are individually stitched into fabric pockets. The springs are steel coils that we purchase from our trusted supplier, located just 5 kilometres from our factory. These steel coils are stitched into fabric pockets by machine to create a single line of pocketed springs. The mattress core is created by zigzagging this line of pocketed springs to form a rectangle as shown below:

This rectangle is stabilised by adding a fine wire mesh around it.

Outer cover created

All of our mattress covers are made from damask fabric with a lining of upholstery padding as follows:

The damask fabric and lining are fed separately into a cutting & quilting machine. Firstly,the two layers are combined by quilting them together. Secondly, the combined layer is cut to the relevant size for the mattress.

The edges of each cut-out piece are stitched by a sewing machine which is manually operated. The side panel is also stitched on to a bottom cover.

Assembly of mattress

Assembly of the mattress is mainly a manual operation. Each mattress is assembled on a horizontal table which is part of a vice. The different layers are placed into the table in the following order:

- Bottom lined cover including the side panel;
- Layer of cotton padding (or a combination of memory foam and a padding layer for hybrid mattresses);
- Wire mesh layer (to protect the springs);
- Double layer of pocket springs;
- Wire mesh layer;
- Layer of cotton padding (or a combination of memory foam and a padding layer for hybrid mattresses);
- Top lined cover including the side panel.

The mattress is fixed together when the side panel is stitched on to the top cover with a binding machine which runs around the edge of the mattress.

The top grill of the vice is placed over the mattress, fixed into place and the mattress is flattened. The vice is rotated to a vertical position from a horizontal position and the mattress is further strengthened by button tufting, a process where thick thread is passed through the mattress by hand and a button secured on each side of the thread. The mattress is released from the vice and moved to the packing area where it is wrapped in a plastic covering for protection.

Other information about company operations

Retail stores

AmaZZZing Beds currently has 120 stores located in the major cities and towns of Eastland. Of these, 40 are branded as superstores and have room to accommodate a large range of beds and mattresses. The other 80 stores are smaller and can only accommodate a limited range. The decision about which mattresses and beds are displayed at each of these stores is made by each Store Manager.

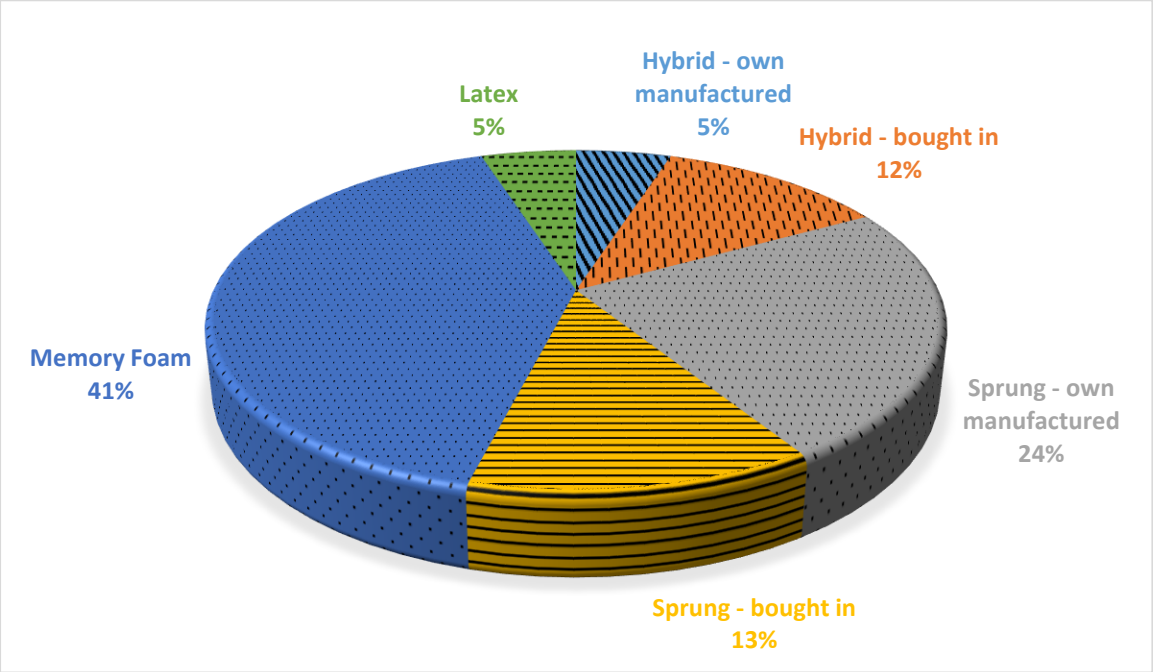
The retail stores are effectively showrooms for customers to see, touch and try out the AmaZZZing Beds range of mattresses and beds. Each store is laid out in such a way that different types of mattress are located in the same area and each type of mattress has its own colour-coded labelling. This labelling includes information about mattress specifications and a score out of five for firmness.

Each store has a team of salespeople that are trained and very knowledgeable about the different mattress and bed types and can advise customers depending on their preferences and requirements. There are also numerous information terminals within each store where customers can access the company's website which contains information about all of the products and gives advice about which type of mattress best fits different needs.

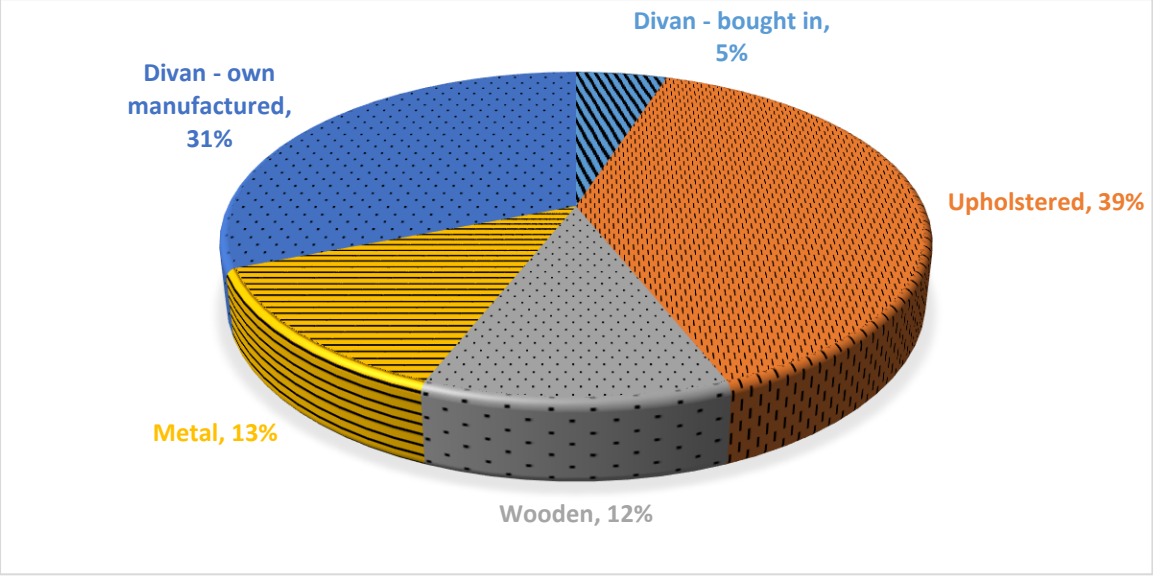
AmaZZZing Beds sells directly to the public: there are currently no corporate customers. All beds and mattresses have to be ordered for home delivery and are not available to be taken away from the store. Ordering can either be done in store with a salesperson or through the company's website and at the point of ordering the customer pays in full. Delivery to customers is carried out by the Logistics team.

Sales

All revenue is generated in Eastland. The budgeted revenue from the sale of mattresses for the year ending 30 June 2021 is E$114.4 million, which is split as follows:



The budgeted revenue from the sale of beds for the year ending 30 June 2021 is E$65.0 million, which is split as follows:



There is seasonality in both sales of beds and mattresses, with sales typically higher in the colder months of the year.

Manufacturing facility

AmaZZZing Beds has a single manufacturing facility where it manufactures its own range of divan beds and mattresses. The process of manufacturing the divan beds and the mattresses has changed little since production started in 1990.

All of the beds and mattresses that AmaZZZing Beds manufactures are made for inventory, rather than for a particular customer order. After production is complete, finished goods inventory is sent to the distribution warehouse.

Purchasing and suppliers

The Purchasing Department is responsible for procuring both bought in products and raw materials used in production.

Bought in beds and mattresses are sourced from companies that make the following major bed and mattress brands in Eastland:

- Zee Sleep
- Relaxicle
- Memfoam Delux
- Comfort ZZZ
- Sleepsters

AmaZZZing Beds holds inventory of its most popular bought in beds and mattresses at its Distribution Centre to ensure that customer orders can be dealt with quickly. Other less popular lines are only ordered from the supplier on the receipt of a customer order. Typically, there is a two-week lead time from placing an order with a supplier and receipt of the bed or mattress into the Distribution Centre.

The main raw materials used in production are springs, fabric, padding layers, memory foam and wood. The springs are sourced from a single supplier located in Eastland, close to the production facility. This supplier has been used for the last eight years and AmaZZZing Beds accounts for 75% of its revenue. Relationships with this supplier are excellent.

Memory foam is also sourced from a single supplier located in Westland, a country that borders Eastland. This supplier has been used since AmaZZZing Beds started to produce hybrid mattresses five years ago. Again, relationships with this supplier are excellent.

All other raw materials (fabric, padding layers, wood and consumables) are sourced from a variety of suppliers, mostly located in Eastland. Selection of suppliers for these materials is usually based on consideration of cost and speed of delivery. Increasingly though AmaZZZing Beds considers the sustainability of the materials that they use and the sustainability credentials of their suppliers.

Supplier payment terms vary significantly and range between 30 and 75 days. AmaZZZing Beds takes advantage of the credit terms granted.

Customer guarantees

All of the beds and mattresses that AmaZZZing Beds sells have a 12-month guarantee. For the mattresses and beds that are bought in, this guarantee is supported by the supplier. For the mattresses and beds that AmaZZZing Beds manufactures, few customers have ever returned goods under guarantee.

Distribution Centre and Logistics

The Distribution Centre is located 10 kilometres from the production facility and holds inventory of manufactured and bought in beds and mattresses. All customer orders are despatched from this centre.

Upon receipt of a customer order a member of the Customer Services Department will confirm that the item is in inventory or notify the Purchasing Department to place an order with the supplier. Where items are in inventory AmaZZZing Beds aims to despatch to the customer within 7 days.

AmaZZZing Beds has its own fleet of vehicles that travel throughout Eastland delivering to customers. It is the responsibility of the Logistics Managers to schedule deliveries to ensure that trucks are as full as possible before leaving the Distribution Centre.

Employees

Current employee numbers are as follows:

	Number
Retail	575
Production	285
Logistics	170
Head Office	130
Total	**1,160**

AmaZZZing Beds has a policy of paying its employees above the national living wage of Eastland. It has been recognised as a good employer by the Eastland Trade Institute in respect of employee welfare and training opportunities.

Finance

The financial information systems are integrated with the sales, production and inventory systems. The company operates a standard absorption costing system using a facility-wide overhead absorption rate based on direct labour hours for both variable and fixed production overheads.

Budgets are produced annually using incremental budgeting, based on information provided by functional managers. The company operates a participative approach to budgeting and functional managers are given budget responsibility for their respective areas. For production, standard cost cards are produced which are updated annually.

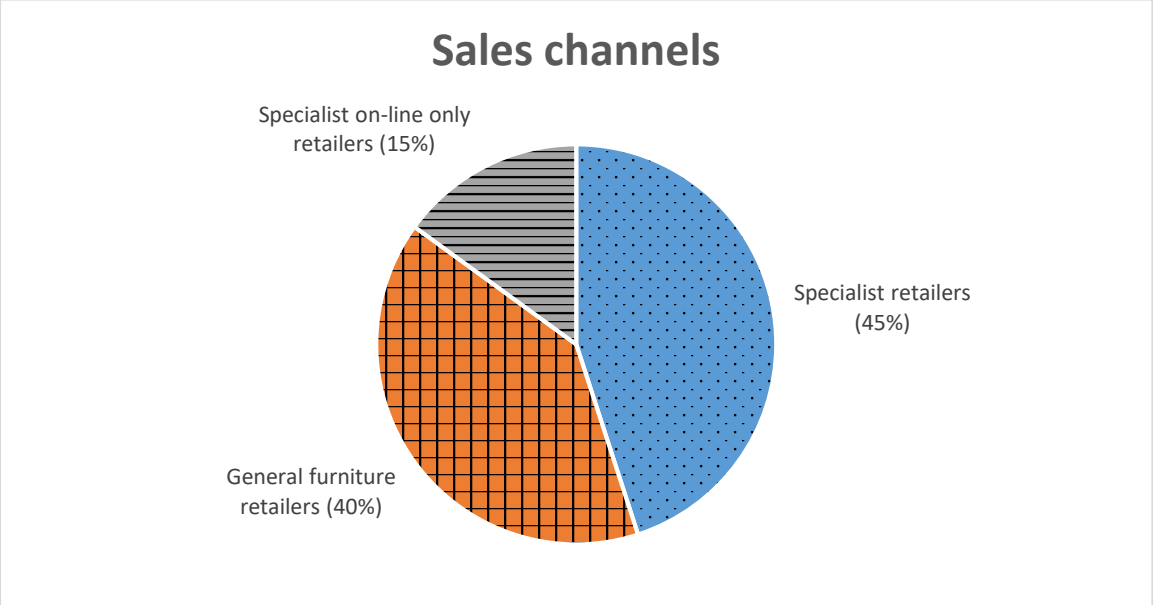
The mattress and bed industry in Eastland

General trend

After years of stagnation, over the last 5 years there has been growth in sales of mattresses and beds (3.5% per year over the period) due in part to the popularity of wellness and sleep quality which are seen as important for health. Many people now digitally monitor their sleep patterns.

Sales channels for beds and mattresses

In Eastland, sales of beds and mattresses (by revenue) during the year to 31 December 2019 were made through the following sales channels:

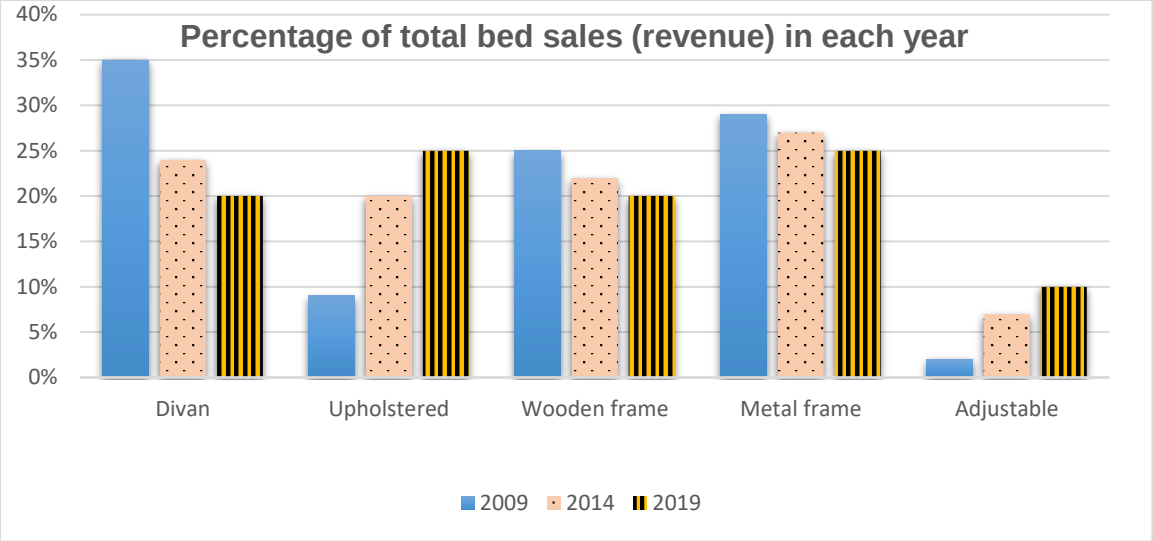


In Eastland there are over 300 specialist retailers. Two of these (AmaZZZing Beds and Gordon's Beds) are national chains that account for 80% of specialist retailer sales (by revenue). AmaZZZing Beds is the largest of these two retailers. These two national chains sell both through retail stores and their own websites. The other 20% (by revenue) is made up of small independent bed and mattress store businesses, which typically have just one retail store and have no on-line presence.

Sales through specialist on-line only retailers are growing with the success of a company called Robert Mattresses which was founded 5 years ago. Robert Mattresses launched a mattress range that can be ordered on-line and delivered direct to the customer. A special feature of a Robert mattress is that it is delivered vacuum packed in a recyclable box.

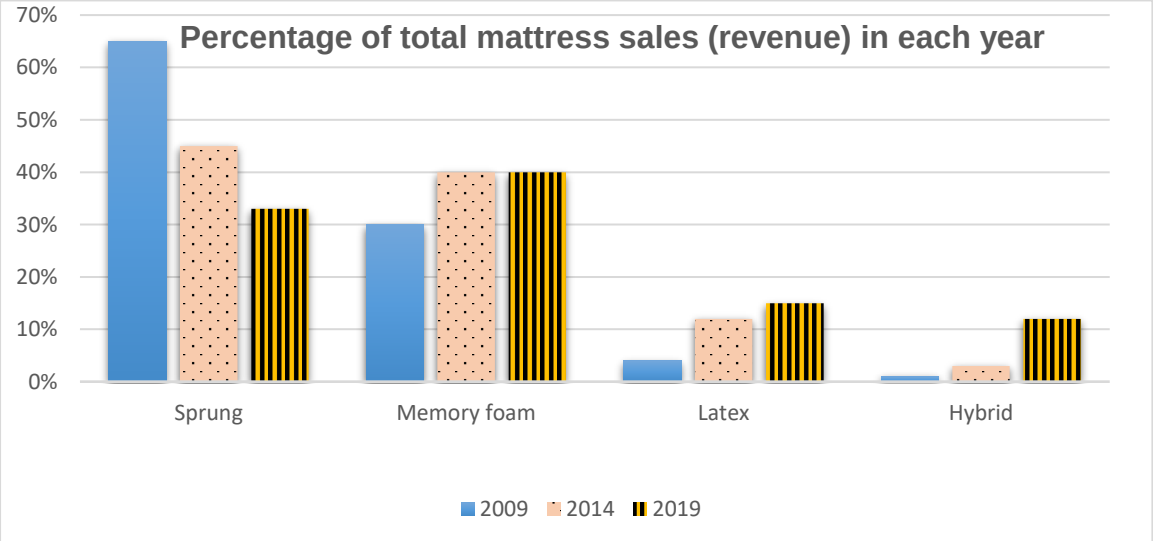
Sales by type of bed

Beds sold in Eastland can be split into the following broad types: divan, upholstered, wooden frame, metal frame and adjustable. The mix of bed types sold has changed over the last 10 years as shown in the following chart:



Sales by type of mattress

Mattresses sold in Eastland can be split into the following broad types: sprung, memory foam, latex and hybrid. The mix of mattress types sold has changed over the last 10 years as shown in the following chart:



Brands and manufacturing

There are eight well-known brands of mattresses and beds that are sold in Eastland:

- Zee Sleep
- Relaxicle
- Memfoam Delux
- Comfort ZZZ
- Sleepsters
- AmaZZZing Beds own brand
- Gordon's Beds own brand
- Robert Mattresses.

The beds and mattresses of Zee Sleep, Sleepsters, AmaZZZing Beds, Gordon's Beds and Robert Mattresses are all manufactured in Eastland. The other brands are manufactured either elsewhere in Europe or in the United States.

Latest trends in the industry

Sustainability in both production and retailing of beds and mattresses is becoming increasingly important. In 2018, Zee Sleep was the first manufacturer in Eastland to produce a mattress made largely from recycled materials. In the same year, Gordon's Beds started a recycling scheme in which customers can opt to have their old bed and mattress taken away for recycling. The recycling of old mattresses is a major concern in Eastland. Industry reports suggest that only 20% of old mattresses are recycled with the remainder ending up in landfill sites. In 2019, AmaZZZing Beds announced its own sustainability programme, including a plan to replace all diesel-powered delivery vehicles with hybrid vehicles.

Increasing digitalisation is also driving the industry. The growth in wrist-worn fitness trackers linked to digital health apps and the monitoring of sleep patterns has led to innovations in bed and mattress design. 2019 saw the launch of Eastland's first smart bed made by Sleepsters: a bed which uses sensors and other digital technologies to gather data about heart rate, breathing and movement during sleep which is used to generate sleep statistics.

Financial statements for the year ended 30 June 2020

AmaZZZing Beds
Statement of profit or loss for the year ended 30 June 2020

	2020 E$000	2019 E$000
Revenue	174,300	169,120
Cost of sales	(94,180)	(92,960)
Gross profit	**80,120**	**76,160**
Selling, distribution and marketing costs	(52,420)	(51,305)
Administrative expenses	(15,900)	(15,200)
Operating profit	**11,800**	**9,655**
Finance costs	(234)	(340)
Profit before tax	**11,566**	**9,315**
Income tax expense	(3,400)	(2,510)
Profit for the year	**8,166**	**6,805**

AmaZZZing Beds
Statement of financial position at 30 June 2020

	2020 E$000	2020 E$000	2019 E$000	2019 E$000
ASSETS				
Non-current assets				
Property, plant and equipment		19,320		20,750
Current assets				
Inventory	18,521		17,856	
Other receivables	2,200		2,063	
Cash and cash equivalents	18,645		14,739	
		39,366		34,658
Total assets		**58,686**		**55,408**
EQUITY AND LIABILITIES				
Issued E$1 equity share capital	100		100	
Retained earnings	22,626		19,460	
Total equity		22,726		19,560
Non-current liabilities				
Borrowings		3,100		4,800
Current liabilities				
Trade and other payables	29,460		28,538	
Current tax liabilities	3,400		2,510	
		32,860		31,048
Total equity and liabilities		**58,686**		**55,408**

Notes on the financial statements

AmaZZZing Beds depreciates each item of property, plant and equipment over its useful life on a prorata basis.

AmaZZZing Beds
Statement of cash flows for the year ended 30 June 2020

	E$000	E$000
Cash flows from operating activities		
Profit before tax	11,566	
Adjustments		
Depreciation	1,480	
Profit on sale of property, plant and equipment	(62)	
Finance costs	234	
		13,218
Movements in working capital		
Increase in inventory	(665)	
Increase in other receivables	(137)	
Increase in trade and other payables	922	
		120
Cash generated from operations		**13,338**
Tax paid		(2,510)
Interest paid		(234)
Net cash inflow from operating activities		**10,594**
Cash flows from investing activities		
Purchase of property, plant and equipment	(760)	
Proceeds on disposal of property, plant and equipment	772	
Net cash inflow from investing activities		12
Cash flows from financing activities		
Repayment of borrowing	(1,700)	
Dividend paid	(5,000)	
Net cash outflow from financing activities		(6,700)
Net increase in cash and cash equivalents		**3,906**
Cash and cash equivalents at the start of the year		14,739
Cash and cash equivalents at the end of the year		**18,645**

Budget information for the year ending 30 June 2021

Summary budget

	Mattresses E$000	Beds E$000	Total E$000
Sales revenue	114,359	65,046	179,405
Cost of sales	(58,249)	(36,991)	(95,240)
Gross profit	**56,110**	**28,055**	**84,165**
Gross profit margin	49.1%	43.1%	46.9%

Total for mattresses

	Bought in E$000	Own manufactured: Pocket Sprung E$000	Own manufactured: Hybrid E$000	Total E$000
Sales revenue	81,450	27,871	5,038	114,359
Cost of sales	(43,501)	(12,633)	(2,115)	(58,249)
Gross profit	**37,949**	**15,238**	**2,923**	**56,110**
Gross profit margin	46.6%	54.7%	58.0%	49.1%

Bought in mattresses by type

	Sprung	Memory foam	Latex	Hybrid	Total
Sales volume	41,800	78,000	9,800	21,000	150,600
	E$000	**E$000**	**E$000**	**E$000**	**E$000**
Sales revenue	14,630	46,800	6,370	13,650	81,450
Buy in cost	(7,315)	(25,350)	(3,381)	(7,455)	(43,501)
Gross profit	**7,315**	**21,450**	**2,989**	**6,195**	**37,949**
Gross profit margin	50.0%	45.8%	46.9%	45.4%	46.6%
Average selling price*	E$350	E$600	E$650	E$650	
Average buy in cost*	E$175	E$325	E$345	E$355	

*These are the averages across all brands and sizes of mattress.

Own manufactured: Pocket Sprung

	Single	Double	King	Super King	Total
Sales volume	12,600	18,200	21,300	7,000	59,100
Average selling price	E$300	E$430	E$550	E$650	
	E$000	**E$000**	**E$000**	**E$000**	**E$000**
Sales revenue	3,780	7,826	11,715	4,550	27,871
Cost of sales:					
Material cost	(678)	(1,469)	(2,005)	(753)	(4,905)
Direct labour cost	(517)	(1,045)	(1,495)	(577)	(3,634)
Variable production overhead	(105)	(213)	(304)	(117)	(739)
Fixed production overhead	(478)	(966)	(1,380)	(531)	(3,355)
Gross profit	**2,002**	**4,133**	**6,531**	**2,572**	**15,238**
Gross profit margin	53.0%	52.8%	55.7%	56.5%	54.7%

Own manufactured: Hybrid

	Single	Double	King	Total
Sales volume	800	2,800	4,500	8,100
Average selling price	E$400	E$560	E$700	
	E$000	**E$000**	**E$000**	**E$000**
Sales revenue	320	1,568	3,150	5,038
Cost of sales:				
Material cost	(55)	(287)	(537)	(879)
Direct labour cost	(40)	(188)	(356)	(584)
Variable production overhead	(8)	(38)	(72)	(118)
Fixed production overhead	(37)	(172)	(325)	(534)
Gross profit	**180**	**883**	**1,860**	**2,923**
Gross profit margin	56.3%	56.3%	59.0%	58.0%

Total for beds

	Bought in E$000	Own manufactured: Divan E$000	Total E$000
Revenue	44,698	20,348	65,046
Cost of sales	(26,213)	(10,778)	(36,991)
Gross profit	**18,485**	**9,570**	**28,055**
Gross profit margin	41.4%	47.0%	43.1%

Bought in beds by type

	Divan	Upholstered	Wooden	Metal	Total
Sales volume	7,500	35,900	21,800	25,000	90,200
	E$000	**E$000**	**E$000**	**E$000**	**E$000**
Sales revenue	3,188	25,130	7,630	8,750	44,698
Buy in cost	(2,025)	(14,360)	(4,578)	(5,250)	(26,213)
Gross profit	**1,163**	**10,770**	**3,052**	**3,500**	**18,485**
Gross profit margin	36.5%	42.9%	40.0%	40.0%	41.4%
Average selling price*	E$425	E$700	E$350	E$350	
Average buy in cost*	E$270	E$400	E$210	E$210	

*These are the averages across all brands and sizes of bed.

Own manufactured: Divan beds

	Single	Double	King	Super King	Total
Sales volume	11,100	15,700	18,500	6,400	51,700
Average selling price	E$250	E$375	E$450	E$525	
	E$000	**E$000**	**E$000**	**E$000**	**E$000**
Sales revenue	2,775	5,888	8,325	3,360	20,348
Cost of sales:					
Material cost	(722)	(1,531)	(2,104)	(832)	(5,189)
Direct labour cost	(366)	(777)	(1,069)	(422)	(2,634)
Variable production overhead	(74)	(157)	(217)	(86)	(534)
Fixed production overhead	(337)	(714)	(982)	(388)	(2,421)
Gross profit	**1,276**	**2,709**	**3,953**	**1,632**	**9,570**
Gross profit margin	46.0%	46.0%	47.5%	48.6%	47.0%

Example Standard Cost Card: Pocket Sprung Mattress (King)

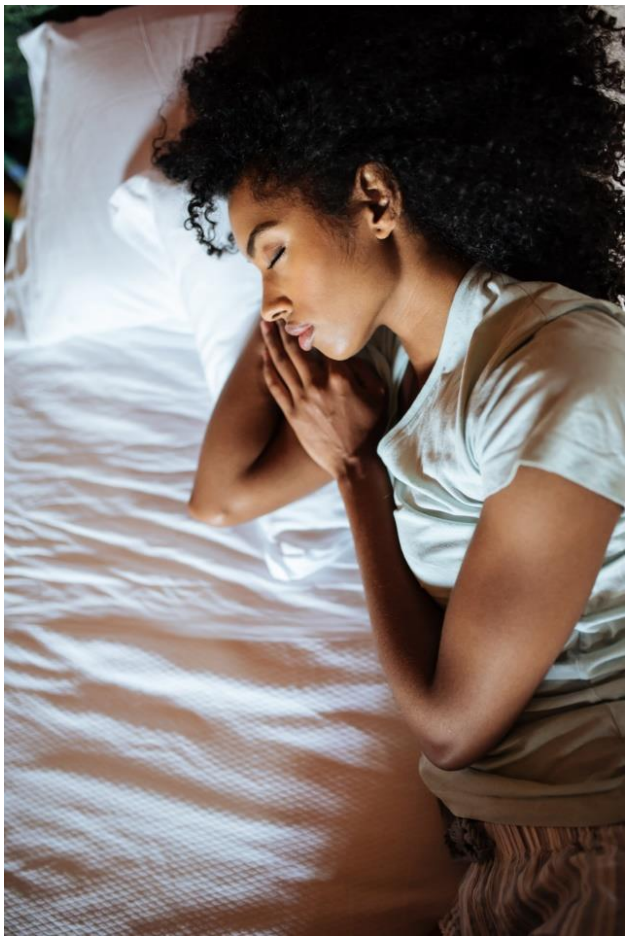
	Quantity	E$ per unit of quantity	E$	E$
Materials:				
Springs	1,575 springs	0.01	15.75	
Pocket fabric	7.00 metres^2	1.25	8.75	
Padding layers	6.30 metres^2	2.50	15.75	
Covering fabrics	8.75 metres^2	5.50	48.13	
Other fixings			5.75	
Total material cost				94.13
Direct labour:				
Pocket springs	2.10 hours	14.00	29.40	
Cover	0.20 hours	12.00	2.40	
Assembly	2.40 hours	16.00	38.40	
Total labour cost				70.20
Variable production overhead	4.70 hours	3.04		14.29
Fixed production overhead	4.70 hours	13.79		64.81
Total production cost				**243.43**

Article

Lifestyle Today

1 October 2020 No. 1,223

The emergence of Sleep Science in the digital age



By: Roberta Gomez

It seems that over half of us (myself included) now wear fitness trackers which allow us to monitor all aspects of our health, including how well we sleep.

Most of us though do little with this information about our sleep patterns other than despair that we haven't had the recommended eight hours and promise ourselves that we will go to bed earlier in the future!

However, every night a wealth of data is being generated from how much deep sleep we're getting to our breathing patterns and oxygen saturation levels. Information that if correctly analysed and interpreted could help us to make improvements to benefit our health and well-being.

The science of sleep has been around for years with sleep clinics linked to hospitals and university research facilities monitoring conditions such as sleep apnea. Accessibility to this though has until now been limited to people referred by doctors with potential health issues or research subjects.

However, with the easy availability of digital data a new brand of sleep science is now emerging that is accessible to all. Apps promising tailored health and sleep advice based on a person's own data are becoming common place.

More than that though Eastland's first commercial sleep clinics are being opened with experts on hand offering a range of services including general sleep advice, hypnosis and sleep monitoring services.

It should be no surprise that one of the first businesses to tap into this new trend is Gordon's Beds which opened its first sleep clinic last month. Matching mattress expertise with sleep expertise seems a marriage made in heaven!

Tax regime in Eastland

- The corporate income tax rate to be applied to taxable profits is 30%.
- Unless otherwise stated below, accounting rules on recognition and measurement are followed for tax purposes.
- The following expenses are not allowable for tax purposes:
    - accounting depreciation
    - amortisation
    - impairment charges
    - entertaining expenditure
    - donations to political parties
    - taxes paid to other public bodies.
- Tax depreciation allowances are available on all items of plant and equipment (including computer equipment) at a rate of 25% per year on a reducing balance basis. A full year's allowance is available in the year that the asset is acquired. Tax depreciation allowances are not available for property assets.
- Tax losses can be carried forward indefinitely to offset against future taxable profits from the same business.
- Sales tax is charged on all standard rated goods and services at a rate of 20%. Tax paid on inputs into a business can be netted off against the tax charged on outputs from that business. All businesses are required to pay over the net amount due on a monthly basis.
- Eastland has adopted international transfer pricing policies to ensure that corporate tax is paid on profits calculated on an arm's length basis, in respect of international trade. Other European countries have adopted the same policies.

Operational Case Study Exam

Maximum Time Allowed: 3 Hours

Welcome, Candidate Name

If this is not your name, please let your administrator know.

Click **Next** to start the test.

This examination is structured as follows:

Section number	Time for section (minutes)	Number of tasks	Number of sub-task/s	% time to spend on each sub-task
1	45	1	2	(a) 52% (b) 48%
2	45	1	3	(a) 20% (b) 32% (c) 48%
3	45	1	2	(a) 48% (b) 52%
4	45	1	3	(a) 36% (b) 32% (c) 32%

Each section (task) has a number of sub-tasks. An indication of how much of the time available for the section that you should allocate to planning and writing your answer is shown against each sub-task in the text of the question (and summarised in the table above).

This information will be available for you to access during the examination by clicking on the Pre-seen button.

Reference Material Pre-seen

Today is 1 December 2020. The directors have decided to sell to the corporate customer market and target the hotel industry. You receive the following email from Una Volk, Finance Manager:

From: Una Volk, Finance Manager
To: Finance Officer
Subject: Time series analysis and receivables management

I have been told that a number of hotel chains are interested in buying our hybrid mattresses and in order to update the budget we need to establish the potential sales volumes to hotels. I have obtained time series information from the Eastland Mattress Trade Association about quarterly sales volumes of hybrid mattresses to the hotel industry in Eastland (attached). I would like you to prepare a briefing paper to the Senior Management Team (SMT) which explains, based on the information shown on the attached schedule:

- How time series analysis has been applied to the base data to derive the trend and seasonal variations and why the trend and seasonal variations need to be separated from the base data. Please also explain what this data shows in respect of the demand for hybrid mattresses from Eastland's hotel industry.

(sub-task (a) = 52%)

This will be the first time that we sell to customers on credit and it has been decided that an internal credit control function will be set up to manage receivables. We expect to sell to small family-run hotels as well as large hotel chains. I would like you to include in the briefing paper to the SMT an explanation of:

- The financial impact to our business of selling to these new hotel customers on credit rather than for cash. Please also explain the actions that we should take when approving customers, setting credit terms and monitoring the amounts owing by these new hotel customers.

(sub-task (b) = 48%)

Una Volk
Finance Manager
AmaZZZing Beds

The attachment to the email can be found by clicking on the Reference Material button above.

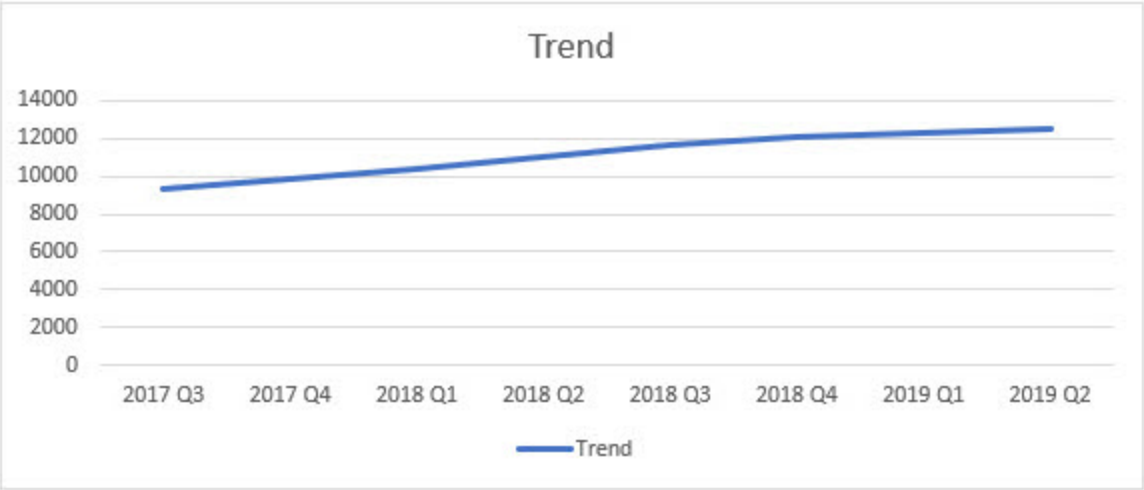
Time series analysis for hybrid mattress sales for the Eastland hotel industry

Table 1: Base data

Year	Quarter	Sales volume
2017	1	10,200
	2	8,000
	3	6,400
	4	11,700
2018	1	12,450
	2	10,000
	3	8,500
	4	14,600
2019	1	14,700
	2	11,100
	3	9,000
	4	16,200

Note: Quarter 1 in each year relates to January to March.

Chart 1: The trend



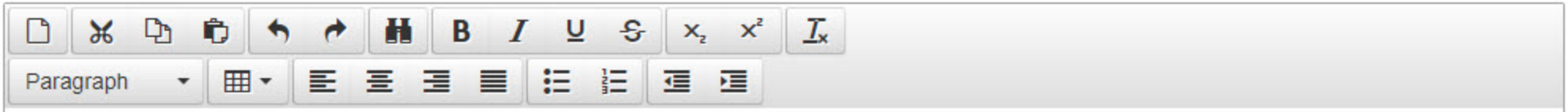
Note: The trend is based on a four-point moving average.

Table 2: Seasonal variations

	Quarter 1	Quarter 2	Quarter 3	Quarter 4
Seasonal variations (sales volumes)	+ 2,208	- 1,261	- 3,086	+ 2,139

Reference Material Pre-seen

Write the briefing paper as requested by Una Volk in the box below:



Reference Material Pre-seen

It is now February 2021. Due to increasing demand for hybrid mattresses, the Senior Management Team (SMT) has decided to set up a new production facility for all hybrid mattresses in a building that was previously used as a warehouse. The SMT has decided to invest in a highly automated digital production line for this new facility. You receive the following email from Una Volk, Finance Manager:

From: Una Volk, Finance Manager
To: Finance Officer
Subject: Costing system and maintenance contract decision

The new production facility is going to be highly automated compared to our existing labour-intensive production facility. It has been decided that we will continue to use absorption costing and that the new facility will have its own variable and fixed production overhead absorption rates. Stephan Tang, Finance Director, has asked for a briefing paper that he can circulate to the other directors which explains:

- The issues we should consider when choosing the base for the absorption rates in the new production facility.

(sub-task (a) = 20%)

The new digital production line will be fully integrated with our inventory, purchasing and sales ordering systems and Stephan believes that we could utilise this to improve our costing information through the use of a digital costing system. Please include in the briefing paper an explanation of:

- How we could improve the accuracy of our costing information by using a digital costing system and the benefits of the improved accuracy for the business.

(sub-task (b) = 32%)

Gavin Thorpe, Production Director, is considering outsourcing the maintenance of the new production line. A maintenance company has offered a choice of two contracts covering a period of 6 months: Contract 1 or Contract 2. The cost of Contract 1 is dependent on the level of production and the number of maintenance issues that arise. One of your colleagues has drawn up a decision tree (attached) to help decide which contract to choose. Please include in the briefing paper an explanation of:

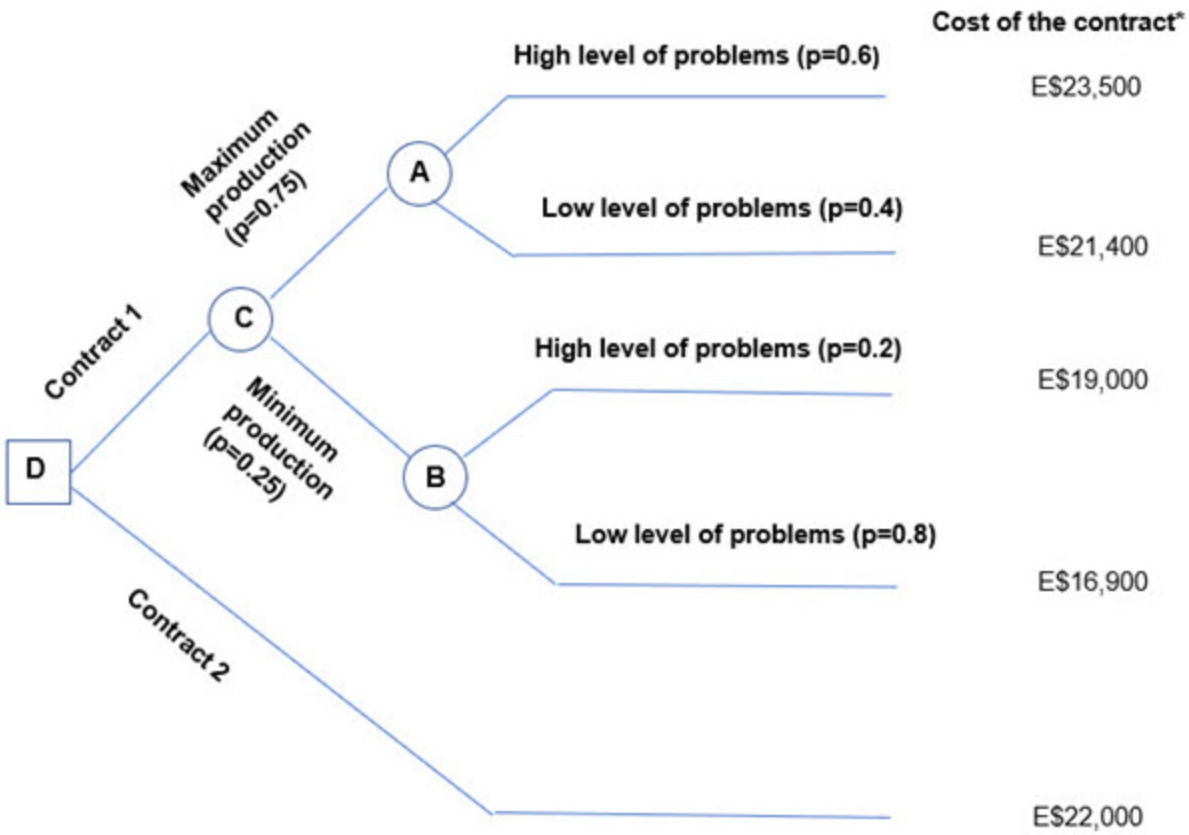
- The decision tree and how it can be used to make a decision about which contract to choose. Please also explain the limitations of using this decision tree to make this decision.

(sub-task (c) = 48%)

Una Volk
Finance Manager
AmaZZZing Beds

The attachment to the email can be found by clicking on the Reference Material button above.

Decision Tree



*The cost of the contract is inclusive of all fees.

Workings

	E$
0.6 x E$23,500	14,100
0.4 x E$21,400	8,560
	22,660
0.2 x E$19,000	3,800
0.8 x E$16,900	13,520
	17,320
0.75 x E$22,660	16,995
0.25 x E$17,320	4,330
	21,325

Reference Material Pre-seen

Write the briefing paper requested by Una Volk in the box below:

Paragraph

Reference Material Pre-seen

It is now July 2021 and the new production facility for hybrid mattresses became operational on 1 June 2021. Una Volk, Finance Manager, telephones you and says:

"Ben De Luca, Chief Executive Officer, has asked for an explanation of the fixed production overhead variances for the new production facility for June 2021. He has also queried the usefulness of these variances for controlling fixed production overhead. This is the first month that the new facility has been operational. There were some unforeseen costs associated with insuring and safety testing the building that occurred in June and there was a delay in employee training. It had been expected that the direct workforce would be made up of 10 new inexperienced employees and 15 experienced employees transferred from the main production facility. In reality there were 20 new and 8 transferred employees. An additional supervisor was also appointed.

Also, Ben has sent me two queries regarding some of the non-current assets in the new production facility.

I will send you a schedule of information about all of this shortly and would like you to prepare a briefing note for Ben which includes:

- An explanation of what each of the fixed production overheads variances mean and reasons why each variance has occurred. Please also explain any limitations of using these variances to control the fixed production overheads at the new facility.

(sub-task (a) = 48%)

- Answers to each of Ben's queries, which are included on the schedule I shall send you shortly, about non-current assets in the new production facility."

(sub-task (b) = 52%)

Una sends you the schedule which includes the fixed production overhead variances and Ben's two non-current asset queries.

This can be found by clicking on the Reference Material button above.

Schedule from Una Volk

Fixed production overhead variances for the new production facility for June 2021

Variance	E$	Adverse / Favourable
Expenditure	10,813	Adverse
Capacity	7,673	Favourable
Efficiency	4,185	Adverse

Note:

- Due to a pending review of our costing approach across the business, it was decided to temporarily use a facility-wide fixed production overhead absorption rate based on direct labour hours for the new production facility. This budgeted rate is E$18.60 per direct labour hour.

Non-current asset queries from Ben De Luca

"We have set up the new production facility in an old warehouse that we stopped using a year ago. Prior to deciding on the expansion, we had considered selling the building and it had been valued at E$100,000 on 30 June 2021. This is significantly higher than its carrying amount of E$40,000 in our financial statements. I would like to include this value of E$100,000 in our financial statements for the year to 30 June 2021. I also think that we should do this for the rest of the buildings that we own where the revalued amount is higher than the carrying amount.

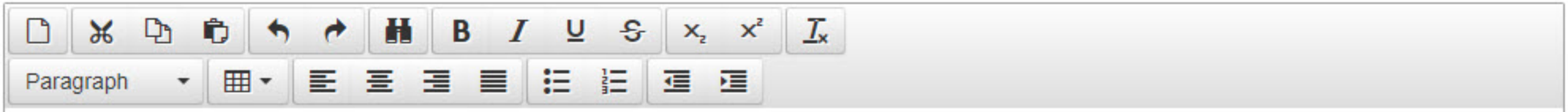
- Please let me know whether this is possible, and how revaluing our buildings will affect our financial statements for the year to 30 June 2021 and reported profit in the following year.

  We have spent E$950,000 on the new automated digital production line. The supplier has informed us that the production line will have a useful life of 20 years, although I know that Gavin is sceptical of this and believes that it will need to be replaced in 15 years. My view is that we should depreciate over 20 years because this will spread the cost of the new line over more years.

- Please could you explain to me how many years we should depreciate this asset over and if we choose to depreciate over 15 years, could we in the future change its useful life to 20 years if we discovered that the supplier's assessment was accurate? I'd also like to know how any change in useful life would be dealt with in the financial statements."

Reference Material Pre-seen

Write the briefing note requested by Una Volk in the box below:



Reference Material Pre-seen

It is now 2 months later and you receive the following email:

From: Una Volk, Finance Manager
To: Finance Officer
Subject: Budget, KPIs and one-off contract

Gavin Thorpe, Production Director, is concerned about the handling of raw materials into production at the new production facility. Apparently, raw materials are not always placed in the correct production area quickly enough leading to delays in production and employee idle time. Gavin wonders if part of the problem is that raw materials handling was only allocated a small budget. I've suggested that we re-think the budget for this function using a zero-based budgeting (ZBB) approach. I know that the original budget allows for two small forklift trucks and two operating staff who are responsible for picking raw materials from the warehouse and moving these into the appropriate production area. Other than the forklift trucks there is currently no automated lifting equipment.

Another area that Gavin is concerned about is the in-house Machinery Maintenance Department. The objective of the department is to ensure that all production machinery is kept in optimal working order to protect the quality and efficiency of production. It is responsible for regular 6-monthly routine maintenance of all machinery as well as dealing with repairs when required. Gavin is keen that the performance of the department is adequately monitored with the use of KPIs and has asked for suggestions.

On a different matter, we have been negotiating with a hotel chain to supply it with 500 hybrid mattresses. Gavin thinks this could lead to large orders in the future. He is now trying to decide if we should accept its latest price offer which is lower than our full cost. I've attached a schedule with information about the order.

Please prepare a briefing paper that I can send to Gavin which:

- Explains how a ZBB approach should be applied to create a budget for the raw materials handling function to help improve operational efficiency.

(sub-task (a) = 36%)

- Suggests three KPIs which are appropriate for monitoring the performance of the Machinery Maintenance Department and explain why each of these are appropriate.

(sub-task (b) = 32%)

- Explains whether each of the costs on the attached schedule are relevant or irrelevant costs of deciding whether to accept the order.

(sub-task (c) = 32%)

Una Volk
Finance Manager
AmaZZZing Beds

The attachment to the email can be found by clicking on the Reference Material button above.

Costs associated with the potential hotel chain order

Cost item	Note	Total cost for the 500 mattresses E$
Covering fabric	1	22,500
Other raw materials	2	32,500
Direct labour	3	31,000
Total production overheads	4	52,000
Additional costs	5	2,500
Total cost		**140,500**

Notes:

1. The cost of E$22,500 is for 3,750 metre^2 of covering fabric at a standard cost of E$6 per metre^2. There are 4,000 metre^2 of covering fabric in inventory which is no longer used in normal production that could be used for this order. If not used for this order this covering fabric can be sold for E$2.50 per metre^2. This covering fabric cost E$5.50 per metre^2 to purchase.
2. The cost of E$32,500 is based on the standard cost of other raw materials. All of the other raw materials are in inventory and are currently used in normal production. Prices for these other raw materials have recently increased.
3. The direct labour cost of E$31,000 is the standard cost of labour. Direct employees are paid for a fixed number of hours per week. There is spare capacity and therefore 75% of this order can be made during normal working hours. The other 25% will require overtime to be worked by the direct employees, for which they are paid a premium of 50% above normal wage rate.
4. The total production overheads of E$52,000 is the total of variable and fixed production overheads absorbed.
5. In addition to the above, the hotel chain has asked for the name of the hotel to be stitched onto each mattress which will require hiring an embroidery machine at a cost of E$2,000. In addition, a Sales Manager has visited the company on a couple of occasions to discuss the order at a cost of E$500.

Reference Material Pre-seen

Write the briefing paper requested by Una Volk in the box below:

Paragraph

Thank you for completing the Operational Case Study Exam.

Before you leave, don't forget to collect your printed confirmation of attendance.

Please click the End Exam (E) button before leaving the testing room quietly.

Operational Case Study Exam

Maximum Time Allowed: 3 Hours

Welcome, Candidate Name

If this is not your name, please let your administrator know.

Click **Next** to start the test.

This examination is structured as follows:

Section number	Time for section (minutes)	Number of tasks	Number of sub-task/s	% time to spend on each sub-task
1	45	1	2	(a) 52% (b) 48%
2	45	1	3	(a) 40% (b) 40% (c) 20%
3	45	1	3	(a) 40% (b) 32% (c) 28%
4	45	1	3	(a) 44% (b) 16% (c) 40%

Each section (task) has a number of sub-tasks. An indication of how much of the time available for the section that you should allocate to planning and writing your answer is shown against each sub-task in the text of the question (and summarised in the table above).

This information will be available for you to access during the examination by clicking on the Pre-seen button.

Reference Material Pre-seen

Today is 1 December 2020. AmaZZZing Beds is planning to open two Sleep & Wellness Clinics in buildings close to its two largest retail stores. They will be known as the Northern Clinic and the Southern Clinic. Each clinic will offer a range of services including sleep monitoring & advice, wellness counselling and treatments to aid sleep, such as acupuncture and hypnosis. Freelance specialists will be used to provide these services. You receive the following email from Una Volk, Finance Manager:

From: Una Volk, Finance Manager
To: Finance Officer
Subject: Sleep & Wellness Clinics: advertising and budgets

To promote the Sleep & Wellness Clinics we are going to create eight short videos on sleep science, wellness and relaxation. The videos will be available for free on both our website (which we will have to upgrade) and the nation's largest video hosting website. We will be charged a fee each time a video is accessed on this site.

Our Marketing Department has the expertise to create the videos but will need to hire filming and editing equipment. Actors and sleep and wellness specialists will feature in the videos and they will charge fees. The actors (who will appear in two of the videos) will be paid a royalty for each viewing of the video that they appear in.

Ben De Luca, Chief Executive Officer, has asked that we establish the cost of each video. I would like you to prepare a briefing note for Ben which explains:

- The nature and types of cost included and how to establish the total cost of each video over its lifetime. Please also explain any difficulties associated with establishing this total cost per video.

(sub-task (a) = 52%)

Ben has been working with Meena Patrick, Retail Director, to set the budgets for the clinics which are due to open in January 2021. Each clinic will have a full-time Clinic Manager who will be supported by part-time employees. They need to know how many part-time employees are needed. Each part-time employee will work 20 hours a week and perform a range of duties. These duties will include arranging client appointments and setting up treatment rooms. I've suggested that we apply activity based budgeting to establish how many part-time employees will be needed. Attached is information about the Northern Clinic. Please can you include in your briefing note to Ben an explanation of:

- How activity based budgeting can be used to work out how many hours a week will be needed to set up rooms and book appointments at the Northern Clinic. Please also explain the difficulties of estimating how many part-time employees will be needed each week in the clinic.

(sub-task (b) = 48%)

Una Volk
Finance Manager
AmaZZZing Beds

The attachment to the email can be found by clicking on the Reference Material button above.

Information about the Northern Clinic

The clinic will offer the following services to individual clients:

- Sleep monitoring & advice
- Wellness counselling
- Acupuncture treatments
- Hypnosis treatments.

The Clinic Manager will be supported by part-time employees who will be expected to carry out a range of duties. Two examples of duties that these part-time employees will be expected to undertake are:

Duty	Detail
Setting up of rooms at the start of each day	The clinic will have eight multi-purpose rooms which will be set up at the start of each day, depending on the service required in that room for that day. Each room is the same size and has the same basic equipment, with specialist equipment such as acupuncture needles and counselling cushions stored in a central area. Room set-up will require making sure that the room has been appropriately cleaned (particularly important for acupuncture which needs a very clean environment). It also involves making sure that the correct equipment is present, as well as enough consumables for the day such as fresh water for clients.
Booking of client appointments	Each service is sold as a course of five appointments for that service. Clients can either book their course of five appointments over the telephone or in person at the clinic. An on-line booking system is not available because the client will need to answer a series of questions about personal information and medical history before the booking can be taken. The service will also be explained to any new clients.

Reference Material Pre-seen

Write the briefing note requested by Una Volk in the box below:

Reference Material Pre-seen

It is now early January 2021. A Clinic Manager for each clinic has now been appointed. The clinics are currently being set up in rented buildings. Una Volk, Finance Manager, sends you the following email:

From: Una Volk, Finance Manager
To: Finance Officer
Subject: Break-even and expenditure on the clinics

Now that the budget for the clinics has been prepared for January to June 2021, the Senior Management Team (SMT) has asked for an analysis of the break-even position and potential profit of the new clinics over that period. I have prepared a multi-product profit-volume chart for that period (see attached). I would like you to prepare a report for the SMT which explains:

- The profit-volume chart and the information it shows us. Please also explain whether the chart indicates that we should concentrate our selling and marketing activities on certain services.

(sub-task (a) = 40%)

To set up the clinics, the following has been spent, or is due to be spent:

Nature of expenditure	E$
Insurance paid in advance on 1 January 2021 for the clinic buildings (which is the date of first occupation)	12,000
Building work on the clinics' interiors and fixtures and fittings	150,000
Furniture, computer and other equipment for the clinics	122,000
Delivery and installation costs for computer and other equipment	4,200
Employee health & safety and computer training	2,100

Please include in the report to the SMT an explanation of:

- Whether each of the above items of expenditure should be initially recorded as a non-current asset, and if so, why that is the case. Please also explain how any expenditure which cannot be initially recorded as a non-current asset will be treated in our financial statements for the year ending 30 June 2021.

(sub-task (b) = 40%)

In addition, we can claim tax depreciation allowances at 25% a year on a reducing balance basis on E$25,000 of computer equipment which was purchased and ready for use on 1 January 2021. Our accounting policy is to depreciate computer equipment at 20% a year on a straight-line basis. Please include in the report to the SMT an explanation of:

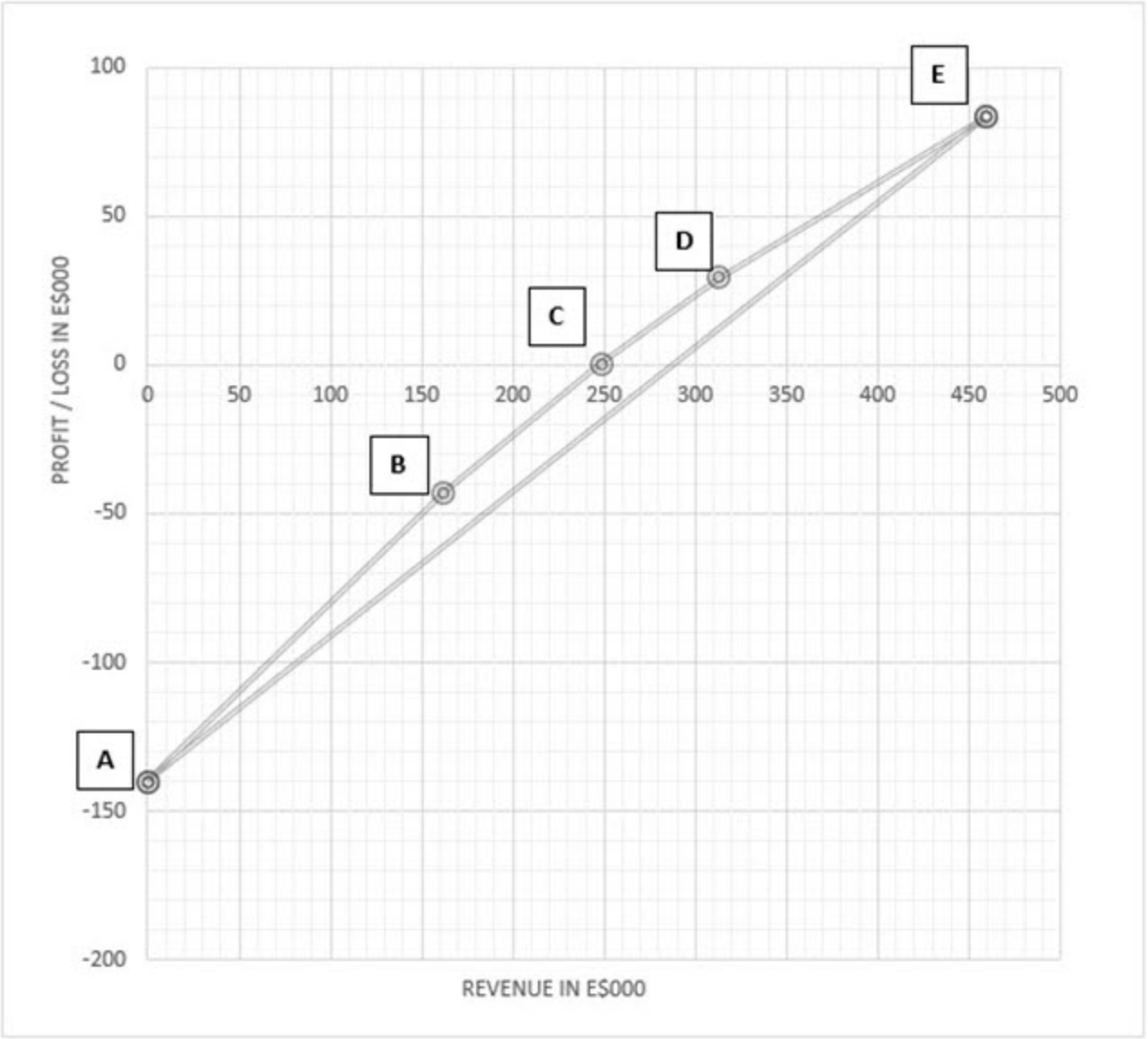
- How our taxable profit will differ to our accounting profit for the year ending 30 June 2021 as a result of purchasing the computer equipment and how this will affect our tax payable in respect of the year.

(sub-task (c) = 20%)

Una Volk
Finance Manager
AmaZZZing Beds

The attachment to the email can be found by clicking on the Reference Material button above.

Multi-product profit-volume chart for the Sleep & Wellness Clinics



Notes:

- The chart is based on the overall budget for both clinics for the period 1 January 2021 to 30 June 2021.
- The budgeted weighted average contribution to sales (c/s) ratio is 0.49.
- The budgeted c/s ratios for each service are as follows:

Service	C/S Ratio
Sleep monitoring & advice	0.60
Wellness counselling	0.37
Acupuncture treatments	0.44
Hypnosis treatments	0.50

Close

Reference Material Pre-seen

Write the report requested by Una Volk in the box below:

Reference Material Pre-seen

It is now April 2021. Una Volk, Finance Manager, sends you the following email:

From: Una Volk, Finance Manager
To: Finance Officer
Subject: Sleep & Wellness Clinics: Sales performance

Our Sleep & Wellness Clinics have now been open for over 3 months. The Northern Clinic is in an affluent area of Eastland where people have a high level of disposable income. The Southern Clinic is in a less affluent area where the level of disposable income is lower. I've been told that the Clinic Manager at the Southern Clinic has struggled to secure the services of a reliable hypnotherapist.

The Senior Management Team (SMT) has asked for a report about the performance of the clinics in the first 3 months. Ben De Luca, Chief Executive Officer, is particularly interested to know about the impact of changes to the mix of services sold during the period. We would usually calculate sales mix variances on an individual units basis, but I think that the weighted average basis might be better. Therefore, I have calculated the variances using both methods (Tables 1 and 2 attached).

For the report, I also need your help with a commentary on the KPIs (Table 3 attached) and the benefits and drawbacks of involving the Clinic Managers in setting future budgets and targets.

Please prepare a report for the SMT which explains:

- What both sets of variances in Table 2 mean and the benefits of each method of calculation. Please also explain the possible reasons why the mix of services sold has changed.

(sub-task (a) = 40%)

- What the KPI measures identified in Table 3 indicate about the comparative performance of the clinics.

(sub-task (b) = 32%)

- The benefits and drawbacks of involving the Clinic Managers in the setting of their individual clinic's budget and KPI targets.

(sub-task (c) = 28%)

Una Volk
Finance Manager
AmaZZZing Beds

The attachment to the email can be found by clicking on the Reference Material button above.

Sales variances: Sleep & Wellness Clinics for the 3 months to 31 March 2021

Table 1: Information about services

Service	Budgeted sales volume of courses (A)	Actual sales volume of courses (B)	Actual sales volume of courses at budgeted mix (C)	Standard contribution per course (D)	Standard selling price per course (E)
Sleep monitoring & advice	270	370	297	E$180	E$300
Wellness counselling	270	220	297	E$100	E$270
Acupuncture treatments	180	250	198	E$80	E$180
Hypnosis treatments	180	150	198	E$120	E$240
Total	**900**	**990**	**990**		

The weighted average standard contribution per course is E$124.

Table 2: Sales mix contribution variances

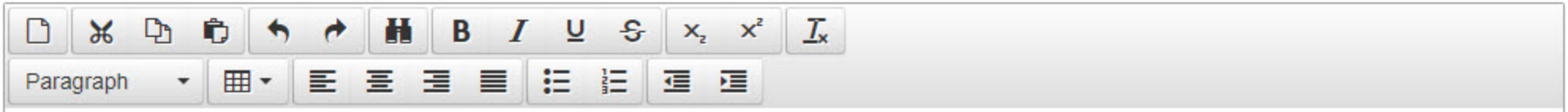
Service	Individual units method E$	Weighted average method E$
Sleep monitoring & advice	13,140 (F)	4,088 (F)
Wellness counselling	7,700 (A)	1,848 (F)
Acupuncture treatments	4,160 (F)	2,288 (A)
Hypnosis treatments	5,760 (A)	192 (F)
Total	**3,840 (F)**	**3,840 (F)**

Table 3: KPIs for the clinics for the 3 months to 31 March 2021

KPI	Northern Clinic	Southern Clinic	Target
% of clients making bookings for more than one type of service	65%	58%	60%
% of enquiries converted to bookings	81%	70%	80%
% of clients recommending a friend	60%	55%	50%
Customer satisfaction rating (out of 5)	4.7	4.4	4.5

Reference Material Pre-seen

Write the report requested by Una Volk in the box below:



Reference Material Pre-seen

Two months later, Una Volk, Finance Manager, says to you:

"At a Senior Management Team (SMT) meeting last month approval was given to hold a one-off Sleep & Wellness Conference. Helene Hugo, Marketing Director, thought it would be a good way of promoting our clinics, and our mattress and bed ranges. We have already started making arrangements for the conference.

The initial demand for places at the conference has been slower than anticipated. Helene has sent me a schedule of what she thinks the loss from holding the conference would be, which I shall give to you shortly. The SMT now needs to decide whether to go ahead with the conference and would like to consider this using a relevant cost basis. I would like you to prepare a briefing paper for the SMT which explains:

- For each of the items on Helene's schedule, which are relevant and which are irrelevant to the decision whether to proceed with the conference.

(sub-task (a) = 44%)

- Two additional factors that should be considered when making the decision.

(sub-task (b) = 16%)

At the meeting we also discussed the level of cash in the business, which has increased due to the success of the clinics and a general increase in trade in our retail stores. Some of this cash will shortly be utilised as two further clinics are due to be opened in a couple of months. There are also plans in about a year's time to expand the production facility significantly. However, the SMT is keen that we make the most of our cash and is considering investing short term. I would like you to include in your briefing paper for the SMT an explanation of:

- The factors that need to be considered when investing the cash of the business in short-term investments.

(sub-task (c) = 40%)

Thank you."

Una hands you the schedule prepared by Helene which can be found by clicking on the Reference Material button above

Anticipated loss for the Sleep & Wellness Conference

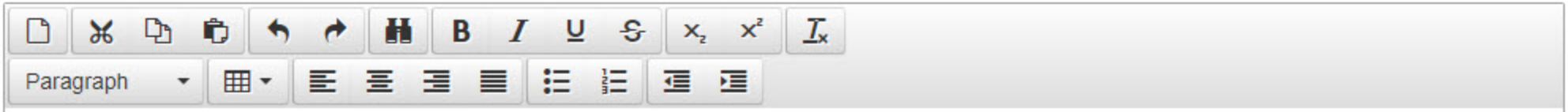
	Notes	E$
Revenue	1	25,000
Hire of venue and catering	2	(22,500)
Fees for six conference speakers	3	(3,000)
Advertising	4	(1,500)
Mattresses and beds	5	(6,500)
Gift bags	6	(2,500)
Printing	7	(1,800)
Internal staff time	8	(1,500)
Loss		**(14,300)**

Notes:

1. Each of 500 attendees will be charged E$50 to attend the conference.
2. A hotel near the Northern Clinic will be the venue. The hotel will charge E$15,000 for the hire of the main room and break-out rooms. The hotel will also charge E$15 per attendee for catering. This total cost of E$22,500 assumes that there will be 500 attendees. We paid a non-refundable deposit of E$5,000 when we booked the hotel.
3. The six speakers at the conference are freelance specialists at our clinics. We would need to arrange cover for the appointments they will miss by being at the conference. The cost of this cover would be E$2,200, although it would have cost us E$2,500 to use the usual specialists.
4. The conference will be advertised on our website and in a popular wellness magazine. The wellness magazine usually charges E$1,500 for such advertising but has offered free advertising in exchange for permission to put up their own stand at the conference.
5. We will display some of our mattresses and beds at the conference. The standard production cost of the display items is E$6,500. These items were produced for display in retail stores and will be transported there after the conference.
6. We will give each attendee a gift bag. Our supplier has said the cost of the bags will be E$5 each, but there is a minimum order quantity of 700 bags.
7. We will need printed materials for the conference. We have already ordered a new printer for this purpose, which cost E$1,500. We have also ordered special paper for the conference costing E$100. The paper has no other use. We will need to buy in ink which will cost E$200.
8. It is anticipated that Helene Hugo, Marketing Director and the two Clinic Managers will need to spend 25 hours each organising and facilitating the conference. The cost of E$1,500 represents an appropriate share of their salaries.

Reference Material Pre-seen

Write the briefing paper requested by Una Volk in the box below:



Thank you for completing the Operational Case Study Exam.

Before you leave, don't forget to collect your printed confirmation of attendance.

Please click the End Exam (E) button before leaving the testing room quietly.

Operational Case Study Exam

Maximum Time Allowed: 3 Hours

Welcome, Candidate Name

If this is not your name, please let your administrator know.

Click **Next** to start the test.

This examination is structured as follows:

Section number	Time for section (minutes)	Number of tasks	Number of sub-task/s	% time to spend on each sub-task
1	45	1	3	(a) 48% (b) 16% (c) 36%
2	45	1	2	(a) 48% (b) 52%
3	45	1	3	(a) 44% (b) 32% (c) 24%
4	45	1	2	(a) 52% (b) 48%

Each section (task) has a number of sub-tasks. An indication of how much of the time available for the section that you should allocate to planning and writing your answer is shown against each sub-task in the text of the question (and summarised in the table above).

This information will be available for you to access during the examination by clicking on the Pre-seen button.

Reference Material Pre-seen

Today is 1 December 2020. A new range of mattresses called EasiMattress has been developed by AmaZZZing Beds. The EasiMattress range will start to be produced on 1 January 2021 and will be sold directly from retail stores and through the company website. This mattress range is made with layers of memory foam and latex and will be vacuum-packed into a box for ease of delivery. You receive the following email from Una Volk, Finance Manager:

From: Una Volk, Finance Manager
To: Finance Officer
Subject: What-if analysis and financial reporting queries

I've been working with the Marketing and Production directors on the budget for the EasiMattress range. We've prepared a budget, based on assumptions about sales volumes, selling prices, variable costs per unit and incremental fixed costs. We would now like to see the impact of changing each of these four variables adversely by 10%. One of your colleagues has prepared a what-if analysis (see attached). I would like you to prepare a briefing note which explains:

- How changing each of the four variables will affect the budget for the EasiMattress range and why the scale of these effects is different depending on the variable changed. Please also explain the benefits and limitations of this what-if analysis.

(sub-task (a) = 48%)

As a result of the new range, we will need to install some new equipment and recondition other equipment. Details about two pieces of equipment are as follows:

- E$6,500 will be spent reconditioning an old binding machine that was due to be scrapped. Reconditioning the machine will increase its capacity and extend its useful life by 3 years. Before we can use it, we are legally required to have it safety tested at a cost of E$100.

- A new industrial sewing machine for stitching covers is to be leased on 1 January 2021. Lease payments will be E$8,000 a year for 3 years, with the first payment on 1 January 2021. After 3 years the machine will be returned to the lessor. We will incur lease arrangement fees of E$300, also payable on 1 January 2021.

Please include in your briefing note an explanation of:

- Whether the expenditure to recondition and test the binding machine can be capitalised.

(sub-task (b) = 16%)

- How the asset that will be leased on 1 January 2021 will be initially recognised and the impact of the lease on profit or loss for the year to 30 June 2021.

(sub-task (c) = 36%)

Una Volk
Finance Manager
AmaZZZing Beds

The attachment to the email can be found by clicking on the Reference Material button above

What-if analysis

Table 1: Initial budget for EasiMattress range for the 6 months to 30 June 2021

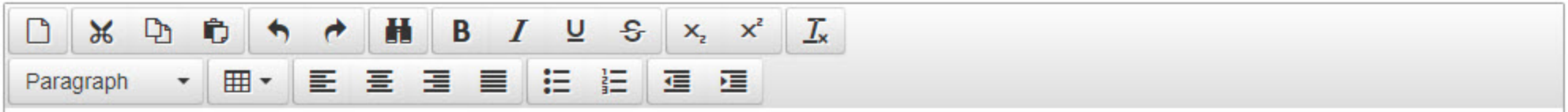
	Budget
	E$000
Revenue	1,750
Variable costs	(910)
Contribution	**840**
Fixed costs	(360)
Profit	**480**

Table 2: % change on budgeted contribution and profit of changing the four variables

	Decrease sales volumes by 10%	Decrease selling price by 10%	Increase variable cost per unit by 10%	Increase fixed costs by 10%
	%	%	%	%
Change to contribution	-10.0	-20.8	-10.8	0.0
Change to profit	-17.5	-36.5	-19.0	-7.5

Reference Material Pre-seen

Write the briefing note requested by Una Volk in the box below:



Reference Material Pre-seen

Two weeks later you receive the following email from Una Volk, Finance Manager:

From: Una Volk, Finance Manager
To: Finance Officer
Subject: Decision on the course of action and activity-based costing (ABC)

Helene Hugo, Marketing Director, has suggested selling prices for the new EasiMattress range. Ben De Luca, Chief Executive Officer, is not sure that these prices will lead to the highest profit and wants to consider budgeted profit for three different options: decrease Helene's suggested selling prices by 5%, spend E$120,000 on additional advertising or increase Helene's suggested selling prices by 5%.

Each of these options is expected to change the volume sold by either 5%, 10% or 15%. A colleague has prepared payoff tables and calculated the expected value of profit, standard deviations and coefficients of variation for each option (see Schedule 1 attached). I would like you to prepare a briefing note which explains:

- The information in Schedule 1. Please also explain which option we would take using a risk-seeking, risk-neutral and risk-averse approach to the decision, giving one limitation associated with each approach.

(sub-task (a) = 48%)

There are differences in how the EasiMattress range is produced compared to the rest of our mattresses. For example, EasiMattress covers contain four layers of fabric and padding compared to two layers for our other mattresses, meaning that the cutting & quilting process is more involved. Stephan Tang, Finance Director, has suggested that we consider using ABC. Please also include in the briefing note an explanation of:

- How an ABC approach would change how we absorb fixed production overheads and the impact that this would have on product costs. Please illustrate your explanation with reference to the cutting & quilting process for covers production (attached in Schedule 2).

(sub-task (b) = 52%)

Una Volk
Finance Manager
AmaZZZing Beds

The attachments to the email can be found by clicking on the Reference Material button above.

Schedule 1 | Schedule 2

Schedule 1:

Table 1: Decrease selling prices by 5%

Change in sales volume	Probability	Budgeted profit E$	Expected value E$	Standard deviation E$	Coefficient of variation
+ 5%	0.1	430,125	43,013		
+10%	0.3	467,750	140,325		
+15%	0.6	445,375	267,225		
			450,563	**12,105**	**0.03**

Table 2: Undertake an E$120,000 advertising campaign

Change in sales volume	Probability	Budgeted profit E$	Expected value E$	Standard deviation E$	Coefficient of variation
+ 5%	0.3	402,000	120,600		
+10%	0.4	444,000	177,600		
+15%	0.3	426,000	127,800		
			426,000	**17,390**	**0.04**

Table 3: Increase selling prices by 5%

Change in sales volume	Probability	Budgeted profit E$	Expected value E$	Standard deviation E$	Coefficient of variation
- 5%	0.5	521,125	260,563		
-10%	0.3	474,750	142,425		
-15%	0.2	428,375	85,675		
			488,663	**36,220**	**0.07**

Notes:

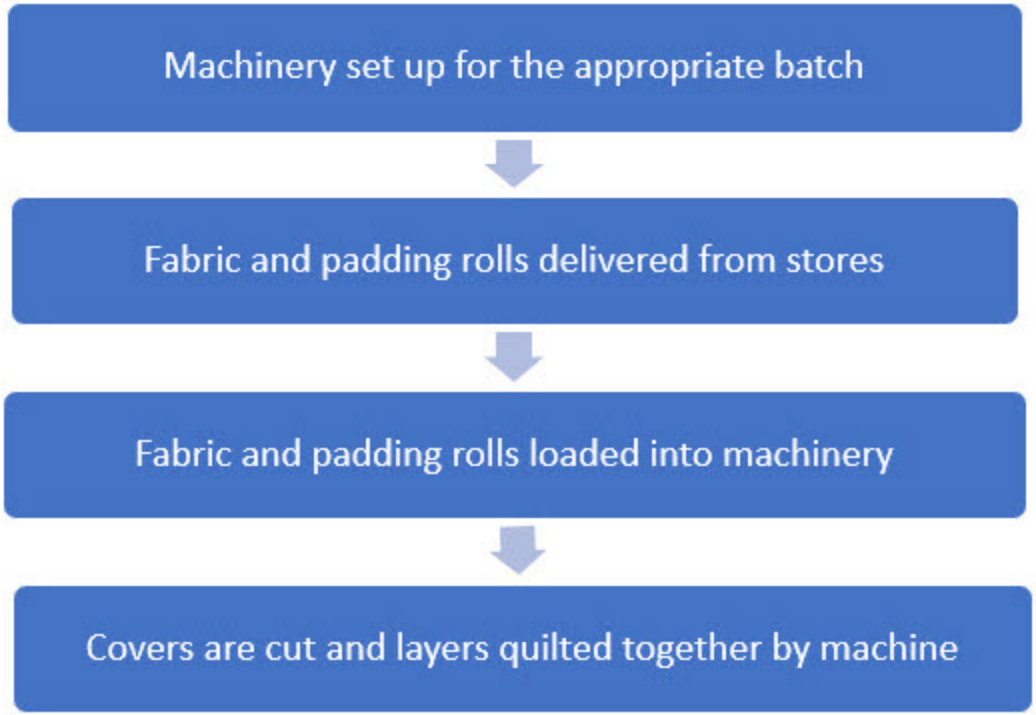
- The budgeted profit is for the EasiMattress range for the 6 months to June 2021.
- The probabilities have been estimated by Stephan Tang.
- If sales volumes increase by more than 10%, there will be a stepped increase in fixed costs of E$60,000.

Close

Schedule 1 | Schedule 2

Schedule 2:

The process of cutting & quilting mattress covers



Other information relating to cutting & quilting

	EasiMattress	All other mattresses
Batch size for cutting and quilting	100 covers	100 covers
Number of deliveries from raw material stores	8 per batch	4 per batch
Machine hours per batch	12 hours	5 hours
Direct labour hours per batch	3 hours	2 hours
Number of quality checks	2 per batch	1 per batch

Reference Material Pre-seen

Write the briefing note requested by Una Volk in the box below:

Paragraph

Reference Material Pre-seen

It is now March 2021. The EasiMattress range went into production on 1 January 2021 and so far, sales have been better than anticipated. Una Volk, Finance Manager, telephones you and says:

"I am in the process of compiling the management performance report for the production facility for February and I would like your assistance with this.

Firstly, I need commentary on the direct labour variances for the new EasiMattress range for the report. I'll send you a schedule with the variances and some associated notes after this call.

Secondly, Ben De Luca, Chief Executive Officer, would like to start including key performance indicators (KPIs) for the production function into the monthly management performance report. He has asked that in this month's report we include suggestions of what these could be. I would like you to suggest KPIs that would be appropriate to monitor the performance of our production supervisors who are responsible for quality and the efficiency of our direct employees.

Thirdly, Ben asked me yesterday about our feedback control system as he had read in a management article that this is an important part of budgetary control. He has requested that we include a section in this month's report which explains this.

Please prepare content for the February management performance report which:

- Explains for both covers production and assembly for the EasiMattress range what the direct labour variances mean and the reasons for their occurrence.

(sub-task (a) = 44%)

- Identifies and justifies three KPIs that could be introduced to monitor the performance of our production supervisors.

(sub-task (b) = 32%)

- Explains what is meant by a feedback control system and how it would apply in our business, using the direct labour variances to illustrate your explanation.

(sub-task (c) = 24%)

Thank you."

After the call, Una sends you the schedule she referred to which can be found by clicking on the Reference Material button above

Direct labour variances for the month of February 2021 for the EasiMattress range

	Covers production E$	Assembly E$
Rate	1,940 (A)	10,480 (F)
Idle time	2,880 (A)	1,600 (A)
Efficiency	1,140 (A)	12,160 (F)

Notes:

- The standard direct labour rates are E$12.00 per hour for covers production and E$16.00 per hour for assembly. These are weighted average rates based on the budgeted mix of trainee, semi-skilled and skilled employees. Trainees are paid the lowest rate per hour and skilled employees the highest.
- The average standard direct labour hours required per mattress is 0.35 hours for covers production and 3.20 hours for assembly.
- Budgeted production volume was 4,000 mattresses. 4,300 mattresses were actually produced. The proportion of each mattress size actually produced was in line with the budgeted mix.
- During February the following happened:
  - In the covers production area, some sewing machines broke down and needed to be repaired. This was attributed to a lack of routine maintenance due to the machinery maintenance team being behind schedule. In addition, the cutting & quilting machinery kept jamming.
  - An illness affected a number of employees in covers production and temporary workers were employed to cover the absence. Temporary workers are paid E$14.00 an hour. This illness did not affect the assembly production area.
  - A number of skilled assembly employees unexpectedly left the company during the month and were replaced by new trainees.

Reference Material Pre-seen

Write the content for the report requested by Una Volk in the box below:

Paragraph

Reference Material Pre-seen

It is now several months later. The directors decided to manufacture a Deluxe version of the EasiMattress, and to start selling the entire EasiMattress range to corporate customers. You receive the following email from Stephan Tang, Finance Director:

From: Stephan Tang, Finance Director
To: Finance Officer
Subject: Linear programming and Economic Order Quantity

We have received the following two contracts from corporate customers:

Silver hotel chain: To supply up to 500 Deluxe and 300 Regular double EasiMattresses
Gold hotel chain: To supply up to 200 Deluxe and 200 Regular double EasiMattresses

Both corporate customers have said that they are willing to accept partial orders, but delivery must be by the end of the month. They have also said that if they are happy with the quality of our mattresses, they will issue further contracts in the future.

Gavin Thorpe, Production Director, has identified that there are only 5,400 metre^2 of basic padding and 180 cutting & quilting machine hours available in the month to be able to satisfy these two orders. One of your colleagues has prepared a linear programming graph (attached) and I would like you to prepare a briefing note which explains:

- How to use the graph to determine the feasible region and the optimal production plan and what that optimal production plan is. Please also explain the factors we should consider before proceeding with this production plan.

(sub-task (a) = 52%)

The reason that there is a potential shortage of this type of padding is because the supplier recently became unreliable with their delivery lead times, which has also been happening with a few other suppliers lately. On a positive note, we do have plenty of covering fabric in inventory because we always take advantage of the bulk purchase discounts available. Gavin Thorpe, Production Director, has suggested that we consider using the Economic Order Quantity (EOQ) model to determine our raw material ordering policy. Therefore, please include in your briefing note an explanation of:

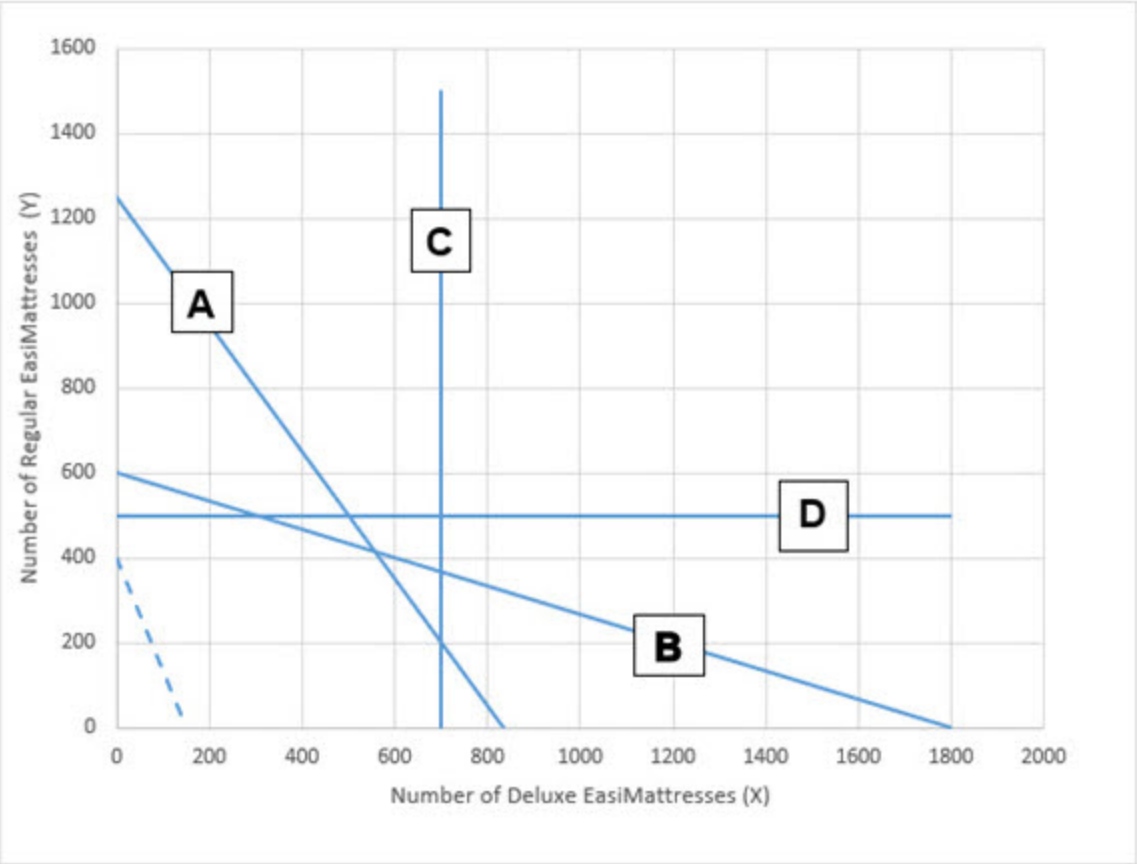
- The key principle of the EOQ model and the information required to calculate EOQs for our fabric and padding raw materials. Please also explain the appropriateness of the EOQ model assumptions for our business and how the model could be adapted to deal with relaxing these assumptions.

(sub-task (b) = 48%)

Stephan Tang
Finance Director
AmaZZZing Beds

The attachment to the email can be found by clicking on the Reference Material button above

Linear programming graph



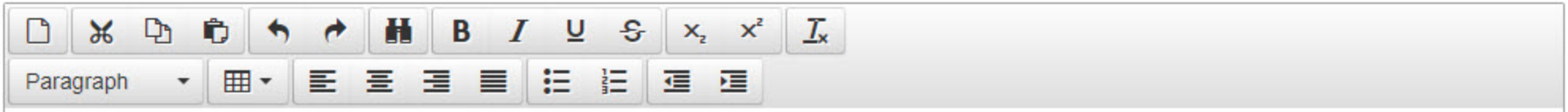
Key to the graph:

- Lines A and B represent the constraints for cutting & quilting machine time and basic padding material respectively.
- Lines C and D are demand constraints.
- The dotted line is the iso-contribution line.

--

Reference Material Pre-seen

Write the briefing note requested by Stephan Tang in the box below:



Thank you for completing the Operational Case Study Exam.

Before you leave, don't forget to collect your printed confirmation of attendance.

Please click the End Exam (E) button before leaving the testing room quietly.

Operational Case Study Exam

Maximum Time Allowed: 3 Hours

Welcome, Candidate Name

If this is not your name, please let your administrator know.

Click **Next** to start the test.

This examination is structured as follows:

Section number	Time for section (minutes)	Number of tasks	Number of sub-task/s	% time to spend on each sub-task
1	45	1	4	(a) 28% (b) 20% (c) 20% (d) 32%
2	45	1	3	(a) 32% (b) 20% (c) 48%
3	45	1	2	(a) 52% (b) 48%
4	45	1	3	(a) 40% (b) 24% (c) 36%

Each section (task) has a number of sub-tasks. An indication of how much of the time available for the section that you should allocate to planning and writing your answer is shown against each sub-task in the text of the question (and summarised in the table above).

This information will be available for you to access during the examination by clicking on the Pre-seen button.

Reference Materials Pre-seen

Today is 1 December 2020. The company is keen to adopt new sustainability initiatives and has decided to produce a range of eco mattresses made mainly from recycled materials. The eco mattress range will be specifically aimed at environmentally conscious consumers. Production and sales of the eco mattresses will commence in January 2021.

You receive the following email from Una Volk, Finance Manager.

From: Una Volk, Finance Manager
To: Finance Officer
Subject: Sales volume forecasting and supplier evaluation

We need to determine the sales budget for the eco mattresses and, as this is a new type of product, Meena Patrick, Retail Director, has requested our help.

I have attached a schedule including a graph of the sales volume for our hybrid mattresses which we launched in 2015. The graph shows the actual sales volume from the first quarter (January to March) of 2015 to the third quarter (July to September) of 2020.

I would like you to prepare briefing notes, which I can discuss at the next Senior Management Team (SMT) meeting. It would be helpful if the briefing notes explain:

- How we would determine the trend and seasonal variations for sales volumes of hybrid mattresses using linear regression, based on the data from the graph. Please also explain how these would then be used to estimate the quarterly sales volume for the eco mattresses.

(sub-task (a) = 28%)

- Any limitations of using this approach to forecast the sales volume for the eco mattresses.

(sub-task (b) = 20%)

- The correlation co-efficient and the co-efficient of determination and the usefulness of calculating these measures in this case.

(sub-task (c) = 20%)

We also need to find a new supplier for the recycled materials. Mo Singh, Purchasing Director, has suggested a supplier, Eco Material, that she has used in the past. I have produced some figures to help us decide whether to use this supplier. I have included these figures in the attached schedule. The figures are calculated using the supplier's financial statements for the last few years and are compared to the industry averages.

Please also include in your briefing notes:

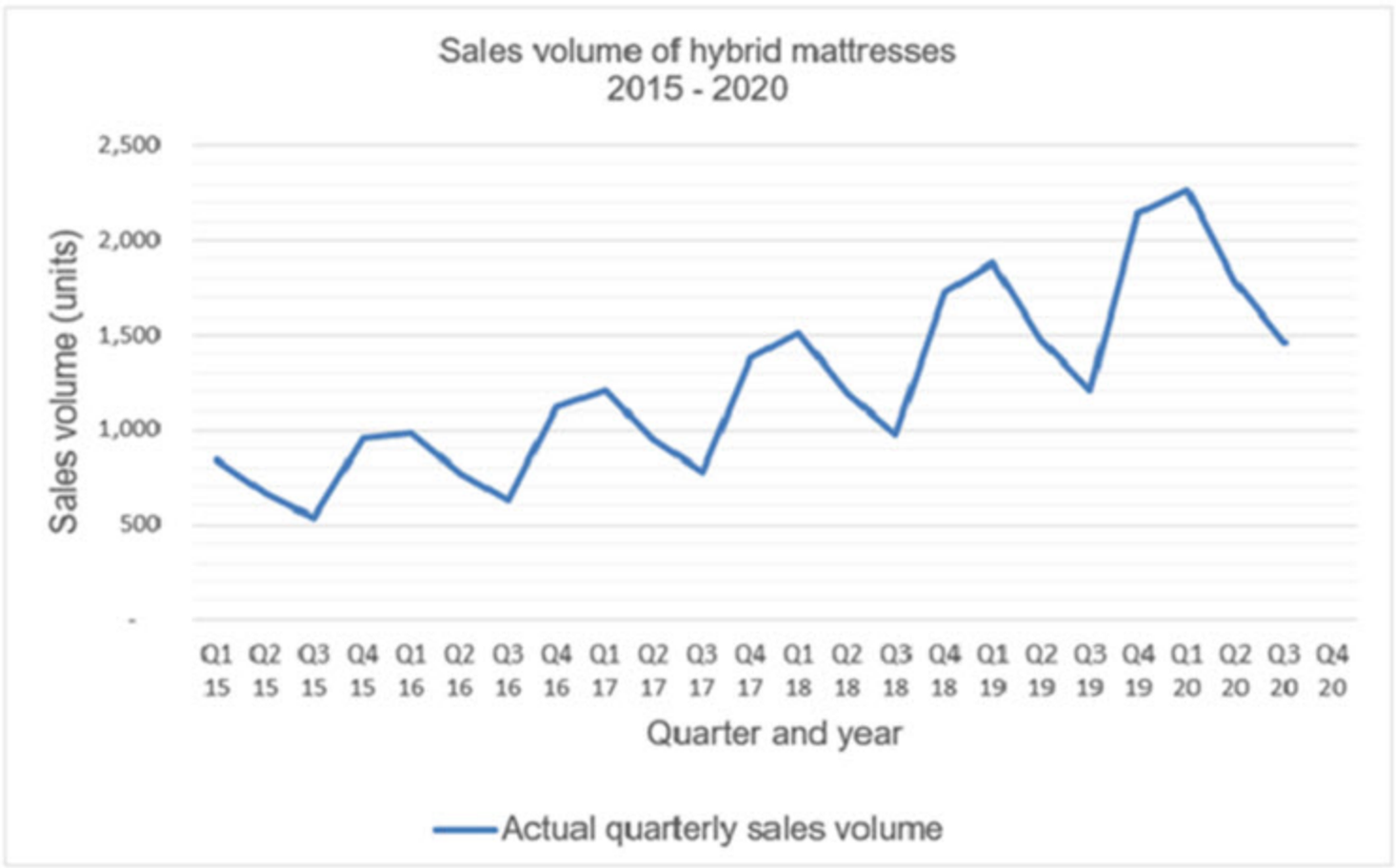
- An explanation of Eco Material's working capital position based on the information in the attached schedule. Please also explain the risks that its working capital position may present if we were to trade with Eco Material.

(sub-task (d) = 32%)

Una Volk
Finance Manager
AmaZZZing Beds

The attachment to this email can be found by clicking on the Reference Materials button above.

Time series graph of sales volumes for hybrid mattresses



Financial information for Eco Material

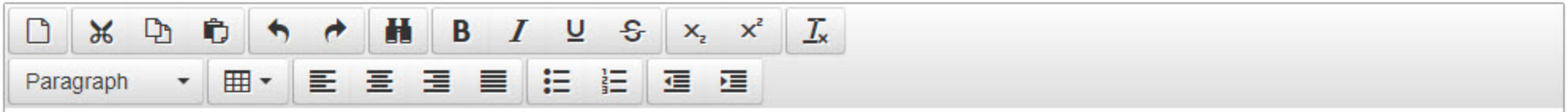
	2020 Industry average	Eco Material		
		2020	2019	2018
Inventory days	33	21	31	35
Trade receivable days	45	65	52	46
Trade payable days	(54)	(82)	(63)	(52)
Operating cycle (days)	24	4	20	29

Other information:

- Eco Material offers standard credit terms of 30 days to all of its credit customers.
- Eco Material receives standard credit terms of 30 days from all of its suppliers.
- The company was formed 10 years ago and whilst it has grown rapidly over the last few years, its annual revenue is still relatively low compared to the industry average.

Reference Materials Pre-seen

Write the briefing notes for Una Volk, Finance Manager, in the box below:



Reference Materials Pre-seen

It is now a few days later. The company has decided to launch a new service which will allow customers who purchase a new mattress to have their old mattress taken away for recycling on payment of a recycling fee. The mattresses will then be disassembled and the component materials compacted before being sold to a recycling company. The service will be launched in January 2021.

You receive the following email from Una Volk, Finance Manager.

From: Una Volk, Finance Manager
To: Finance Officer
Subject: Cost driver analysis and break-even analysis

The Senior Management Team (SMT) is planning to charge a set price of E$25 for the recycling service no matter what size and type of mattress is being recycled. It has asked for details of the break-even position for the service based on this set price. I estimate that we will recycle 22,000 mattresses of different types and sizes in the first year. The estimates for total fixed costs and the average variable cost are based on this sales volume and mix. I have prepared a profit/volume chart (Chart 1 attached) based on these estimated figures.

I would like you to provide me with a report, which I can present at the next SMT meeting, explaining:

- The profit/volume chart and the impact that changes to my estimates mentioned above would have on the break-even point and the margin of safety.

(sub-task (a) = 32%)

- Why the data used to construct the profit/volume chart will limit its usefulness.

(sub-task (b) = 20%)

Stephan Tang, Finance Director, is keen to get a clearer idea of the costs of the service for different sizes and types of mattresses. The mattresses are likely to be a variety of types such as sprung, memory foam or hybrid. To help with this, I have provided details of some of the recycling processes and the main costs for each process (Table 1 attached).

Please also include in your report an explanation of:

- What drives the costs identified in each of the processes shown in Table 1 and the reasons why the costs of the recycling service would differ depending on the size and type of mattress. Please also discuss the usefulness of determining an accurate cost for recycling each type of mattress.

(sub-task (c) = 48%)

Una Volk
Finance Manager
AmaZZZing Beds

The attachments to this email can be found by clicking on the Reference Materials button above.

Chart 1 | Table 1

Exhibit 1

Chart 1: Profit volume chart for mattress recycling service

Fixed costs consist of the following:

- A share of the running costs of the delivery vehicles used when collecting the mattresses.
- Cost of tools to disassemble the mattresses.
- The depreciation of the machinery used to compress the bales of materials.
- Running costs of the vehicles used when delivering the compacted bales to the recycling facility.

Close

Exhibit 2

Table 1: Mattress recycling service processes

Process	Description	Costs
Disassemble mattress	The mattresses are disassembled into their component parts at the Eastland production facility.	Labour costs to disassemble component parts Tool costs
Compacting of materials	The different materials are compacted into bales to save space during transportation to the recycling facilities.	Depreciation of compacting machinery Labour costs
Delivery to recycling facilities	The bales of different materials are delivered to individual recycling facilities.	Running costs for delivery vehicles Labour cost of delivery staff

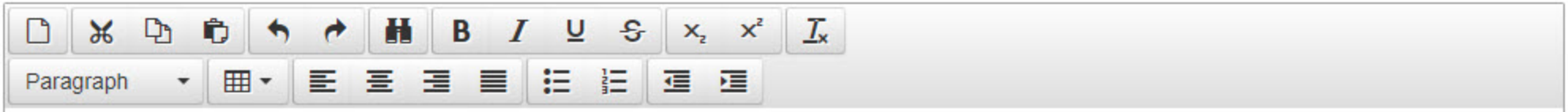
Reference Materials Pre-seen

Write the report for Una Volk, Finance Manager, in the box below:

Paragraph

Reference Materials Pre-seen

Write the report for Una Volk, Finance Manager, in the box below:



Reference Materials Pre-seen

A few weeks later, Stephan Tang, Finance Director, says to you:

"The eco mattress range is selling reasonably well and there has been a good uptake of the new recycling service. We have therefore decided to lease a number of new delivery vehicles to meet this increasing demand. As this is the first time we have leased capital equipment, the Senior Management Team (SMT) has requested details of how the lease will be treated in our financial statements. I have given details of the lease in Table 1 of a schedule which I will send to you shortly.

Please prepare a report that I can present at the next SMT meeting giving an explanation of:

- How the lease will initially be recorded in our accounting records and how it will be treated in our financial statements for the year ended 30 June 2021 and in subsequent years.

(sub-task (a) = 52%)

The SMT has also decided to fund some additional marketing for the eco mattress range. Helene Hugo, Marketing Director, has suggested three potential marketing packages which cost the same but use a different mix of media. A market research company has estimated the expected value of the additional contribution, the standard deviation and the co-efficient of variation for each package. I have summarised the details in Table 2 of the schedule. Helene would like to go ahead with Package C, since it has the highest expected value.

Please also include in your report:

- An explanation of the figures shown in Table 2 of the schedule and whether you think choosing a package based on expected value would be the best approach. Also, please explain a risk averse and a risk seeking approach to decision making and the package that would be chosen for each of these approaches."

(sub-task (b) = 48%)

You tell Stephan that you will send him the report as soon as possible.

Stephan's schedule can be found by clicking on the Reference Materials button above.

Table 1 – Details of lease arrangement

Lease payments per year in advance	E$37,105
Present value of lease payments at 1 March 2021*	E$122,895
Other costs:	
Lease arrangement fee	E$4,000
Lease commencement date	1 March 2021
First lease payment	1 March 2021
Lease period	5 years
Useful life of asset	7 years
Owner at end of lease period	Lessor

* The present value excludes the lease payment made in advance on 1 March 2021

Table 2 – Proposed marketing packages

	Package A	Package B	Package C
Expected value of additional contribution	E$206,000	E$214,000	E$250,000
Standard deviation	E$28,355	E$65,108	E$71,764
Co-efficient of variation	13.76%	30.42%	28.71%

Reference Materials Pre-seen

Write the report for Stephan Tang, Finance Director, in the box below:

Paragraph

Reference Materials Pre-seen

In early April 2021, you receive the following email from Una Volk, Finance Manager.

From: Una Volk, Finance Manager
To: Finance Officer
Subject: Variance analysis and KPIs

I have just been looking at the sales variance report for the eco mattresses for the first quarter (attached). Overall, the sales performance is below budget and there are some areas which require further investigation. I have discussed this with Meena Patrick, the Retail Director and she has given me the following information:

a. A major manufacturer of eco mattresses went into liquidation during the quarter and the inventory was sold off by the liquidator at very low prices. The majority of the inventory sold was single and double mattresses made from recycled material. In response, we lowered our price on single and double mattresses.
b. In an attempt to boost sales, we decided to run a special promotion in February offering a 20% discount off the retail price on all our mattresses. This coincided with a marketing campaign which we ran throughout February.
c. Gordon's Beds, a leading retailer of mattresses with stores throughout the country, ran a major marketing promotion during the period. It offered a 15% price discount on its full range of mattresses and a free recycling service for replaced mattresses.

Please prepare a draft report that I can present at the next Senior Management Team meeting including an explanation of:

- How each of the variances have been calculated and the reasons why they may have arisen.

(sub-task (a) = 40%)

- The potential benefits, in this case, of separating the variances into planning and operational variances.

(sub-task (b) = 24%)

- Please also suggest three KPIs, which could be used to measure our sustainability performance, explaining how each would be calculated and why each would be appropriate.

(sub-task (c) = 36%)

Una Volk
Finance Manager
AmaZZZing Beds

The attachment to this email can be found by clicking on the Reference Materials button above.

Sales variance analysis for the quarter January–March 2021

Size	Budgeted sales (units)	Actual sales (units)
Single	200	160
Double	320	250
King	380	400
Total	**900**	**810**

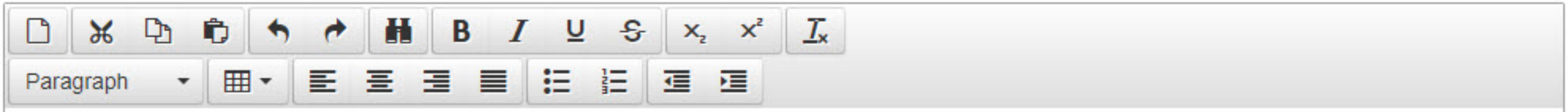
	Budgeted selling price per unit	Budgeted profit per unit
	E$	**E$**
Single	350	180
Double	450	230
King	550	290

	Sales price variance	Sales mix profit variance	Sales quantity profit variance
	E$	**E$**	**E$**
Single	6,400 A	3,600 A	3,600 A
Double	12,500 A	8,740 A	7,360 A
King	16,000 A	16,820 F	11,020 A
Total	**34,900 A**	**4,480 F**	**21,980 A**

Note: The sales mix and quantity variances have been calculated using the individual units method.

Reference Materials Pre-seen

Write the draft report for Una Volk, Finance Manager, in the box below:



Thank you for completing the Operational Case Study Exam.

Before you leave, don't forget to collect your printed confirmation of attendance.

Please click the End Exam (E) button before leaving the testing room quietly.

Operational Case Study Exam

Maximum Time Allowed: 3 Hours

Welcome, Candidate Name

If this is not your name, please let your administrator know.

Click **Next** to start the test.

This examination is structured as follows:

Section number	Time for section (minutes)	Number of tasks	Number of sub-task/s	% time to spend on each sub-task
1	45	1	2	(a) 52% (b) 48%
2	45	1	2	(a) 52% (b) 48%
3	45	1	2	(a) 48% (b) 52%
4	45	1	3	(a) 24% (b) 48% (c) 28%

Each section (task) has a number of sub-tasks. An indication of how much of the time available for the section that you should allocate to planning and writing your answer is shown against each sub-task in the text of the question (and summarised in the table above).

This information will be available for you to access during the examination by clicking on the Pre-seen button.

Reference Materials Pre-seen

Today is 1 December 2020. It has just been announced that the company is to launch a new product, a smart bed, that uses sensors and other technologies to gather data about sleep quality. It uses this information to self-adjust the bed and delivers the information to a mobile phone app which offers tips and advice to improve the user's sleep. Production and sales of the smart bed are expected to commence in January 2021. The development of the mobile phone app has recently been completed using freelance specialist software developers. AmaZZZing Bed's own IT staff will in future be responsible for ongoing maintenance of the app. You receive the following email from Una Volk, Finance Manager.

From: Una Volk, Finance Manager
To: Finance Officer
Subject: Costing of the digital app and capacity constraints

You will have heard about our plan to launch a smart bed and app. We need to establish the unit cost of the app. I have obtained details of the type of costs involved from James Attwood, IT Manager (Table 1 attached).

I would like you to send me a report which:

- Explains how each of the cost items listed in the schedule would be incorporated into the unit cost of the app and the difficulties involved in doing this.

(sub-task (a) = 52%)

Also, Gavin Thorpe, Production Director, has just informed me that the production of the smart bed is going to result in capacity constraints in our bed manufacturing facility. I have produced a linear programming graph depicting the position for January–June 2021 (Graph 1 attached).

Please include the following in your report:

- An explanation of the graph and how the optimum production plan can be determined using the graph. Please also suggest how we might overcome any binding capacity constraints and how to determine the maximum price we should pay for additional resources.

(sub-task (b) = 48%)

Una Volk
Finance Manager
AmaZZZing Beds

The attachment to this email can be found by clicking on the Reference Materials button above.

Exhibit 1

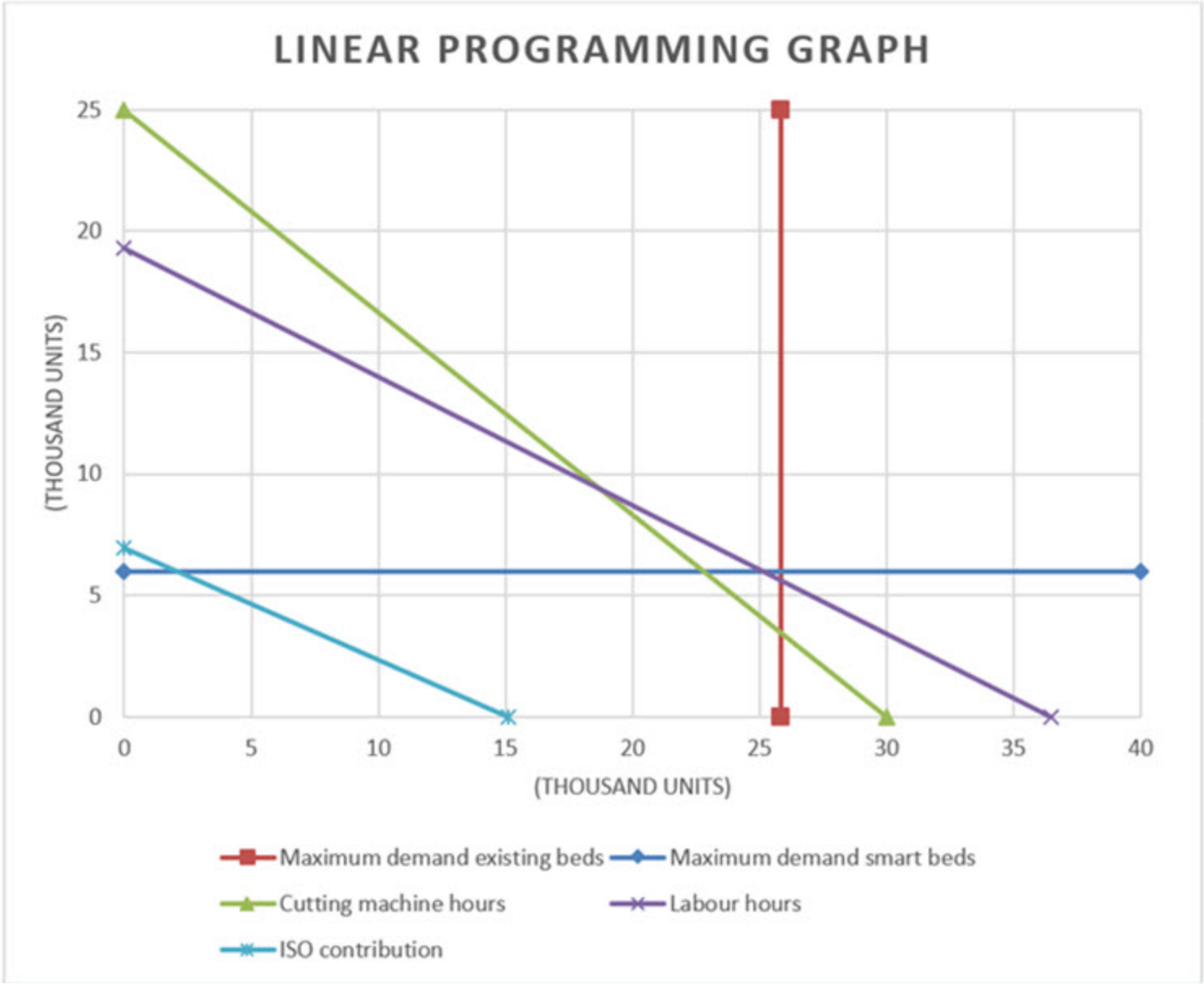
Table 1: Cost items for the smart bed app

	Cost item
1	**Development costs**: This is the cost of the freelance software developers who have designed and developed the app.
2	**Functional services costs**: These will be the costs of subscribing to a service that will provide a delivery mechanism. The charges from the service provider will include both a fixed and a variable element.
3	**Infrastructure services costs:** Infrastructure services for the app will be provided in-house and shared with our other IT services. The costs of the service will be mainly fixed.
4	**Administrative services costs:** The administrative costs relate to the administration dashboard to enable us to effectively administer the app including managing the content of the app and updating the app. These services will be provided in-house.
5	**Technical support services costs:** Technical support costs relate to updates for iOS and Android; updates to application programming interfaces (APIs) with, for example, social networking sites and bug fixing. IT specific maintenance costs for infrastructure will also be required. These services will also be provided in-house.
6	**Share of general administration, selling and distribution overhead costs**: These are currently shared based on a percentage of sales revenue.

Table 1 | Graph 1

Exhibit 2

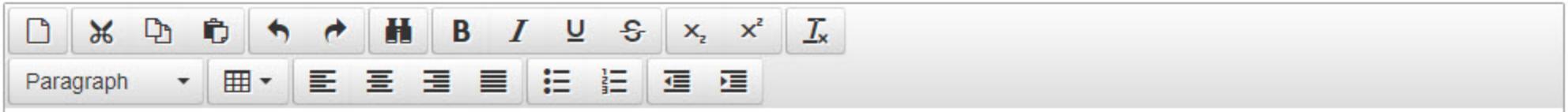
Graph 1: Linear programming graph for January to June 2021



Close

Reference Materials Pre-seen

Write the report for Una Volk, Finance Manager, in the box below:



Reference Materials Pre-seen

A week later, Stephan Tang, Finance Director, says to you:

"We have been approached by the head of a government department who is keen to purchase a large number of our single sized smart beds for use in government owned hospitals and nursing homes. The contract would be for a period of 1 year initially. Production of the beds for the contract will not begin until July 2021 by which time we will have overcome the current capacity constraints. The issue is that the price offered is below the full cost of the contract.

I have put together a schedule showing the full cost of the contract and the price offered. In Una's absence on holiday, I would like you to prepare a briefing paper, which I can present to the Senior Management Team later this week, which includes:

- An explanation, with clear justification, why each of the costs in the attached schedule and accompanying notes would be relevant or irrelevant to the decision whether to accept the contract. Also, please explain two other factors that we should consider before making a final decision whether to accept the contract.

(sub-task (a) = 52%)

If we do decide to accept the government contract, the orders for the beds will be placed by individual hospitals and nursing homes. We would invoice them directly and they would be responsible for payment of the invoice. At the moment, we don't have our own sales ledger or credit control functions as all our sales are direct to consumers who pay prior to delivery. I have been in discussion with a factoring company who has offered to factor our accounts receivable on a non-recourse basis. The factoring company would pay 80% of the receivables in advance and would charge interest at 10% per annum. They would also charge us an administration fee of 2.5% of the total sales value of the invoices.

Please also include in the briefing paper:

- An explanation of how to calculate the net cost of factoring based on the details I have given to you and the potential advantages and disadvantages of factoring compared to setting up our own sales ledger and credit control functions."

(sub-task (b) = 48%)

You tell Stephan that you will send him the briefing paper as soon as possible.

Stephan's schedule can be found by clicking on the Reference Materials button above.

Costs of the smart beds for the government contract for the first year

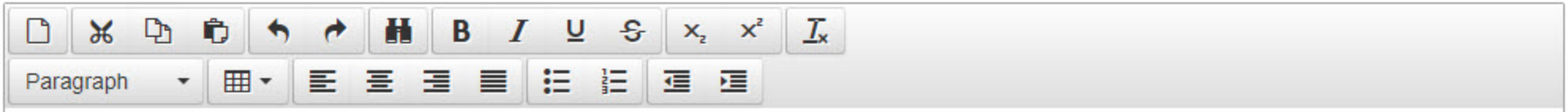
	Notes	E$
Direct material	1	428,000
Direct labour	2	96,000
Fixed production overheads	3	88,256
Variable production overheads	3	19,456
Cost of the app	4	20,000
Share of non-production overhead costs	5	312,000
Total cost		**963,712**
Price offered under the contract		**800,000**
Net loss		**(163,712)**

Notes:

1. We will need to buy additional components and raw materials specifically for the contract costing E$228,000. Other raw materials are required which are in continual use in the business. These are held in inventory at a cost of E$200,000. The cost of replacing this inventory would be E$215,000.
2. The cost for direct labour represents 6,400 hours at the normal hourly rate of E$15 per hour. Direct labour is paid for a fixed number of hours at the normal hourly rate. There are insufficient direct labour hours available to complete the contract during normal working hours. It has been decided therefore that overtime will be worked specifically for this contract. We will need to schedule 30% of the required production as overtime, for which a premium of 50% above the normal hourly rate will be paid. The remaining 70% of the total required hours could be scheduled within the fixed paid hours.
3. Production overheads have been charged to the contract using our current facility-wide overhead absorption rates based on labour hours.
4. The cost of the app represents the estimated unit cost multiplied by the number of units to be sold under the government contract. The unit cost of the app consists of the amortisation of the development cost plus the ongoing maintenance costs.
5. The share of non-production overhead costs is based on a percentage of estimated sales revenue. Non-production overheads include both fixed and variable costs.

Reference Materials Pre-seen

Write the briefing paper for Stephan Tang, Finance Director, in the box below:



Reference Materials Pre-seen

It is now March 2021. You receive the following email from Una Volk, Finance Manager.

From: Una Volk, Finance Manager
To: Finance Officer
Subject: Product recall and what-if analysis

Gavin Thorpe, Production Director, has advised me that there has been a failure with the mechanism which allows the base of the smart beds to be adjusted. This has resulted in a recall of some of the beds. Under the terms of the warranty, customers have been given a new replacement bed. The returned beds can be repaired but there will be some costs involved to dismantle the products and carry out the repairs. There will also be a small amount of wastage from each unit. We will be able to sell the reconditioned inventory, at a discount from our normal selling price, through either a brand clearance outlet or through our stores. I have given details in Table 1 (attached) of the two options for resale.

Please prepare a report including:

- An explanation of how the costs associated with the dismantling and repair of the reconditioned inventory would be treated in the financial records. Please also explain the treatment of this inventory under each of the two resale options and the impact of any write-down on profits and cash flows in the current financial year.

(sub-task (a) = 48%)

The senior management team is concerned that the quality failure is going to affect future sales volumes. There is also a need to make changes to some of the materials and the manufacturing process for future production of the beds. These changes will have an impact on the variable costs of production, although the extent of the impact is not yet clear. I have prepared a spreadsheet giving a 'what-if' analysis for the budget for the final quarter of the year (Table 2 attached). Please include in your report:

- An explanation of the figures in the what-if analysis. Please also explain the further analysis we could carry out, and its potential benefits, if we were able to determine probabilities for the variable costs and the sales volumes at each selling price.

(sub-task (b) = 52%)

Una Volk
Finance Manager
AmaZZZing Beds

The attachment to this email can be found by clicking on the Reference Materials button above.

Table 1 | Table 2

Table 1: Inventory resale options

Options	Notes
Clearance outlet	We should be able to negotiate a selling price just above our cost price, but we would incur the costs of delivering the inventory to the outlet's distribution hub. There would also potentially be some impact of this lower selling price on future sales of this model.
Price promotion in store	We may need to offer a significant discount on our regular prices, but prices achieved would be higher than the amount the clearance outlet would pay. There may however be significant damage to sales as customers prepared to pay the higher price for a new bed might opt instead for the reduced-price reconditioned bed.

Table 1 | Table 2

Table 2: What-if analysis showing profit at different sales volumes April to June 2021

			Sales volume			
			3,200 units	3,000 units	2,800 units	2,600 units
Selling price	Variable costs per bed	Fixed costs	Profit	Profit	Profit	Profit
E$	E$	E$	E$	E$	E$	E$
2,300	1,094	3,297,000	562,200	321,000	79,800	(161,400)
	1,144		402,200	171,000	(60,200)	(291,400)
	1,194		242,200	21,000	(200,200)	(421,400)
2,200	1,094	3,297,000	242,200	21,000	(200,200)	(421,400)
	1,144		82,200	(129,000)	(340,200)	(551,400)
	1,194		(77,800)	(279,000)	(480,200)	(681,400)
2,100	1,094	3,297,000	(77,800)	(279,000)	(480,200)	(681,400)
	1,144		(237,800)	(429,000)	(620,200)	(811,400)
	1,194		(397,800)	(579,000)	(760,200)	(941,400)

Notes:

1. The current budget for the quarter is based on a selling price of E$2,300, variable costs per unit of E$1,094 and sales volume of 3,000 units.
2. Fixed costs are based on the current budgeted sales volume of 3,000 units.

Close

Reference Materials Pre-seen

Write the report for Una Volk, Finance Manager, in the box below:

Reference Materials Pre-seen

A few days later, you receive the following email from Una Volk, Finance Manager.

From: Una Volk, Finance Manager
To: Finance Officer
Subject: Performance measurement

At a recent Senior Management Team (SMT) meeting the quality issues that have occurred with the smart bed were discussed. Gavin Thorpe, Production Director, informed the meeting that, as a result of the issues, a number of changes were made to the materials and processes used to manufacture the beds. I have given details of the changes below.

a. The quality of the wood used to manufacture the beds was improved which has resulted in a higher price being paid for the wood.
b. The mechanism that allows adjustments to the base was changed. The price of the new mechanism is also higher.
c. The new mechanism cannot be fully fitted using the existing machinery. This means that more labour time is required than was originally expected.

Stephan Tang, Finance Director, informed the meeting that we would report performance for the quarter using planning and operational variances.

Please prepare a draft report, that Stephan can present at the next SMT meeting, including:

- An explanation of planning and operational variances and the potential benefits of reporting these variances, using the changes that have occurred in the smart bed range to illustrate your explanation.

(sub-task (a) = 24%)

During the meeting, the SMT also discussed a proposed real-time dashboard (attached). The SMT is keen to monitor our quality performance and the dashboard highlights a number of quality related key performance indicators (KPIs). Gavin has expressed concerns that the Production Managers may be held responsible for these KPIs even though they are influenced by a number of other departments.

Please also include in your draft report:

- An explanation of the benefits of using a quality dashboard and why each of the specific KPIs shown in the attached dashboard would be appropriate to measure our quality performance.

(sub-task (b) = 48%)

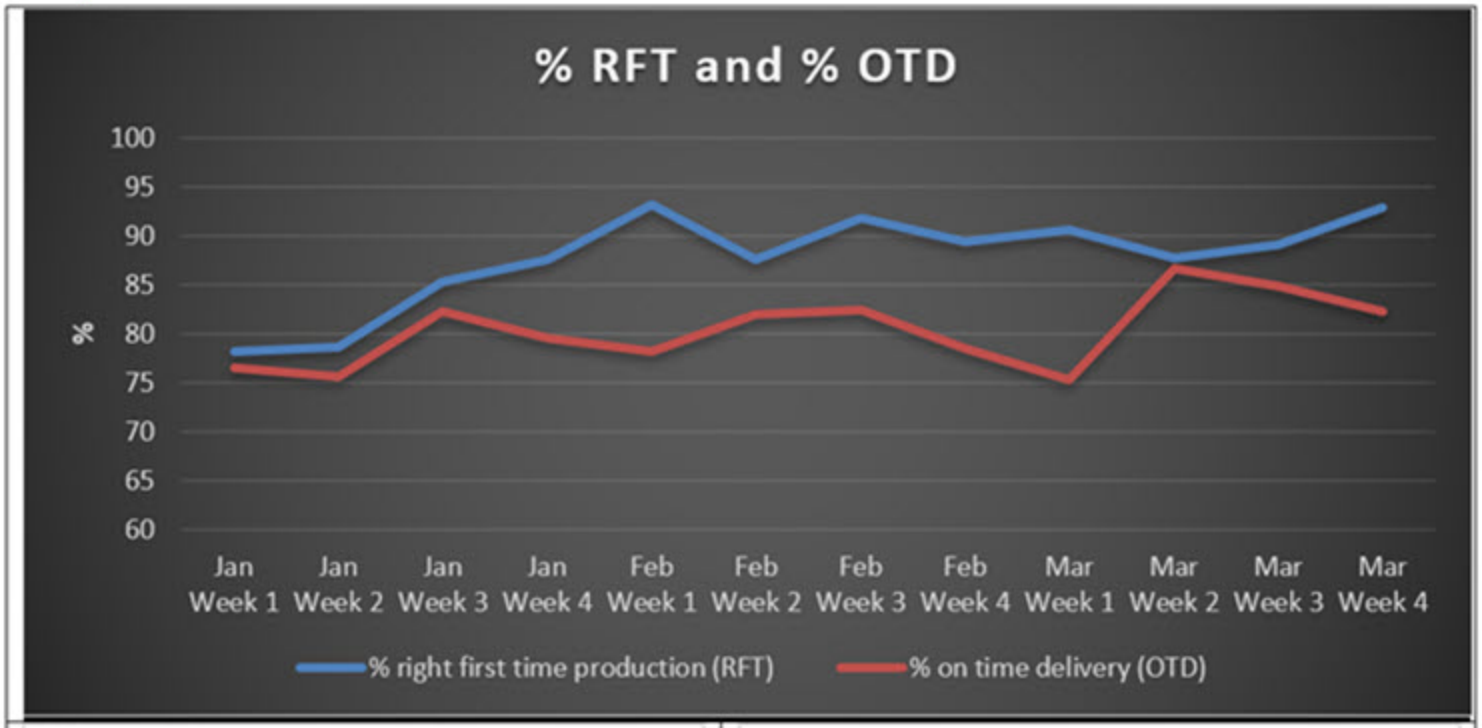
- An explanation of responsibility accounting and a discussion of the Production Director's concerns in respect of each of the KPIs.

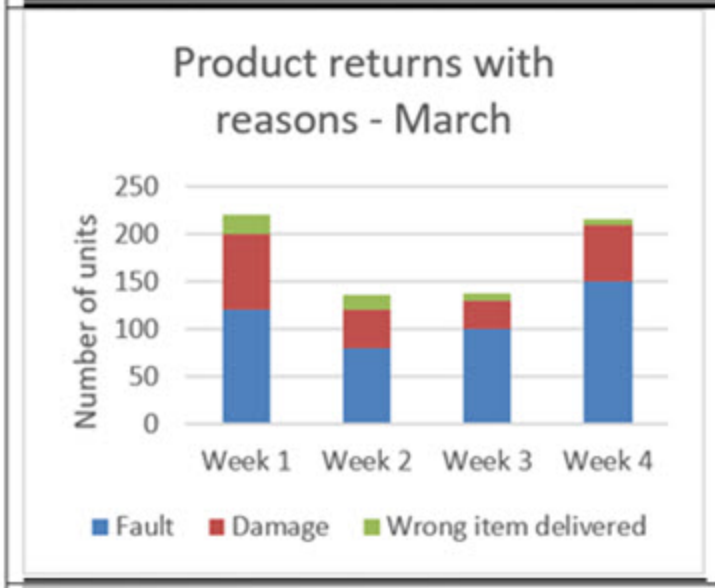
(sub-task (c) = 28%)

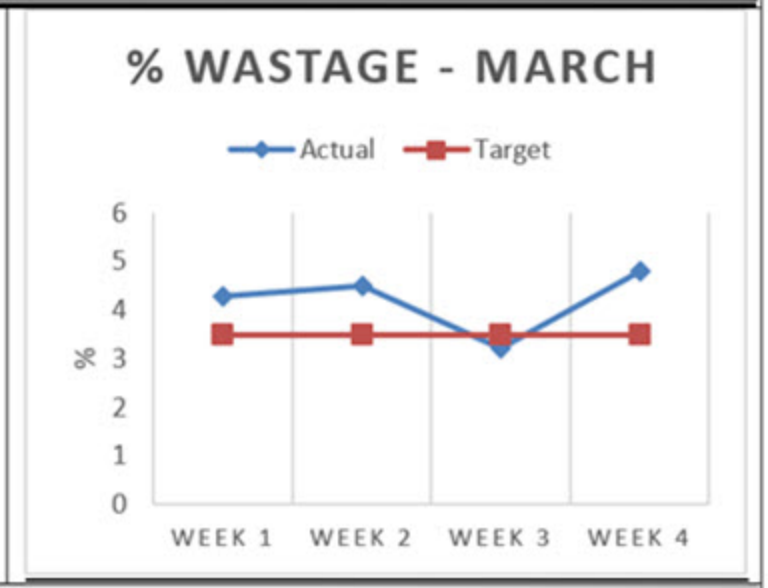
Una Volk
Finance Manager
AmaZZZing Beds

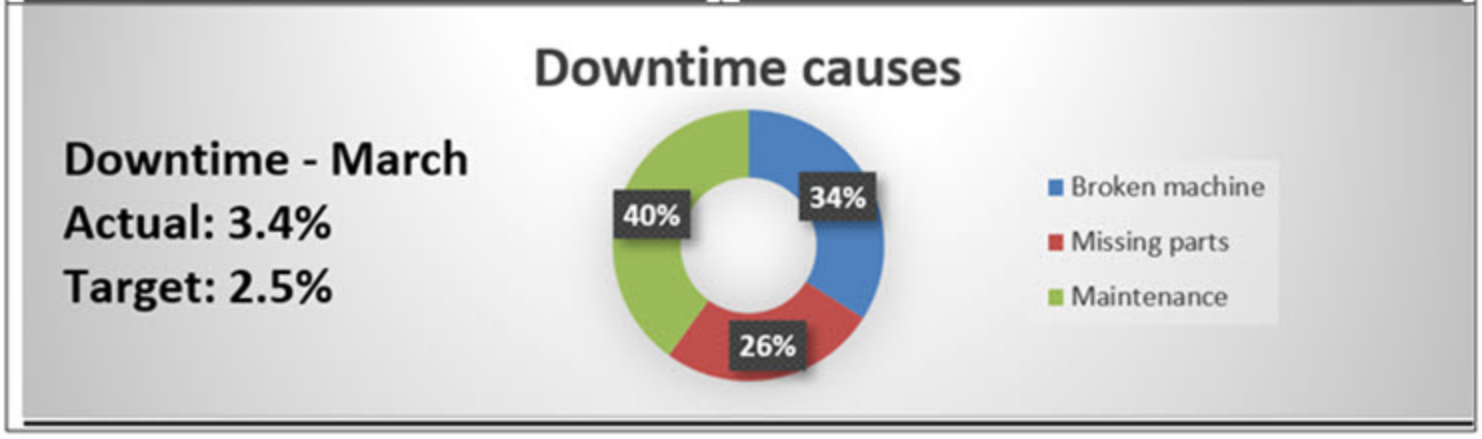
The attachment to this email can be found by clicking on the Reference Materials button above.

Quality KPI dashboard









Close

Reference Materials Pre-seen

Write the draft report for Una Volk, Finance Manager, in the box below:

Paragraph

Thank you for completing the Operational Case Study Exam.

Before you leave, don't forget to collect your printed confirmation of attendance.

Please click the End Exam (E) button before leaving the testing room quietly.

Operational Case Study Exam

Maximum Time Allowed: 3 Hours

Welcome, Candidate Name

If this is not your name, please let your administrator know.

Click **Next** to start the test.

This examination is structured as follows:

Section number	Time for section (minutes)	Number of tasks	Number of sub-task/s	% time to spend on each sub-task
1	45	1	3	(a) 44% (b) 20% (c) 36%
2	45	1	3	(a) 36% (b) 32% (c) 32%
3	45	1	3	(a) 32% (b) 36% (c) 32%
4	45	1	2	(a) 52% (b) 48%

Each section (task) has a number of sub-tasks. An indication of how much of the time available for the section that you should allocate to planning and writing your answer is shown against each sub-task in the text of the question (and summarised in the table above).

This information will be available for you to access during the examination by clicking on the Pre-seen button.

Reference Materials Pre-seen

Today is 1 December 2020. It has just been announced that the company intends to move all production of its hybrid mattresses to a purpose-built factory in Westland, a country that borders Eastland and uses the E$ as its home currency. The new factory will include a highly automated, digitally controlled production line. Production of the mattresses will commence in early April 2021. A wholly owned subsidiary company will be formed to run the operation in Westland. The appointment of a distributor is also planned, and they will purchase hybrid mattresses from the Westland subsidiary and then sell them throughout Westland. You receive the following email from Una Volk, Finance Manager.

From: Una Volk, Finance Manager
To: Finance Officer
Subject: Decision tree and KPIs

You will have seen the announcement to appoint a distributor who will purchase hybrid mattresses from our Westland subsidiary and then sell them to customers in Westland. The contract with the distributor will be for an initial period of 1 year. At this stage there are no plans to sell our other products in Westland.

The Senior Management Team (SMT) has been negotiating a contract with a Westland based distributor, Matt-rest World. It was originally proposed that Matt-rest World would purchase a pre-determined volume of mattresses from AmaZZZing Beds, at a fixed price. Matt-rest World has now said that it is prepared to pay a higher price for the mattresses if it is allowed to return any unsold mattresses at the end of the contract. It has also said that, if it is allowed to return any unsold mattresses and we fund an advertising campaign in Westland for hybrid mattresses, it will take a higher volume of mattresses. I have prepared a decision tree (attached) to show these options.

I would like you to provide me with a report, which I can present at the next SMT meeting, giving an explanation of:

- The decision tree and how it should be used to make a decision on the Matt-rest World contract. Please also explain the limitations of using decision tree methodology to make this decision.

(sub-task (a) = 44%)

- Other factors we should consider before making a final decision about whether to enter into a contract with Matt-rest World.

(sub-task (b) = 20%)

The SMT would also like to closely monitor the performance of the distributor. We are planning to include a number of key performance indicators (KPIs), as part of the service level agreement, which we will require the distributor to report on each month.

- Please suggest and justify three KPIs which would be appropriate to monitor the performance of the Westland distributor.

(sub-task (c) = 36%)

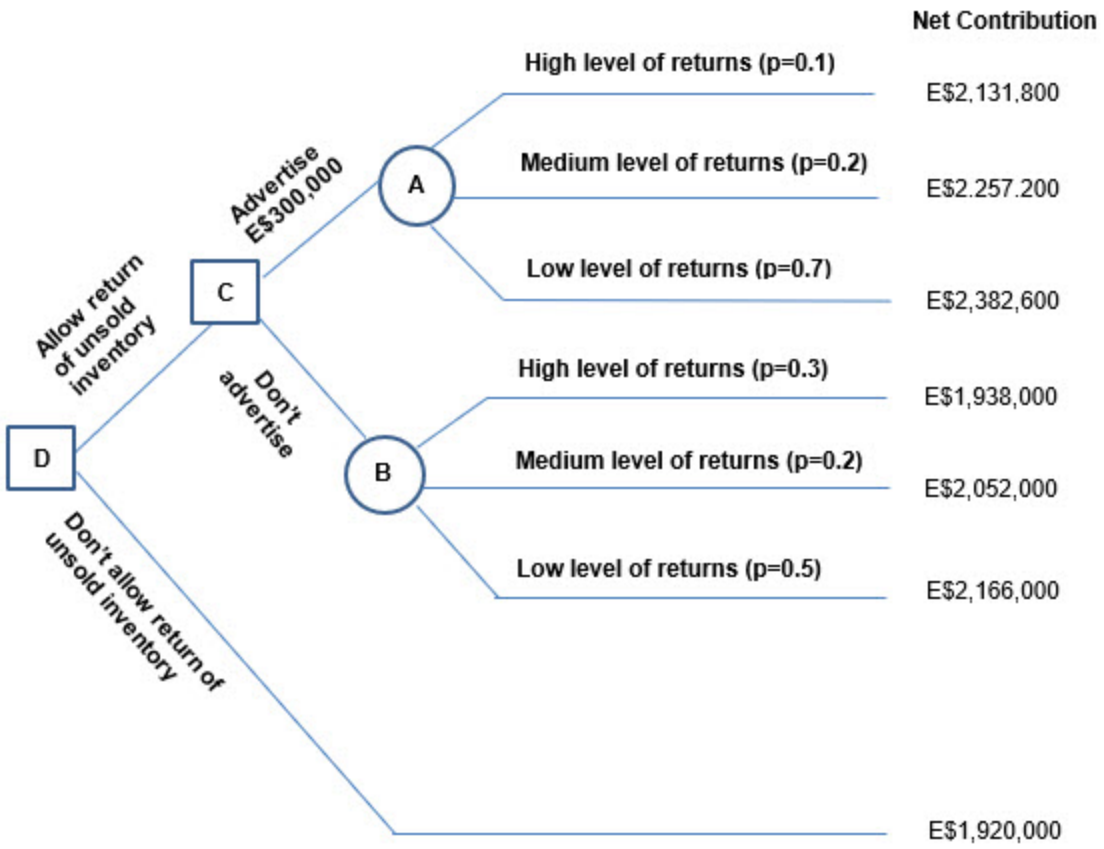
Una Volk
Finance Manager
AmaZZZing Beds

The attachment to this email can be found by clicking on the Reference Materials button above.

Decision tree of the potential arrangements for the Matt-rest World contract

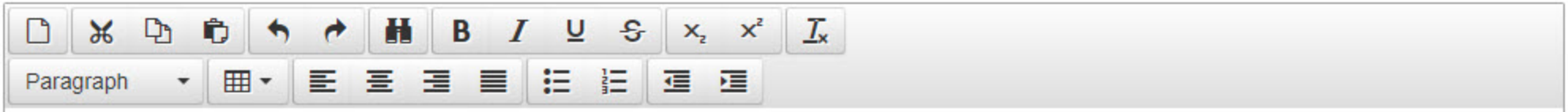
Notes:

1. The net contribution represents the contribution that would be earned by AmaZZZing Beds in the first year.
2. The advertising campaign is expected to reduce the likelihood of sales volumes being below the contracted amount and therefore the amount of the returns.
3. The expected value at point A is E$2,332,440 and at point B is E$2,074,800.



Reference Materials Pre-seen

Write the report for Una Volk, Finance Manager, in the box below:



Reference Materials Pre-seen

It is now January 2021. It is planned that the Westland subsidiary company will sell hybrid mattresses to the parent company in Eastland. The parent company will then sell the mattresses to customers in Eastland through its existing sales channels. All transactions will be in E$. You receive the following email from Una Volk, Finance Manager.

From: Una Volk, Finance Manager
To: Finance Officer
Subject: Capitalisation of equipment costs, international transfer pricing and working capital

There are a few issues regarding the new hybrid mattress factory in Westland which I would like your help with.

Firstly, there will be a large investment in the purpose-built factory and production machinery. The Senior Management Team (SMT) wants to understand how the construction costs, machinery and associated costs will be treated in the financial statements. I have listed the costs in Table 1 (attached). I would like you to prepare briefing notes, which I can discuss at the next SMT meeting, which include:

- An explanation of the criteria for capitalisation of costs under *IAS 16 Property, Plant and Equipment*. Please also provide separate justification for the treatment, as either capital or revenue expenditure, of each of the individual costs listed in Table 1, based on the provisions of IAS 16.

(sub-task (a) = 36%)

Secondly, we need to establish the transfer price for the intra-group sales of the mattresses by the Westland subsidiary to the Eastland parent company. Meena Patrick, Retail Director, has suggested that the mattresses should be sold to the parent company at cost so that the Eastland operation will continue to report a similar gross profit margin as previously. Ben De Luca, Chief Executive Officer, is concerned that Meena's suggestion might be construed as tax avoidance or tax evasion. Westland has a higher corporate tax rate than Eastland.

Please also include in your briefing notes:

- An explanation of the impact of Meena's suggestion on the profit reported in each company and how international transfer pricing rules would be applied in this case. Also, please explain whether, if the international transfer pricing rules were not applied, this would be an example of tax evasion or tax avoidance.

(sub-task (b) = 32%)

Finally, the new factory in Westland will also require a significant investment in working capital. It is obviously important that the investment is kept as low as possible, without affecting our ability to operate efficiently and effectively. In keeping with our sustainability ethos, we intend to source all our raw materials from suppliers in Westland.

Please also include in your briefing notes:

- An explanation of the factors that will determine the level of investment required, in each element of working capital, for the new operation in Westland.

(sub-task (c) = 32%)

Una Volk
Finance Manager
AmaZZZing Beds

The attachment to this email can be found by clicking on the Reference Materials button above.

Table 1: Expenditure on new factory

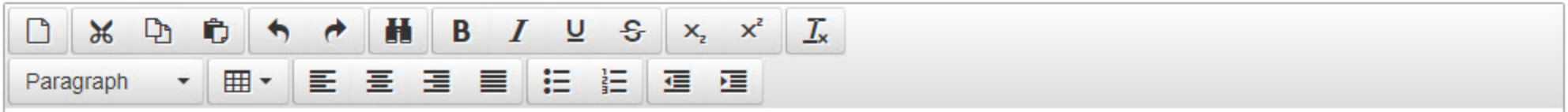
Cost item	Notes	E$
Construction costs of the factory	(1)	800,000
Planning, design and architect fees	(2)	50,000
Machinery purchase cost	(3)	300,000
Machinery installation cost	(4)	50,000
Training costs	(5)	20,000

Notes:

1. The factory is being purpose built for AmaZZZing Beds by a Westland building contractor.
2. Planning, design and architect fees are in respect of the purpose-built factory.
3. The purchase price of the machinery includes the cost of delivery to the factory.
4. The installation will be carried out by the company supplying the machinery.
5. The training is in respect of the machinery and will be carried out by the company supplying the machinery.

Reference Materials Pre-seen

Write the briefing notes for Una Volk, Finance Manager, in the box below:



Reference Materials Pre-seen

It is now February 2021, Stephan Tang, Finance Director, says to you:

"The construction of the new factory in Westland is well under way and it is planned to commence production in April 2021. We need to prepare budgets for the first quarter of operation, that is April–June 2021. Jeremy Dickson, the new Production Manager for the Westland factory, has no experience of budgeting and I would therefore like you to assist him with the production budget and explain how it links to the materials usage and purchases budget. I have sent him the sales budget for the quarter as a starting point since it is sales demand that will limit our operations. I have also prepared a list of the materials required for the king size mattress (Table 1) which I will give you shortly.

Please prepare some notes to send to Jeremy explaining:

- Why it is important to prepare budgets for the factory and how the budgets will help in the management of the factory.

(sub-task (a) = 32%)

- How to construct the total production budget, the total material usage budget and the total material purchases budget for the quarter. Please also explain two factors that will need to be considered when determining the finished goods inventory level.

(sub-task (b) = 36%)

There is also some machinery in the Eastland factory which could be transferred to the Westland factory. There are two potential options, Option A and Option B, that we are considering. Under Option A, we would transfer the existing machinery to Westland and use it for the next 6 months. At the end of the 6 months we would lease new, more efficient machinery and sell the existing machinery. Under Option B, we would lease the new, more efficient machinery and sell the existing machinery now. I have included in Table 2 which I will also give you shortly, some financial information about the two different options.

Please also include in your notes an explanation of:

- How the figures shown in Table 2 would be used to make a decision on whether to choose Option A or Option B, giving reasons why each item is relevant or irrelevant to the decision."

(sub-task (c) = 32%)

You tell Stephan that you will prepare the notes as soon as possible.

Table 1 and Table 2 can be found by clicking on the Reference Materials button above.

Table 1: Materials required for a king size hybrid mattress

Materials	Input Quantity*	Standard price per unit of quantity E$	Standard cost E$
Springs	1,575 springs	0.01	15.75
Pocket fabric	8.75 metres^2	1.25	10.94
Padding layers	6.30 metres^2	4.00	25.20
Covering fabrics	8.75 metres^2	6.00	52.50
Other fixings			15.05
Total material cost			**119.44**

* The input quantity is after allowing for material wastage

Table 2: Financial information under each option

	Option A Transfer existing machinery now and sell it 6 months later	Option B Sell existing machinery and lease new machinery now
	E$	E$
Machinery operating costs for the period	40,000	30,000
Depreciation charge for the period	6,000	
Disposal value of machinery now		25,000
Disposal value of machinery in 6 months' time	18,000	
Selling costs of machinery	600	800
Cost of transferring machinery to Westland	2,000	
Lease cost of new machinery for the 6 months' period		12,000

Reference Materials Pre-seen

Write the notes requested by Stephan Tang, Finance Director, in the box below:

Paragraph

Reference Materials Pre-seen

In early May 2021, you receive the following email from Una Volk, Finance Manager.

From: Una Volk, Finance Manager
To: Finance Officer
Subject: Variance analysis and the CGMA cost transformation model

I have just had a discussion with Jeremy Dickson, the Westland Production Manager. There have been a few production issues in April and he is keen to understand how these are going to impact the fixed overhead variances. He has given me the following information about the issues that have arisen:

a. It was necessary to appoint an additional production supervisor as the majority of the labour force was new and inexperienced.
b. The experienced workers transferred from the Eastland factory spent a considerable amount of time in 'on-the-job' training of the new workers.
c. The distributor required a higher number of mattresses in April than was originally planned and as a result more mattresses were produced in the month.

I have provided some figures in Table 1 (attached) that will be used to calculate the fixed production overhead expenditure, efficiency, capacity and total variances. I would be grateful if you could prepare some briefing notes that I can send to Jeremy.

Please explain in the briefing notes:

- What each of the fixed overhead variances listed above indicate and, using the attached figures, how they will be calculated and whether they will be adverse or favourable. (Note: there is no need to perform the actual calculations.) Please also give reasons why the expenditure, efficiency and capacity variances may have arisen.

(sub-task (a) = 52%)

I have been reading some literature on the CGMA cost transformation model and think that we could usefully apply it in both the Westland factory and our Eastland operations. I have selected four of the areas of the model which I have listed in Table 2.

Please also include in the briefing notes:

- An explanation of these four areas of CGMA cost transformation model and how these could be applied in AmaZZZing Beds.

(sub-task (b) = 48%)

Una Volk
Finance Manager
AmaZZZing Beds

The attachment to this email can be found by clicking on the Reference Materials button above.

Table 1: Fixed overhead variances April 2021

	Fixed budget	Actual
Production volume (mattresses)	1,200	1,400
Labour hours per unit (hours)	5	5.2
Total labour hours (hours)	6,000	7,280
Fixed production overheads (E$)	101,100	105,400

Standard labour hours required for actual output	7,000
	E$
Fixed overhead absorption rate per labour hour	16.85
Fixed overheads absorbed	117,950
Over absorption of fixed overheads	12,550

Table 2: CGMA's cost transformation model

1. Engendering a cost-conscious culture
2. Managing the risk inherent in driving cost-competitiveness
3. Understanding cost drivers and cost accounting systems and processes
4. Incorporating sustainability to optimise profits

Reference Materials Pre-seen

Write the briefing notes requested by Una Volk, Finance Manager, in the box below:

Paragraph

Thank you for completing the Operational Case Study Exam.

Before you leave, don't forget to collect your printed confirmation of attendance.

Please click the End Exam (E) button before leaving the testing room quietly.

OPERATIONAL CASE STUDY NOVEMBER 2020 & FEBRUARY 2021 EXAM ANSWERS

Variant 1

These answers have been provided by CIMA for information purposes only. The answers created are indicative of a response that could be given by a good candidate. They are not to be considered exhaustive, and other appropriate relevant responses would receive credit.

CIMA will not accept challenges to these answers on the basis of academic judgement.

SECTION 1

Time series analysis

How the trend and seasonal variation have been derived

A time series is a series of figures recorded over a time period and is represented here by the base data in Table 1. Time series analysis is a technique which analyses the time series to establish the underlying historical trend and any seasonal variations from this trend.

Here the trend has been derived by calculating a four-point moving quarterly averages of the base data. The first four quarters are totalled and then averaged to arrive at a quarterly average for the mid-point of the year (so, (10,200 + 8,000 + 6,400 + 11,700) divided by 4). Then, the first quarter is removed, and the fifth quarter is added to arrive at another mid-point average (so, (8,000 + 6,400 + 11,700 + 12,450) divided by 4). This process is repeated until all the data has been used. Given that we have four quarters and therefore the mid-point of the year is between the second and third quarters, we usually then average these mid-point averages to arrive at the trend. The trend is plotted in Chart 1. Note that the trend starts at quarter 3 in 2017 and ends in quarter 2 2019, because each mid-point average requires four data points.

Seasonal variations are derived by calculating the difference between the trend and the actual level of sales for each quarter in the trend (so from quarter 3 2017 to quarter 2 2019, eight quarters in total). Seasonal variations for comparable quarters in each year are then averaged to arrive at four seasonal variation average. Because the additive model is used these seasonal variations should add to zero and if they do not any residual amount is averaged across all the seasons. The final result is the seasonal variations as shown in Table 2.

Why trend and seasonal variations need to be separated

The base data shows total quarterly sales volumes of hybrid mattresses to the Eastland hotel industry for the years 2017 to 2019 inclusive. The base data shows that sales in

quarters 1 and 4 of each year are higher than for the rest of the year. However, what is less clear is the overall pattern or trend in sales because there is no consistent movement shown in the data. For example, quarter 3 in 2019 has lower sales than many of the preceding quarters and there is very little difference between quarter 4 2018 and quarter 1 2019.

Whilst we need to know what the seasonal variations are, it is also important to understand what the general longer-term pattern of sales or trend in sales is. This is why we separate out the seasonal variations from the base data in order to establish the trend which is shown in Chart 1.

What the data shows about sales demand

Chart 1 shows that there is underlying growth in sales of hybrid mattresses to hotels in Eastland across the three years, with each successive quarter showing an increase. This reflects our experience of the market where hybrid mattresses are increasing in popularity compared to more traditional sprung mattresses. The chart does however indicate that there seems to be a slowing down in this growth from around Q4 in 2018 because the line has become less steep.

The data in Table 1 shows the seasonal variations and indicates that, for example, in quarter 4 and quarter 1 we would expect sales to be respectively 2,139 and 2,208 units higher than the underlying trend level. In quarter 2 and quarter 3 we expect sales to be respectively 1,261 and 3,086 units lower than the trend. This pattern reflects the fact that, in AmaZZZing Beds experience, sales tend to be higher in colder months. With respect to hotels, it's possible that the same applies and that many hotels carry out refurbishments in the colder, and possibly quieter, autumn and winter months.

Receivables management

Financial impact of selling on credit

Currently we sell our products in store or on-line and customers are expected to pay in full at the time of ordering. Selling on credit means that we will receive the money for the sale in arrears, potentially a month or even longer after sale. This will therefore lengthen our working capital cycle. In addition, there will be a one-off cost and reduction in cash flow associated with setting up the credit control function.

There is also the risk that some customers either pay late (further lengthening the working capital cycle) or don't pay at all because they go out of business. The risk of non-payment is likely to be greater for the smaller family run hotel customers but is a relevant consideration for all potential customers. Any receivables not recovered will have to be written off which will reduce profit.

Approving new customers

Before accepting orders from any new customer, we need to review the creditworthiness of that customer so that we only sell to customers who will pay us. We can do this by:

- Analysing a potential customer's published financial statements, checking the length of time that they have been trading as well as their financial viability and stability.
- Obtaining bank or trade references in respect of the potential customer.
- Obtaining a credit report on the potential customer from a credit reference agency.

- Discussing the potential customer with our Sales Managers or anybody that has had contact with the customer to establish their impressions about business reputation.

Setting credit terms for new customers

The credit terms granted to new customers will include the maximum amount of credit we will extend and the length of time we allow for payment. The greater the credit period, the greater the chance that the customer will not pay, so we must assess each new customer's risk profile. A large well-known and established hotel chain is likely to be more financially stable than a small and recently established independent hotel business and thus likely to be given better credit terms immediately. When setting payment terms, we also need to consider the industry norm to ensure that we are not too far out of line with expectations.

Monitoring receivables

After we start selling on credit to customers, we will need to ensure that we monitor receivable balances via an aged receivables report which will show the amounts outstanding and whether there are any overdue balances. For any overdue amount the credit controller will call customers and ask for payment. Customers who continuously pay late will be reviewed and, if it is deemed necessary will have credit terms reduced, or even have their accounts put on stop.

SECTION 2

Issues to consider when choosing the base for the absorption rates

In absorption costing the base used to calculate the absorption rates will be a measure of activity and could be volume of production, direct labour hours, machine hours or some other base. If we manufactured only one size of mattress then the suitable base is likely the volume of production because each unit of production is the same. However, because the new production facility is for all hybrid mattresses, this would not be an equitable basis, as a larger mattress should absorb more overhead than a smaller mattress. Therefore, we would need to use either direct labour hours or machine hours.

For the new production facility, the most suitable base should be the one that has the greatest causal effect on the overheads. Given the higher level of automation in the production process compared to our existing facility then there is a strong argument to say that machine hours would be a more appropriate base than direct labour. However, this might not be the case for all the production processes. For example, it is possible that covers will still need to be hand stitched and therefore direct labour hours might be a more appropriate base here. Therefore, we also need to consider whether it would be beneficial to calculate different rates for different parts of the production process using different bases.

Digital costing system

How the use of a digital costing system would improve costings

A digital costing system involves linking our own digital systems (production, inventory management, purchasing and sales ordering systems) with those of our suppliers, customers and the market. In a digital costing system data is gathered to give up-to-date cost information which reflects current information. For example, our production system could give us up-to-date information about the time taken to assemble a mattress or wastage levels, purchasing and supplier systems could give us current input prices for covering fabric or springs.

The benefits of more accurate costings

Using our current approach, once standard costs are set, they remain in place for a year and so will potentially be out of date quite quickly. Using a digital costing system means these standards would be continuously updated when new information emerges and hence costings will more accurately reflect expected current operating conditions and market prices. The benefits of this are:

- More informed purchasing decisions because linking to external sources of information allows management to more easily identify alternative suppliers offering better deals.
- Better variance reporting. If standards are continuously updated to reflect current expected operating conditions and market prices, variances will be the result of deviations from this.
- Better information for pricing purposes. Having a standard cost based on up-to-date operating conditions and supplier prices means that management have a better idea of how profitable different types of mattress are and can make more informed pricing decisions.

Decision about Contract 1 or Contract 2

Explanation of the decision tree and how it can be used to make the decision

The decision tree illustrates the decision about which contract to select and shows that if Contract 2 is chosen the cost will be E$22,000 for the six months, irrespective of how much production there is and the level of problems on the production line. This indicates that if Contract 2 were selected this would be a fixed cost. For Contract 1, the position is more complex because the cost will depend on two sets of factors: whether production is at its maximum or minimum level and then whether there will be a high or low level of problems on the production line. This is represented in the decision tree as four possible outcomes: the top one being maximum production and a high level of problems and the last one being minimum production and a low level of problems. The decision tree shows the probabilities associated with each possibility. There is a 75% chance that production will be at the maximum level and a 25% chance that it will be at the minimum level. If production is at the maximum level there is a 60% chance of a high level of problems but if production is at a minimum level, there is only a 20% chance of a high level of problems.

In order to make the decision about which contract to choose using the tree we first need to establish the expected value of the contract cost at each of the points A and B. The workings show that at point A this is E$22,660 and at point B is E$17,320. We then need to take a weighted average of these two points based on the probability of having either maximum or minimum levels of production and to arrive at the expected value at point C. The workings show that this is E$21,325. Finally, we need to compare the expected value of Contract 1 of E$21,325 with the expected value of Contract 2 which is E$22,000. Therefore, using the decision tree, we should select Contract 1 because this has the lowest expected value for cost.

The limitations of using this decision tree

The probabilities shown on the decision tree are estimates. Given this is a new type of production line, it will be difficult to estimate these probabilities and so there is likely to be significant subjectivity. Ultimately, the difference in expected values is very small and therefore a higher chance of a high level of problems, or a higher chance of maximum production would increase the expected value of Contract 1 and therefore potentially change the decision.
The decision tree is drawn up based on a maximum and a minimum level of production and the expected value of Contract 1 is dependent on these two data points. In reality it is likely that production might be anywhere in between these points and therefore this analysis is an over-simplification of the possible outcomes.

The decision is made based on the expected value of each contract. Expected value is a weighted average and therefore is representative of the average position assuming that this activity happens time and time again. Whether to accept Contract 1 or Contract 2 is a one-off decision. In addition, using an expected value approach ignores risk, that is the dispersion of possible outcomes around the expected value. If we were risk averse, we would choose Contract 2 because there is no risk associated with this option as the future cost is fixed at E$22,000.

SECTION 3

Fixed production overhead variances

Expenditure variance

The expenditure variance is the difference between the actual overhead incurred in the month and the amount of budgeted overhead. This variance is E$10,813 adverse, which means that more was spent than we had budgeted to spend. One reason for this is the unforeseen expenditure on insurance and safety testing of the building that had not been budgeted for. Also, an extra supervisor was employed at additional cost. Another reason for the variance is that because this is a new facility, the budget will have been based on best estimates that in hindsight were inaccurate.

Capacity variance

The capacity variance reflects the difference between the originally budgeted direct labour hours and the actual direct labour hours worked multiplied by the standard absorption rate per hour. This variance is E$7,673 favourable and indicates that more direct labour hours were worked than originally budgeted, reflecting an increase in the capacity of direct labour. One reason for this is that more direct employees than originally budgeted were utilised during the month.

Efficiency variance

The efficiency variance is the difference between the standard hours worked for actual production and the actual hours worked multiplied by the standard absorption rate per hour. This variance is E$4,185 adverse which means that we used more direct labour hours to produce the mattresses than we should have done. In other words, direct labour was not as efficient as it should have been. There are two possible reasons for this: first, training on the new production line was delayed and second, more new and inexperienced employees were employed than originally planned. Both are likely to lead to employees taking longer than they should have to make each mattress.

Limitations of using these variances for controlling production overheads

The expenditure variance compares actual expenditure against a pre-determined budgeted amount of expenditure based on a certain volume of activity. If the actual level of activity is the same as budget, then the expenditure variance, once analysed by cost centre, will indicate where overheads are potentially out of control. However, if the volume of activity is higher than that budgeted, there is likely to be a stepped increase in fixed costs such as the additional supervisor that was employed. Such a step in fixed costs is not necessarily an indication that costs are out of control.

The efficiency and capacity variances together form the volume variance which reflects the difference between the actual and budgeted volume of activity. An adverse variance indicates that the volume of activity has decreased and not that overheads have not been controlled. The efficiency and capacity variances are calculated using an absorption rate based on direct labour hours, therefore we are assuming that production overhead is driven by the volume of direct labour hours. Although the efficiency variance shows us that employees have worked more hours than they should have for the actual output, this has little to do with the management of overhead. This is because overheads are not necessarily directly linked to direct labour hours, especially given the high level of automation in the new production facility.

Queries on non-current assets

Revaluation of buildings

IAS 16: Property, plant and equipment is the relevant accounting standard here and states that a policy of revaluation of non-current assets can be adopted, but only if all assets from the same class are revalued. This means that if we choose to revalue the old warehouse which is now being used as the new production facility, we will also need to revalue all our buildings. We cannot cherry-pick the buildings where there is a revaluation surplus.

If we were to choose the revaluation policy, we would need to have all the buildings that we own valued at 30 June 2021. Each building would be considered in its own right and either a revaluation surplus or revaluation loss calculated for each one. Using the old warehouse as an example, there is likely to be a revaluation surplus as the valuation now of E$100,000 is higher than the carrying amount of E$40,000. A revaluation loss will occur where the valuation is lower than the carrying amount.

For buildings with a revaluation surplus the accounting adjustment is to increase non-current assets and increase a revaluation surplus reserve, which is included as part of equity in the statement of financial position. Therefore, as the valuation occurs at the year-end there is no immediate impact on profit where there is a revaluation surplus. Next year though, annual depreciation on these buildings will be higher because depreciation will be calculated as the revalued amount divided by the remaining life of the building. For buildings with a revaluation loss, the accounting adjustment is to decrease non-current assets with a corresponding amount charged to profit. Therefore, this will reduce profit for this year, but future depreciation charges will be lower.

Useful life of new production line

IAS 16: Property, plant and equipment is also relevant here and states that the useful life of an asset is either the period over which the business expects it to be available for use or the number of production units expected to be created from using the asset. In this case, Gavin expects that the production line will need to be replaced in 15 years' time and therefore 15 years is potentially the asset's useful life because this is the period over which we expect the line to be available for use. We should not depreciate the asset over 20 years just because this spreads the cost over more years: useful life needs to be based on a proper assessment of how long the asset will be used.

However, before firmly deciding that 15 years is appropriate, we need to consider how Gavin has reached this conclusion. As Production Director, he is perhaps best placed in the business to make this judgement, but it will be important to understand his rationale. That being said, it is possible to change the useful life of an asset after the initial assessment, if there is evidence that a different life is more appropriate. This would be known as a change in accounting estimate and would result in a change to the annual depreciation charge going forward which would be calculated as the carrying amount of the asset at the date of the change divided by the new remaining life at that date.

SECTION 4

Zero-based budgeting (ZBB)

Using a ZBB approach, the first thing to establish is the activity that is generating cost (for example, handling of raw materials into production) and the objective associated with it (for example, to ensure that rolls of fabric and padding are in the correct location at the correct time to ensure continuous production).

The next stage is to establish a set of decision packages which show different ways in which the activity of raw materials handling can be achieved. Each decision package would be fully costed in terms of the impact on the business. The first decision package is the base case package, which is the minimum that would allow the activity to happen. This could be the position currently budgeted (two employees and two small forklift trucks) and would need to be costed in terms of the employee and equipment running costs. In addition, the cost of lost production (employee idle time and possibly lost sales) would also need to be established given that this is what is currently happening with the two current forklifts and two staff.

Incremental decision packages to this base case can then be established which could increase the level of service in terms of ensuring that there are no delays in production. One example might be to simply increase the number of employees and forklifts, another example might be to upgrade the forklifts for bigger machines but keep the staffing level the same and another might be to invest in a reorganisation of the production space and installation of automated lifting equipment. Clearly, this last possibility would have a significant additional cost but could lead to significant cost savings in the future and this would all be factored into the decision package.

If all of the decision packages are properly costed and the benefits of each identified, this will give management a lot of information about how the activity could be performed and the wider benefits to the business (including less idle time in production) that having additional resources might give. This then allows management to make more informed decisions about resource allocation and this should help to improve operational efficiency.

KPIs for Machinery Maintenance Department

The three suggestions of KPIs for the Machinery Maintenance Department are as follows:

1. Percentage of scheduled routine maintenance completed each month. The new facility is more reliant on machinery than the main facility, therefore it is vital that this machinery is operating optimally, otherwise there could be production quality

issues. Routine maintenance is designed to ensure that this is the case and should be carried out regularly. This KPI should be set at a target of 100%.

2. Number of production hours lost in a month due to machinery break-down. Whilst routine maintenance is important and if carried out properly should stop machinery break-down, there will inevitably always be occasions when machines break-down unexpectedly. Assuming that routine maintenance is happening as per the first KPI, this KPI helps capture the performance of the Maintenance Department in relation to how quickly they manage to deal with repairs.
3. Percentage of production rejected in a month as a result of machinery faults. The ultimate implication of having machinery which is poorly maintained is faulty production that has to be scrapped. Therefore, measuring the percentage of production rejected, and so scrapped, related to machinery faults will focus management attention on this.

Relevant costing for one-off contract

The relevant costs of this one-off contract will be any change in cash flow arising as a direct consequence of undertaking the contract.

Covering fabric

The covering fabric that will be used for this order is already in inventory and is no longer used in production. We had planned to sell the fabric at E$2.50 a metre^2, but clearly if this order is fulfilled this cannot happen. Therefore, the relevant cost of covering fabric will be the revenue forgone from this sale. The original purchase cost of the fabric is not relevant as this is a past cash flow.

Other raw materials

The other raw materials required are used in everyday production and therefore we will need to replace any inventory that we utilise for this order. The relevant cost of this will be replacement cost rather than standard cost. Given prices have increased this is likely to be higher than standard cost.

Direct labour

25% of this order will require additional overtime working. The cost of these overtime hours, including the 50% premium above the normal rate, is a relevant cost because these hours will only be worked as a result of fulfilling the order. The rest of the order (75%) will be completed within normal paid working hours and this element is not therefore a relevant cost: we will be paying for these hours whether we take on this order or not.

Production overhead

Only those production overheads that result in incremental cash flows as a result of fulfilling this contract will be relevant costs. It follows that all fixed production overhead included in the E$52,000 will not change as a result of the order and therefore are not relevant. Variable production overheads however are expected to change as a result of production and therefore these are likely to be incremental and therefore relevant.

Additional costs

The E$2,000 that will need to be paid to hire an embroidery machine is an incremental cost and therefore relevant. However, the E$500 spent on the Sales Manager visits is not relevant because these have already been incurred and so this is a sunk cost.

OPERATIONAL CASE STUDY NOVEMBER 2020 & FEBRUARY 2021 EXAM ANSWERS

Variant 2

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SECTION 1

Costing of videos

Establishing the cost per video over its lifetime

Each video is a digital media product without physical form. There are significant costs associated with creating each video, but once created, it can be viewed without incurring additional creation costs. However, there will be costs associated with each view of a video and how the video series will be hosted.

To establish the cost of each video we need to first establish the up-front costs.

This will include direct and indirect costs:

- The direct costs will be any costs which relate to a specific video and include the fees paid to the actor or specialist and the cost of hiring the specific venues and locations used. It will also include the cost of the time taken creating each video by our own Marketing Department.
- The up-front indirect costs will include any costs which relate to making the whole series of videos, such as the cost of hiring the specialist filming and editing equipment. It will also include the cost of upgrading our current website to enable us to host the video series. This will include the cost of any fees to external IT specialists and the cost of time taken by our own IT Department.

The next stage is to establish the costs that will be incurred over the lifetime of the video. The direct costs will include the actor royalties and fees to the video hosting site. The indirect costs will include any costs that might need to be incurred updating video content or improving the website.

Difficulties of establishing the cost per video

The up-front direct costs such as actor and specialist fees and hiring of locations will be relatively easy to establish and include in the cost per video. These are specific to each video and once we have contracted to create the video, we will know what these costs are.

The up-front indirect costs, such as the cost of hiring equipment will also be relatively easy to establish in total. The difficulty though will be determining how much of the total costs relate to each video. It could be that some of the videos are quicker to create and edit than others and therefore it might be that dividing the total cost by eight would not represent the benefit gained from the equipment.

The costs associated with upgrading the website will be relatively easy to establish because they will arise up-front when the work is done. However, the upgrading is likely to be beneficial to all parts of the business and therefore we will need to assess how much of the upgrade cost can be attributed to the video series and how much to other areas of the business. We will also need to consider whether each video should get the same share of the cost.

Costs that will be incurred over the lifetime of each video are more difficult to establish at this stage. Costs such as actor royalties and the fees to the video hosting site, cannot easily be established because they will arise in the future. The amount to be paid will depend on the number of views of a particular video. This is difficult to predict because we don't know how popular the videos will be (therefore determining the number of views), nor how long we might wish to keep them available (that is, what the lifetime of the series is). In addition, it is difficult at this stage to determine when content might need to be amended.

Activity based budgeting

Establishing the number of part-time employee hours needed each week
Using activity based budgeting we would consider each of these two duties separately and determine the time that each duty will require each week as follows:

- Each time a room is set up, employee time is required to make sure that the room is clean and that the appropriate equipment and consumables such as fresh water for clients are in the room. There are some elements of room set-up which are likely to take the same amount of time irrespective of the type of service (for example, making sure there is water available). However, most elements of set-up will depend on the type of service. Setting up a room for acupuncture is likely to take longer than the other services because of the ultra-clean environment needed and the equipment involved. Therefore, we should establish the time taken to set up a room for each type of service we offer. The total time required in the week would then be calculated for each type of service as the time taken for setting up the room for that service multiplied by the number of times the room has to be set up (which is the cost driver). This would then be totalled for all service types.
- Each time appointments need to be booked with clients, employee time is required (either on the telephone or in person if the client is already at the clinic). All appointments are booked in courses of five irrespective of the service,

therefore we would expect that this activity would take the same amount of time for all services. However, there may be differences dependent on whether it is an existing client or a new client. Presumably there will be more questions to be answered for a new client and therefore we might need to consider existing and new clients separately. Therefore, the total time required for the week would be the time required for a booking multiplied by the number of bookings (which is the cost driver) for each type of client.

Difficulties associated with estimating the number of part-time employees

The first difficulty is that we will need to carry out the above exercise for all of the duties that a part-time employee will be expected to do during a week. This could be time consuming and there could be inherent difficulties in identifying all of the duties given that part of their role will also be to support the Clinic Manager.

Another difficulty is that this is a new venture for us, and we have no experience to help us establish timings for, say, setting up a room or booking appointments. We are trying to determine the number of hours required before we've even opened the doors of the clinic and therefore our assessments of time taken per duty will only be our best estimate.

It is potentially going to be difficult to establish the number of each duty required each week. Judgement will be required regarding the number of set-ups and the number of bookings expected, as client numbers and client service preferences need to be estimated.

It's also possible that the time taken to carry out activities will diminish as the weeks move on. For example, in the first few months it is likely that most clients will be new, therefore taking longer to book in. Also, it's possible that over time as employees get used to their duties they speed up or find ways to improve efficiency.

We also need to allow for flexibility in that it is likely that we will always need somebody available on the telephone and the reception desk. In addition, there could be times of the day which are busier than others. For example, all the rooms have to be set up at the start of the day and because a person cannot be in more than one place at a time, we may need extra people at the start of the day to ensure that the tasks are complete. We will also need to give time for training and to give allowances for sickness and employee holidays.

SECTION 2

Multi-product profit-volume chart

What the chart tells us

The straight line that runs between points A and E on the chart (line AE) shows all the combinations of revenue and profit that will be earned assuming that the four services are sold in the budgeted mix. The line that connects the points A, B, C, D and E on the chart (line ABCDE) shows the combinations of profit and revenue on the basis that we sell the service with the highest c/s ratio first and the service with the lowest c/s ratio last. In this chart the assumption will be that sleep monitoring & advice is sold first, then hypnosis, then acupuncture and finally wellness counselling.

Both lines AE and ABCDE start and end at the same points. The start of the lines on the profit axis represents the fixed costs of operating the Sleep & Wellness Clinics, which are approximately E$140,000 for the six months. This will include costs such as Clinic Managers' salaries and depreciation of the equipment. The end of the line indicates that if sales are as budgeted, revenue will be approximately E$460,000 for the six months and profit (after fixed costs) would be approximately E$82,500.

Based on the budgeted mix, the chart shows that the revenue required to break even is approximately E$285,000. We can also see that there is a comfortable margin of safety in that budgeted revenue can fall from approximately E$460,000 to this breakeven level before we make a loss: a drop of 38%. In other words, this tells us that assuming our budgeted mix reflects our actual mix, our overall sales revenue could fall by 38% before the clinics start to make a loss.

The line that connects points A, B, C, D and E on the chart allows us to see how different breakeven and margin of safety would be if we were able to sell the clinic services in the order of their c/s ratios, starting with the highest. The steeper the gradient of the line, the higher the c/s ratio, where the service with the highest c/s ratio gives the most contribution per E$1 of revenue. Breakeven revenue would fall to approximately E$250,000 and margin of safety would increase to 46% because budgeted revenue could fall from E$460,000 to E$250,000 before a loss was made.

Focusing on certain services

These differences reflect the fact that there is a significant range in the c/s ratios from 0.37 to 0.60. This tells us that it might be beneficial to concentrate our selling efforts and marketing on the services with the highest c/s ratios (sleep monitoring & advice and hypnosis) rather than acupuncture and wellness counselling. However, there are a number of reasons why this might not be the most appropriate approach:

- The c/s ratio only gives us an indication of the contribution per E$1 of revenue and does not take into account the fixed costs. It's possible that some services consume a greater portion of these fixed costs than other services.
- The c/s ratios only give us the relationship between contribution and revenue for each service and not the absolute value of either. It could be that even though wellness counselling has the lowest c/s ratio, it might have the highest or one of the highest revenues.

- We need to be mindful of the services that our clients will expect. The graph indicates that after sleep monitoring & advice, wellness counselling is expected to have the second highest revenue (as shown by the length of the line between points D and E).

Initial recognition of the expenditure on the clinics

The insurance paid on 1 January 2021 cannot be capitalised because insurance is an ongoing expense of operating the clinics and therefore should be expensed to profit. However, in the year to 30 June 2021 the charge to profit should only reflect the period over which we have occupied the buildings, which will be from 1 January 2021 (six months). The difference between this charge and the amount paid of E$12,000 will be treated as a prepayment within other receivables in the statement of financial position at 30 June 2021.

In accordance with the rules in *IAS 16: Property, plant and equipment*, the expenditure on internal building works, including the fixtures and fittings and on all of the furniture and equipment, can be capitalised as non-current assets. This is because the expenditure allows the clinics to operate and AmaZZZing Beds will be able to generate future economic benefits in terms of profit as a result of this. In addition, these assets are tangible in nature and will last for more than 12 months and the expenditure can be reliably measured.

IAS 16 states that expenditure can be capitalised if it is either part of the purchase price of an asset or can be directly attributable to getting that asset ready for its intended use. Therefore, as well as the E$150,000 for the building work and E$122,000 on furniture and equipment, the E$4,200 spent on delivery and installation costs can also be capitalised as part of the asset costs. This is because this is directly attributable to getting the computer and other equipment ready for its intended use.

Employee training expenditure is always expensed to profit or loss because such expenditure does not meet the rules within *IAS 16*. Health & safety is an operating activity and even though the computer training relates to an asset, it is not necessary to enable that asset to be used. In addition, it is people that are being trained, and people cannot be controlled, which means that an asset is not being created.

Difference between accounting and taxable profit

For the year ending 30 June 2021 the following will arise in respect of the E$25,000 of computer equipment:

- Accounting profit will be reduced by a depreciation charge. The annual depreciation charge for the computer equipment will be calculated as E$25,000 less any estimated residual value multiplied by 20%. Because these assets were purchased and ready for use on 1 January 2021 only 6/12ths of this annual charge will reduce the profit for the year ending 30 June 2021.
- Tax depreciation allowances will be available to claim calculated as E$25,000 x 25%. These allowances are not pro-rated because the tax rules of Eastland state that a full year's allowance can be claimed in the year that qualifying assets are purchased.

Taxable profit will be calculated as accounting profit, add back accounting depreciation and then deduct tax depreciation allowances. For the year ending 30 June 2021, the tax depreciation allowance for the computer assets will be greater than accounting depreciation and so taxable profit will be lower than accounting profit. This will reduce the amount of tax that would otherwise have been payable.

SECTION 3

Sales mix contribution variances

The meaning of the variances

The sales mix contribution variance measures the impact on contribution of the actual volume of services being sold in a different mix to that budgeted. As we can see from Table 2 in the schedule, whichever method is used the total mix variance is the same at E$3,840 favourable. This shows that the change in the mix of services sold has increased contribution overall.

The variances calculated using the individual units method tell us that we sold proportionately more sleep monitoring & advice and acupuncture treatment courses (the favourable variances) and proportionately less wellness counselling and hypnosis courses (the adverse variances) compared to our budgeted mix.

The variances calculated using the weighted average method go further than this though and tell us the impact of this change in mix for each type of service when measured against the average contribution. The variance for sleep monitoring & advice remains favourable and shows that we have sold proportionately more of a treatment with a higher than average contribution (E$180 versus E$124). The variance for wellness counselling is now favourable and indicates that we sold proportionately less of a treatment with a lower than average contribution (E$100 versus E$124). The variance for acupuncture is now adverse and indicates that we sold proportionately more of a treatment with a lower than average contribution (E$80 versus E$124). The variance for hypnosis is now favourable and indicates that we sold proportionately less of a treatment with a lower contribution than average (E$120 versus E$124).

The benefits of each method

The benefits of using the individual units method are that it is easier to calculate than the weighted average method, is easier to explain and immediately shows the impact of the change in mix volumes. An adverse variance simply means that we sold proportionately less of a service and a favourable variance simply means that we sold proportionately more of a service.

However, in the weighted average method the individual variance captures both the effect of the change in mix and whether this change in mix has a positive or negative effect on total contribution, based on whether the service has a lower or higher contribution than average. For example, acupuncture shows a favourable variance using individual units because we have sold proportionately more, but on a weighted average basis it is adverse because this has the lowest contribution of all treatment types. Therefore, selling more of this type of service in relation to the other services, will have an adverse impact on the overall contribution.

The reasons for the change in mix

The following are the reasons why the mix of services sold might have changed:

- A course of acupuncture treatments has the lowest price and it's possible that clients (especially in the Southern Clinic where disposal income is less) have a greater preference for this as a result.
- There were problems securing a reliable hypnosis therapist in the Southern Clinic which will have reduced the availability of appointments and therefore sales.

In addition, given that this is a new venture, it is possible that the budgeted mix is incorrect. This might be particularly relevant to the sleep monitoring service where we have sold significantly more courses than we budgeted. Perhaps we have underestimated the impact of increased consumer interest in sleep science.

Performance of the clinics

The KPIs would seem to indicate a marked difference in performance between the two clinics. The Northern Clinic has exceeded all targets, whilst the Southern Clinic has failed to reach all but one target.

The KPIs for the Northern Clinic are encouraging and show that more than the targeted percentage of clients have either booked more than one type of service or recommended a friend to make a booking. This indicates that the Clinic Manager and their team have been successful in developing good relationships with clients, which is also evident from the higher than target customer satisfaction rating. 81% of all enquiries have led to bookings which again is above target and indicates that the team has performed well.

The KPIs for the Southern Clinic, indicate the opposite, less than the targeted percentage of clients have booked more than one treatment type. However, this could be because this Clinic is in a less affluent area and so clients do not have the disposable income to be able to afford multiple courses, rather than a fault with the performance of the Clinic Manager and team. In addition, the rate of converting enquires into bookings is lower than target, but again this could be more to do with the location of the Clinic and the relative high cost of treatment courses than the performance of the team. What is encouraging though is that 55% of clients have recommended a friend to book (above target). In addition, the customer satisfaction rating is only just below target, which given the issues with securing a hypnosis therapist at the Clinic, is a good indication that clients are happy.

Participation of Clinic Managers in future budget and target setting

Allowing the Clinic Managers to participate in the setting of budget and KPI targets for the individual clinics for the year to 30 June 2022 will have the following benefits:

- The managers are the people working in the clinics and over the past three months will have built up a good understanding of the client base around their individual locations. Therefore, participation should lead to more realistic budgets and targets which are tailored to the market and the environment in which the clinic operates.

- Participation in the budget and target setting process is more likely to motivate the managers to strive towards meeting the targets and taking responsibility for achieving them. Currently, both Clinic Managers have the same KPI targets. This is unfair given the different client base of each clinic and if these targets aren't changed, the manager of the Southern Clinic is likely to become demotivated.
- This approach will be consistent with how we set budgets for the rest of the business.

There are also however, some potential drawbacks which are as follows:

- The time required to create the budget will be extended and we may need to provide training to the Clinic Managers to enable them to complete the task. Therefore, there will be cost implications, although once trained they will be able to complete it in future years without additional training.
- There might be a tendency for the Clinic Managers to build slack into the budget or to set low KPI targets because they want the comfort of a margin of error. The managers may deliberately set KPI targets which can be easily achieved. Clearly, this will not be in the interest of the business as a whole.

SECTION 4

Relevant costing for Sleep & Wellness Conference

Relevant and irrelevant costs of the decision whether to continue with the conference

The relevant costs and revenues to be considered in the decision will be the future, incremental cashflows which will arise as a result of organising and holding the conference. This excludes any costs which have already been incurred, even if they relate to the conference. It also excludes any costs which have already been committed to. In terms of each of the items identified in the schedule:

- The revenue from charging attendees E$50 each will be relevant to the decision because these will only occur if the conference goes ahead.
- The amount payable to the hotel for room hire and catering (less the non-refundable deposit) will be a relevant cost because there will be a future cash flow that only arises as a result of the conference. Assuming that we do sell all 500 places and that all people attend, the relevant cost will be E$22,500 less the deposit of E$5,000. The deposit is a sunk cost because it has already been paid and cannot be refunded if we did not go ahead with the conference.
- The fees payable to the conference speakers of E$3,000 are relevant costs because these will only arise as a result of the conference happening. However, by using our freelance clinic specialists there is also an opportunity gain of E$300 which will reduce this cost. This is an opportunity gain because as a result of using our freelance clinic specialists at the conference, we will use replacement specialists at the clinics that will cost in total E$300 less than our normal specialists.
- The cost of advertising of E$1,500 will only be a relevant cost if we do not accept the magazine's request for a stand at the conference. Given that the stand is unlikely to cost us anything, it would make sense to accept this offer, in which case the relevant cost of advertising is nil because there will be no future cash flow.
- The cost of E$6,500 (which is the standard production cost of these mattresses and beds) is not a relevant cost because the products have already been manufactured for display purposes in the retail stores. The only incremental cost will be the cost of transporting the products to the hotel and then from the hotel to the retail stores.
- The gift bags will only be purchased if the conference happens and therefore there will be a relevant cost for this. Because we have to make a minimum order of 700 gift bags, we should include the full cost of all 700 bags in the relevant cost of the conference, unless there is an alternative use for the extra 200 bags.
- Regarding the printing cost of E$1,800, only the E$200 required for the ink is a relevant cost. The E$1,500 is not relevant because the printer has already been ordered and therefore will have to be paid for whether or not the conference happens. The E$100 for paper is a sunk cost because it has already been incurred and as this paper will not be used for any other purpose it does not need

to be replaced. Only the E$200 for ink will be a future cash flow that only arises as a result of the conference happening.

- The Marketing Director and the two Clinic Managers are salaried employees and therefore will be paid irrespective of what activities they undertake. Therefore, this is not a relevant cost of the conference.

Factors to be considered before making the decision

The idea behind the conference is to promote the clinics and the company's range of mattresses and beds. Therefore, by holding the conference this should increase future sales and therefore will generate additional cash flow for the business in the future. This has not been factored into Helene's schedule but is a relevant benefit. This could potentially be quite significant, but will be difficult to estimate given that we have never undertaken anything like this before.

We also need to consider how likely it is that there will be 500 attendees. The total amount of attendee fees and the catering costs are dependent upon this. Initial demand for places is low and we need to consider why this is the case. Perhaps the hotel we've chosen isn't in the best location or maybe we need to consider advertising the conference more extensively.

Factors to consider before investing our cash

We need to ensure that by investing, we do not end up leaving the business short of funds and we should only invest cash which is surplus to requirements. It is important that we establish our current and potential liabilities (such as payments to suppliers and the future costs of the conference) and ensure that we will have sufficient funds to settle these as they fall due. We also need to ensure that there are sufficient funds to pay for setting up the two new clinics that we have planned (such as up front rent payments and fitting out costs).

After we have determined any surplus, there are three factors that we need to consider: liquidity, safety and return.

- First, we should consider the liquidity of the available short-term investments. Some investments such as Treasury Bills or Certificates of Deposit are marketable which means that they can quickly be converted back into cash by selling the investments on the market to another investor. These types of investment, therefore, have high liquidity and will enable us to quickly deal with unforeseen events. Such events might include a significant increase in cotton prices which increases our raw material costs or the need to expand our production facility earlier than anticipated due to an increase in demand. Other investments, such as some bank deposit accounts can tie the cash up for a period and such investments are therefore less flexible.
- Second, we should consider the safety of any potential investments, that is, the risk of the investments. We need to consider whether we will accept the risk of the value of our investment falling. Investing in the stock market is perhaps the most risky form of investment we could take (especially in recent years) and investing in a bank deposit is one of the safest in terms of knowing that you will get the capital value back plus interest. Given that in a year we are planning to

expand the production facility, safety of the capital amount is likely to be high priority.

- Third, we need to consider the profitability or return of the investment. Usually the lower the risk of an investment the lower the return (that is, the profit) and vice versa and so this is a key factor in how much return will be generated. In addition, the liquidity of the investment will also play a part as the more liquid the investment, usually the lower the level of return. We also need to factor in the administrative costs of investing which will affect the overall profitability of the investment.

OPERATIONAL CASE STUDY NOVEMBER 2020 & FEBRUARY 2021 EXAM ANSWERS

Variant 3

These answers have been provided by CIMA for information purposes only. The answers created are indicative of a response that could be given by a good candidate. They are not to be considered exhaustive, and other appropriate relevant responses would receive credit.

CIMA will not accept challenges to these answers on the basis of academic judgement.

SECTION 1

What-if analysis

Effects of changing the variables on the budget for EasiMattress

If sales volumes are decreased by 10% this will affect both revenue and variable costs by the same proportion leading to the 10% reduction in contribution shown in the schedule. The contribution margin per unit remains the same. The effect on profit is greater than 10% though because the fixed costs will remain the same and therefore, because the volumes have decreased, the fixed cost per unit will increase.

If selling prices are decreased by 10% this will have the biggest effect on both contribution and profit. This is because a 10% reduction in selling price will lead to a reduction in contribution margin because revenue will fall without any corresponding fall in variable costs. Reduced selling prices will also have no impact on fixed costs.

Increasing variable cost per unit by 10% also reduces contribution margin, although not to the same extent as a 10% decrease in selling price. This is because the increase in variable costs is smaller than the decrease in revenue in absolute terms where selling prices fall.

Increasing fixed costs by 10% has the least impact on the estimated budget because fixed cost is the smallest element of the budget in absolute terms.

From the schedule we can see that a decrease in selling price has a greater effect on budgeted profit than a decrease in volume even though both will have the same effect on sales revenue. This is because a change in volume will affect both revenue (which will decrease) and total variable costs (which will also decrease), given that the change will be applied to both selling price and variable cost per unit. A change in selling price affects revenue but does not change total variable costs.

Benefits and limitations of this what-if analysis

This what-if analysis shows us the effect of changing a single variable (such as decreasing selling prices or increasing fixed costs) on the budgeted contribution and profit for the EasiMattress range. This allows us to judge the riskiness of each variable which gives us useful information about how sensitive different aspects of the budget are to change. For example, we can see that a 10% decrease in selling prices is more risky than a 10% decrease in sales volumes, as it has a higher effect on profit.

However, this what-if analysis only considers a change in a single variable at a time. It therefore ignores the interdependency of variables and assumes that a change in one variable would not impact another variable which is unlikely to be the case. For example, a decrease in selling prices would likely lead to an increase in demand and therefore an increase in volumes sold. It is possible to carry out what-if analysis which models multiple changes to variables at one time, although that has not been done here.

Further, this what-if analysis shows the effect of the change in the variable but does not tell us anything about the likelihood of the change. We've modelled 10% changes in each variable for this analysis, but it's possible that a more likely change might be 5% or even 20%. To be useful it would be important to understand the probability of different levels of change in, say, the variable cost per unit as this would enable us to more accurately consider the effect of the change.

Reconditioning of old binding machine

IAS 16: Property, plant and equipment normally requires expenditure on an asset already recognised to be charged to profit or loss as incurred. However, if that expenditure is expected to increase the future economic benefit of the asset in excess of the originally assessed level of performance, then it can be added to the carrying amount of the asset.

In our case an old binding machine has been reconditioned, the effect of which is to enhance its capacity and to extend its useful life by three years compared to our original assessment. Therefore, the future economic benefit that will be derived from this asset is increased and so this subsequent expenditure of E$6,500 on the asset can be capitalised.

In addition, we can also capitalise the E$100 that will need to be spent obtaining a safety certificate. Because there is a legal requirement to do this, this expenditure is directly attributable to getting the reconditioned binding machine ready for its intended use. Without the certificate the machine cannot be used.

Accounting treatment for leased equipment

In accordance with *IFRS 16: Leases*, where equipment is leased, a right-of-use asset and a liability will need to be recognised. The right-of-use asset represents the fact that we, AmaZZZing Beds, have the right to use the sewing machine for the period of the lease, which is three years. The liability reflects the fact that we have a future obligation to pay the lease payments.

The liability will initially be measured and then recorded at the present value of the lease payments that have not yet been paid. Because we are making the payments in advance this will therefore mean the present value of the annual E$8,000 payments to be made

next year and then the year after (two payments in total). The discount rate used to calculate the present value should be the interest rate implicit in the lease, which we will need to establish.

The right-of-use asset will initially be measured at cost, which will include the initial measurement value of the liability, plus lease payments made at the start of the lease (E$8,000), plus any costs incurred in setting up the lease (E$300).

The right-of-use asset will need to be depreciated over the lower of the lease term and the life of the asset, which is therefore three years. The depreciation will be charged to profit or loss. Given that the lease commences on 1 January 2021 six months of depreciation will be charged to profit or loss with the effect of reducing profit for the year.

The lease liability will be increased each year by an interest charge based on the interest rate implicit in the lease and then decreased by the payment. This interest charge will also be charged to profit or loss and reflects that fact that leasing is essentially a form of finance. For the year to 30 June 2021 the interest charge will reflect six months.

SECTION 2

Consideration of the three options

The figures in the analysis

Tables 1, 2 and 3 show the expected value of the profit from the new EasiMattress based on a reduction in budgeted selling price of 5%, undertaking a E$120,000 advertising campaign and a 5% increase in budgeted selling price respectively.

Each of these options are expected to change sales volumes. In addition, if volumes increase by more than 10%, fixed costs will also increase. The amount of sales volume change is unknown and so for each action three possible outcomes in respect of the impact on sales volume are considered. For each of these the probability of that outcome happening has also been estimated. For example, Table 1 shows that if budgeted selling price was decreased by 5% there is a 10% probability of a 5% increase in sales volumes, a 30% probability of a 10% increase and a 60% chance of a 15% increase in volume.

The expected value for each option is calculated as the total of the weighted average of all possible outcomes, where the weighting is by probability. This is an estimate of the average outcome on the assumption that this option is repeated.

Standard deviation is a measure of the possible variations of the outcomes from the expected value and is therefore a measure of volatility, an indication of risk. The coefficient of variation is standard deviation divided by expected value for each course of action. This gives the relative size of the risk when compared to the expected return and enables us to compare the risk and return associated with each option.

Decision-making approaches

Using a risk-seeking approach we would select the option which gives us the best result irrespective of the probability of it happening. This is to increase selling prices by 5% because it gives the best budgeted profit of E$521,125. One limitation of using this approach is that it ignores the fact that there is only a 50% chance of this happening and that if this option is chosen there is a 20% chance of making a profit of E$428,375, which is the third lowest possible outcome.

Using a risk-neutral approach, we would select the option with the highest expected value, which is E$488,663, and to increase selling prices. One limitation of using this approach is that it is based on expected value which assumes that this is a decision that will need to be repeated many times, which is not the case as this is a one-off decision.

Using a risk-averse approach, we would select the option which given the same level of return, has the lowest level of risk. Here we would choose the option that has the lowest coefficient of variation because this represents the amount of risk for each E$1 of profit. Here, decreasing selling prices by 5% has the lowest coefficient of variation. One limitation of this approach is that it uses the coefficient of variation, the reliability of which is dependent on the accuracy of the data that it is calculated from. Different estimates for probabilities would change the expected values and therefore the coefficients of variation.

Activity-based costing (ABC)

How an ABC approach will differ from what we do now

Currently we absorb our fixed production overheads on the basis of direct labour hours, using a facility-wide absorption rate. This absorption rate is calculated as the total of the budgeted fixed production overhead for the entire production facility for a year divided by the total of budgeted direct labour hours for the year.

If we were to use ABC, there would be a number of differences to the approach we take now. First, instead of having a single absorption rate, we would identify production activities and have numerous absorption rates based on these activities. With respect to the cutting and quilting together of mattress covers for example, these activities include machinery set-up, fabric and padding roll deliveries, fabric and padding roll loading, running of the machinery and quality checking.

Second, activities that have the same cost driver (which is the activity or action that drives or generates the cost) are grouped together and all the costs associated with those activities are collated into a cost pool. For example, the machinery set-up cost pool would include indirect labour costs associated with the activity and the cost of any consumables such as oil used for the set-up. The cost pool for running the machinery will include depreciation related to the machinery and the energy consumed.

Third, we would not use direct labour hours as the basis for absorbing all of the overhead cost pools. Instead each cost pool would be absorbed on the basis of the relevant cost driver. For example, the cost driver for machinery set-ups could be the number of set-ups because each set-up incurs cost. Using the same logic, the cost driver for deliveries from stores could be the number of deliveries. There are some activities though where labour hours or machine hours are appropriate. For example, the cost of running the machinery is going to be driven by the time taken and so machine hours is the appropriate cost driver here.

Impact on product costs

Assuming that our products use production activities such as machinery set-up or deliveries from stores to differing degrees, the use of ABC will change the amount of fixed production overhead which is assigned to each product. In addition, because of the focus on activities and cost drivers, ABC usually leads to cost reductions as new more cost-effective ways are found to consume resources.

Ignoring any potential cost savings, it is likely that the standard cost of an EasiMattress product will have a higher amount of the fixed production overhead associated with the cutting & quilting process using an ABC approach than it would do using our absorption costing approach. A batch of EasiMattress covers requires three hours of cutting & quilting direct labour compared to two hours for an equivalent sized batch of other mattresses. Therefore, EasiMattress uses 1.5 times more direct labour than other mattresses. EasiMattress also has twice as many raw material deliveries and quality checks than the other mattresses. In addition, machinery time is more than twice as long for a batch of EasiMattress covers than for an equivalently sized batch of other mattress covers. Using ABC therefore would result in more of the overhead associated with the cutting & quilting process being allocated to EasiMattress compared to the other mattresses.

SECTION 3

Direct labour variances for EasiMattress production in February 2021

Covers production

The direct labour rate variance for covers production is adverse which means that on average we paid our direct employees more per hour than the average standard rate. This is likely the result of changing the mix of employees: we had to engage relatively expensive temporary employees to fill the roles of permanent employees who were ill.

The direct labour idle time variance is also adverse, which means that our direct employees were paid for hours where they were unable to be productive. Indeed, for covers production idle time is the largest variance which indicates that the level of idle time was relatively high. This idle time was due to the breakdown of sewing machinery as a result of delayed maintenance and problems with the cutting & quilting machine jamming which resulted in employee down time.

The direct labour efficiency variance is unfortunately also adverse which means that our direct employees took more hours than standard to produce 4,300 mattresses. Given that the mix in the sizes of mattresses was as budget this will be the result of inefficient working. This could possibly have occurred because temporary workers had to be employed who were unfamiliar with the processes. It could also have been related to the issues with the machinery, in that prior to breaking down, the machinery wasn't operating optimally and so employees were taking longer than they should have. Alternatively, it could be the standard is incorrect, given that this is a new range.

Assembly

The direct labour rate variance for assembly is favourable which indicates that the average wage rate was lower than standard. A number of experienced employees left during the month and were replaced by trainees at a lower rate per hour and this will have changed the mix of employees and pulled down the average wage rate.

The direct labour idle time variance is adverse and indicates that there was idle time. However, the level of idle time is significantly lower than for covers production (given that the direct labour input is so much larger for this activity). This isn't surprising given that the assembly department didn't have the same machinery issues. The idle time is probably due to the fact that new trainees employed in the month will have required training, meaning that they were not always being productive.

The direct labour efficiency variance is favourable which means that our direct employees took less time than standard to assemble the 4,300 mattresses. This is perhaps a little surprising given that we know that the mix of employees changed, and skilled workers were replaced by trainees. We would normally expect trainees to work more slowly than skilled workers. This could indicate that the standard is possibly overstated and therefore should be revised. Alternatively, it could be that before leaving the experienced employees were demotivated and not worried about quality. This could have resulted in them working at a faster pace than normal. Another alternative is that the new trainees taken on may have already had some experience and due to good training were able to work more quickly. In both cases it will be important to check that the quality of production was not affected in the month.

KPIs for production supervisors

Three possible KPIs to monitor the performance of production supervisors are:

Direct employee retention rate: One of the main roles of production supervisors is to supervise the work of the direct production employees and to get the best results from those employees. Therefore, production supervisors need to develop good relationships with the workers that they supervise. If there is a low retention rate for direct employees, this could be an indication that this relationship is not good which could have negative impacts on employee morale and the quality of production. Monitoring this KPI for each production supervisor against a predetermined expectation of say 80% or 90% will help to highlight whether there are issues.

Percentage of total direct employee hours recorded as idle time each month: Part of a production supervisor's role is to ensure that the employees they are responsible for work as efficiently as possible and this includes making sure that production equipment is fit for purpose and organising repairs and maintenance where this is required. Direct employee idle time shows a lack of efficiency as it represents time paid for where the employee is being unproductive, which is why this should be monitored.

Percentage of total production that is scrapped each month: Ultimately a production supervisor is responsible for ensuring that the quality of production is as expected because they are situated on the factory floor. If quality of, for example, quilting or mattress assembly is poor, and this is then detected, this would result in scrap which is a cost to the business. We should expect the level of scrapped production to be nil.

Feedback control system

A feedback control system is an integral part of a standard costing system like ours. It involves comparing our actual results against our planned results, investigating differences and then acting on those differences.

The variance reporting that we do is a good example of feedback reporting and is therefore part of our feedback control system. We calculate the variances which reflect the differences between what actually happened and what we expected to happen based on our standards and we then investigate these variances to establish why the variance has occurred. This should then lead to action. It must be noted though that feedback control happens after the event and therefore any action can only affect future performance and cannot change the results of the period under review.

Negative feedback arises where performance is not as good as it should be, which happens when there are adverse variances. Negative feedback should result in corrective action. For example, the adverse idle time variance for covers production is likely to have arisen because of delays in the maintenance of machinery. The action required here is to ensure that the maintenance team do what they need to do when they need to do it.

Positive feedback arises where performance is better than expected and there are favourable variances. Where this is the case, it is important that the reasons for the better performance are identified so that such performance continues in the future. Positive feedback often leads to increasing targets (in our case the standards) to encourage the continuation of this better performance. For example, the favourable efficiency variance for assembly might indicate that less time is required for assembly

than originally thought and so performance is better than we originally thought it might be. As a result, the standard needs to be amended to reflect this and set a meaningful target.

SECTION 4

Linear programming graph

Feasible region and optimal production plan

The feasible region is the area of the graph which includes all of the possible combinations of Deluxe and Regular EasiMattresses given the basic padding and cutting & quilting machine time production constraints and the size of the orders.

Lines A and B on the graph represent the different combinations of production of Deluxe and Regular EasiMattresses which utilise all of the available resource for cutting & quilting machine time and basic padding respectively. These lines therefore represent the maximum that can be produced and form a boundary for the feasible region which will be to the left of these lines as, given the constraints, it is impossible to produce above the line.

Lines C and D on the graph are the demand constraints and represent the total number of mattresses required to satisfy each order. Line C relates to the Deluxe mattress and line D the Regular mattress. The feasible region will be to the left of line C and underneath line D.

The feasible region is the area of the graph which starts at the origin and is contained by lines D, B, A and C. The optimal production plan can be found by moving the iso-contribution line (the dotted line which represents the relative contributions of each type of mattress) until it reaches the furthest point from the origin that is still within the feasible region: this is where lines C and A intersect. Therefore, the optimal production plan is to produce 700 Deluxe mattresses and approximately 200 of the Regular mattresses.

Factors to consider

The factors to consider before proceeding with the production plan are as follows:

- The optimal solution allows both orders to be fully satisfied for Deluxe mattresses, but because only 200 Regular can be produced, we would need to decide which customer to send these to. The Gold hotel chain has asked for 200 Regular and therefore we could fully satisfy this order or we could send each customer 100 which leaves both of the orders unsatisfied but does at least give both companies a chance to look at the quality. We would need to consider what the two customers might prefer. Indeed, it's possible that they would prefer to receive all of the Regular rather than all of the Deluxe, in which case, we would need to amend the production plan. Satisfying the full demand from these customers for Regular mattresses would mean that we would not optimise profit in the period but we should consider the benefits of future orders.
- The optimal solution is based on maximising profits based on the constraints and takes a short-term view of the decision. Both of these customers have indicated that there could be future lucrative orders and therefore it might be better to ensure that these orders are both fully satisfied at this stage. Maybe we could delay some of our normal production or buy in additional machine hours by hiring equipment and using a different type of basic padding or even substituting basic padding for deluxe padding. We would need to weigh up the cost of doing this

against the additional contribution from the contracts by being able to fully satisfy them, but also the potential for increased sales and contribution in the future.

- Are the amount of resources available known with accuracy? Whilst we can probably be sure about the amount of basic padding available because it will be in inventory or available for order, we need to be more cautious about machine hours. If the machinery breaks down it is possible that we have even fewer hours available than we thought.

Economic Order Quantity (EOQ) model

The EOQ model and the information required to calculate EOQ

The key principle underpinning the EOQ model is to minimise the total of inventory holding costs and inventory ordering costs. The optimal order quantity is the order quantity size which would achieve this. If this model were adopted, we would, for each type of fabric and padding, order the same quantity (the EOQ) each time at regular intervals throughout the year.

For each type of fabric and padding used we will need to establish:

- Annual demand for each type which will depend on the level of anticipated production for our mattresses.
- The cost of placing an order for each type of material. This will include the cost of the time taken by the Purchasing Department, internal administrative costs and any goods in delivery costs.
- The cost of holding one unit of inventory for one year. Holding costs will include insurance, storage costs (such as energy used in the warehouse, employee training costs for safe handling, handling employee time) and the finance cost associated with the investment in working capital.

The appropriateness of the EOQ assumptions and adaptations to the model

The appropriateness of the EOQ assumptions for our business are as follows:

- The model assumes that annual demand for each type of fabric and padding can be determined with a reasonable level of certainty and that this demand is constant throughout the year. This is unrealistic because whilst perhaps there is some degree of certainty for demand of our sprung and hybrid mattresses, the EasiMattress range is new and growing in popularity.
- It is assumed that the lead time is constant or zero. However, as demonstrated recently lead times have been varying.
- It is also assumed that purchase costs are constant with no bulk discounts. However, we do have bulk discounts available for covering fabric.
- It is also assumed that holding costs are variable with the level of inventory held. This is difficult to justify because in reality a significant portion of holding costs, such as the costs of operating the warehouse, are fixed in nature.

To deal with some of these issues the following adaptions can be made to the model:

- Both uncertainty in demand and variable lead times can be adjusted for in the EOQ model by setting a safety or buffer level of inventory. This increases overall holding costs but allows flexibility to schedule production where demand is higher than expected or where lead times are longer than expected. The downside though of holding safety inventory is that the risk of damaging the fabric and padding in the warehouse increases.
- The issue of the constant purchase price can be dealt with by expanding the analysis to consider the inventory level that minimises the total of holding, ordering and net of discount purchase costs.

OPERATIONAL CASE STUDY NOVEMBER 2020 & FEBRUARY 2021 EXAM ANSWERS

Variant 4

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SECTION 1

Sales volume forecasting

How we would determine the trend line and seasonal variations from the graph

Using linear regression analysis, we could establish the underlying trend which is predicted to continue into the future. Linear regression uses all the data points in the graph and mathematical formulae to establish the linear relationship between the variables. Linear regression analysis would enable us to determine a "line of best fit" with the linear equation:
$y = a + bx$

Based on the graph provided, it appears that the previous product launch showed growth in the underlying trend. It would however be important to remove any unusual factors from the history, such as previous advertising campaigns, in order to establish an accurate trend.

We can then identify whether there are any seasonal variations around the trend. Seasonal variations can be estimated by comparing the actual time series with the trend line calculated from the time series. For each "season", the seasonal variation is the difference between the trend line value and the actual historical value for the same period.

Forecasting sales volumes of eco mattresses

Using information from the original trend line for hybrid mattresses, we can then formulate a new trend line for eco mattresses. We can forecast the sales in units for the eco mattresses using the regression equation $y = a + bx$, where y is the forecast sales volume; a is the sales in the first period which will be at a starting point somewhere on the original trend line; b is the constant amount that sales increase or decrease by each quarter from the original trendline and x is the period number. Quarter 1 of 2021 would be period 1 for the new eco mattresses.

The seasonal variations would either be added or subtracted from the trend line forecast. We can see from the graph that the sales pattern is fairly consistent over the four quarters. Sales demand is higher in the first and fourth quarters of the year and lower in the second and third quarters. This is as expected as consumers are more likely to focus on changing furnishings during the winter months. Therefore, the seasonal variations for the first and fourth quarters would be added to the trend line forecast and the seasonal variations for the second and third quarters would be subtracted from the trend line forecast.

We would also need to adjust the trend for any cyclical variations however these are less likely to affect a forecast over a short time period. The total forecast is then calculated by combining trend, seasonal variation and cyclical factors.

Limitations of this approach

There are a number of limitations to this type of approach. Firstly, linear regression only measures the relationship between two variables and assumes that the relationship between the variables is linear. In reality, there will be a number of variables that will determine sales volumes, for example, lifestyle changes or trends.

We would also need to consider whether the past is a good indicator of the future. The market for products using recycled materials is growing at a significantly high rate and we would need to consider whether the past growth rate of the hybrid mattresses is a good indicator of the future growth rate of the new mattress range.

It may be that our assumptions are too simplistic as the graph depicts sales of hybrid mattresses whereas our new product range is aimed at a specific market segment. It would also be helpful if we could obtain further data giving sales volume for different mattress sizes and the monthly volumes. We want to determine the monthly sales volume for each of the mattress sizes within the new range and the graph only gives us total data for quarterly periods.

Correlation co-efficient and the co-efficient of determination

Regression analysis attempts to find the linear relationship between two variables in this case, time and sales volume. Correlation is concerned with establishing how strong the relationship is. The correlation coefficient (r) is a figure between -1 and +1. A value for r of 1 would indicate that there is perfect positive correlation and -1 means that there is perfect negative correlation. Where there is positive correlation, high (or low) values of one variable are associated with high (or low) values of the other variable. Where there is negative correlation, the low values of one variable are associated with high values of the other variable and vice versa.

The co-efficient of determination (r^2) measures how good the estimated regression equation is. The higher the value of r squared, the more confidence we can have in the equation. The co-efficient of determination represents the proportion of the total variation in the y variable that can be explained by the regression equation. In this case, the proportion of the total variation in sales volume that can be explained by time.

It would be useful to calculate these as it would allow us to understand how reliable the regression equation is and whether it would be appropriate to base our sales budget on this equation. However, whilst these figures would provide us with an indication of the reliability of the trend line for hybrid mattresses, they do not indicate whether the trend

line for hybrid mattresses would be an appropriate proxy for the new range of recycled mattresses.

Evaluation of potential supplier

Working capital position and risks

Eco Material's working capital cycle in 2018 was reasonably consistent with that of the industry as a whole, however since 2018 it has shown a deteriorating position. In 2020, the working capital cycle has reduced to four days which is very concerning and raises a question about its ability to trade effectively.

Inventory days have significantly reduced in 2020 to 21 days compared to the industry average of 33 days. The reduction in inventory days may be partly due to Eco Material's rapid growth in revenue. It also may be due to Eco Material having better inventory management. However, given that the materials do not deteriorate quickly, there is no need to hold such low inventory levels for obsolescence reasons. The other more concerning reason may be that Eco Material is not able to purchase enough raw material inventory from its supplier given the high trade payable days.

The inventory day position presents a risk that Eco Materials will not be able to supply us with all of the materials that we need at any one time. Its inventory levels are relatively low which means that the risk of it not being able to meet orders or delaying delivery is quite high.

Receivable days have increased over the three year period and in 2020 are considerably higher than the industry average. Eco Material offers standard credit terms of 30 days to its credit customers and therefore it would appear that it is not as efficient at credit control as it should be. There has been significant growth in revenue over the same period and therefore it is possible that extended credit terms have been offered to attract new business which will have increased receivable days. Whilst we might be able to benefit from this, it raises concern about the supplier's ability to continue trading if it is not able to pay its suppliers or other payables on time.

Payable days have also grown over the three year period, which could be a symptom of overtrading. Eco Materials may have been unable to pay its suppliers in line with its credit terms given its poor working capital position. This presents a significant risk that suppliers may no longer trade with the company and potentially may force the company into liquidation.

Overall, there are indications that this business is overtrading: significant and quick growth in revenue; paying suppliers late and a worsening of credit control. The business appears not to have had enough resources to manage the rapid growth and as a consequence cash flow has suffered.

The risk associated with this is that, unless Eco Material is able to secure finance to support its cash flow position, it might not be able to continue to trade as it will be unable to meet its liabilities. Clearly, this could have serious consequences for our business if we become reliant on this supplier.

SECTION 2

Profit volume chart

Explanation of the chart

The line on the chart shows the profit that will be earned at different levels of sales volume. Profit is based on the weighted average contribution at different sales levels assuming that the expected mix of different mattress types and sizes remains constant.

The point at which the line intercepts the Y axis is the total fixed costs which, in this case, are approximately E$240,000.

The point where the line crosses the 0 line on the Y axis is the break-even point. Based on the weighted average contribution to sales ratio we can see that in order to break even we would need to achieve sales volumes of approximately 20,000 units.

The chart gives us an idea of the sales level required to cover our fixed costs. By knowing the break-even position, it helps to understand the margin of safety that we have from the forecast or budgeted figures. The margin of safety is the amount by which volume can fall from the expected revenue before a loss is made. The margin of safety is usually measured as a percentage. The expected volume is 22,000 units and therefore we have a margin of safety of approximately 2,000 units or around 9% before we would make a loss.

This is a new market for us and the estimates may be over optimistic therefore this does not appear to be a particularly significant margin of safety. A change in our assumptions regarding fixed or variable costs will result in a change in the break-even point and margin of safety. If costs increased, the break-even point would increase and the margin of safety would reduce. Similarly, if our estimated sales volume was reduced, the margin of safety would reduce. We could carry out a sensitivity analysis to identify by how much each of the variables could change before we would make a loss.

Why the data used to construct the profit/volume chart will limit its usefulness

The chart has been constructed on the basis of a constant sales mix of size and type of mattress but it is unlikely that we will sell the service at a constant sales mix. Whilst it is based on a set selling price of E$25, we know that the costs will differ between mattress sizes and types. The weighted average contribution line assumes that the service will be sold in a certain mix. However, there is a risk that the weighted average contribution to sales ratio will be lower and therefore the break-even point will be higher, if we sell in a different mix. Similarly, the income we expect to receive from the recycling companies will depend on the mix of material available for recycling.

The figures used are estimates only and assume a linear relationship over the whole range of the service. The analysis also assumes that we can define costs as fixed or variable. In reality all costs are variable in the long term and in the short term many costs that we think of as variable are fixed, for example, labour costs.

Additionally, the fixed costs included in the chart represent only the specific fixed costs associated with the new service. We would however expect our products and services to also contribute to the general fixed costs. If the new service was allocated a share of

general fixed overhead costs, the break-even point would increase and the margin of safety would fall.

Cost of the recycling service

Drivers of the process costs

Disassemble mattress:

The main cost of disassembling will be the labour cost which will be driven by the variety and complexity of the mattresses. The time taken for different types and sizes of mattresses will differ. For example, sprung mattresses may take longer to disassemble than foam mattresses because of the need to detach the springs. The time taken to disassemble a king size mattress will be longer than the time taken to disassemble a single mattress.

The cost of tools will be dependent on the number of mattresses disassembled.

Compacting of materials:

The main costs associated with compacting the materials are the depreciation of the compacting machine and the labour costs for the compacting staff. The cost driver for depreciation will be the machine hours used for compacting. For labour costs, the cost driver will be the variety of material required to be compacted. Different materials will take different amounts of time to compact into bales, for example, the springs for a sprung mattress may take more time to compact than the padding from a foam mattress and therefore will incur different costs.

Delivery of recycled materials to recycling facilities:

The running costs for the delivery vehicle will be dependent on the number of delivery loads and distance travelled. The amounts of bales that can be carried in each delivery vehicle load will be dependent on the weight of the bales. The labour costs of the delivery staff will be driven by the time taken to travel to the recycling facilities, offload the bales and return to the Eastland production facility.

Usefulness of accurate costing

It is clear from the above that different sizes and types of mattress incur different costs. If we are able to establish a more accurate cost for each mattress we will be able to price the service accordingly.

It would also be helpful for planning and control purposes if we had more accurate costs. We would be able to establish a more realistic budget and it would be easier to identify the reasons for any variances from budget.

However, the SMT has decided to launch this service to improve its record on sustainability and may therefore not be concerned about the cost of individual mattress types or ensuring that the price of the service covers the costs of providing the service. It may decide to price the service to ensure that as many people as possible choose to use the recycling service.

SECTION 3

Leasing – IFRS 16

Lease liability:
Under *IFRS 16 Leases*, the lease liability is initially measured at the present value of the lease payments that have not yet been paid. This includes the fixed payments over the lease term and any other amounts expected to be payable such as: amounts payable under residual value guarantees, the cost of options to purchase the asset and any termination penalties. The discount rate used to calculate the present value should be the rate implicit in the lease or if this is not available, the entity's incremental borrowing rate. In this case, therefore, it will initially be measured at the present value of the lease liability of E$122,895.

At 30 June 2021, the lease liability will be shown in the statement of financial position. The value of the liability will be the initial amount of E$122,895 plus four months interest for March to June 2021. The value of the liability will be split into a current liability, the amount of the liability that is related to the next 12 months and a non-current liability.

In subsequent years, the carrying amount of the lease liability is increased by the interest charge. Interest is also recorded in the statement of profit or loss. The carrying amount of the lease liability is reduced by cash repayments each year of E$37,105.

The right-of-use asset:
Under *IFRS 16 Leases*, the right-of-use asset is initially recognised at cost. The initial cost of the right-of-use asset comprises: the amount of the initial measurement of the lease liability; lease payments made at or before the commencement date; any initial direct costs and the estimated costs of removing or dismantling the asset.

The right-of-use asset will therefore be initially recorded at the present value of the lease payments of E$122,895 plus the lease payment made in advance of E$37,105 plus the lease arrangement fee of E$4,000.

In the 31 June 2021 financial statements, the value of the right of use asset will be measured at its initial cost less accumulated depreciation and impairment losses. In this case, as ownership does not transfer to the lessee (AmaZZZing Beds), depreciation will be charged to the statement of profit or loss over the shorter of the useful life and the lease term. This is therefore the lease term of five years. The depreciation charge for the first year will be for four months from March to June 2021 and will therefore be:

((E$122,895 + E$37,105 + E$4,000) / 5) /12 * 4
In subsequent years the depreciation charge will be:

(E$122,895 + E$37,105 + E$4,000) / 5
which will be deducted from the carrying amount of the right-of-use asset.

Selecting a marketing package

Explanation of the figures and use of expected value

The expected value has been calculated for each package and represents the weighted average of all the possible outcomes weighted by their probability.

The standard deviation for each package is a measure of the variations of the outcomes from the expected value and is therefore an indication of risk. The coefficient of variation for each package is its standard deviation divided by its expected value. The co-efficient of variation allows the risk of each package to be compared.

If we were to make the decision based on expected value, we would choose Package C as this has the highest expected value of additional contribution. However, the use of expected value has a number of limitations. Expected value gives no indication of the range of possible outcomes i.e. the risk. Whilst Package C has the highest expected value it also has the highest standard deviation. This means that Package C has the widest range of possible outcomes. The expected value is the long run average outcome if the same event was repeated over and over again. Therefore, using expected values in “one-off” decisions such as this decision, is inappropriate as it is simply a weighted average. It should also be borne in mind that the probabilities used in the calculation of the expected value of each of the three packages might be very subjective, despite the involvement of the market research company.

Risk attitudes

If we were to take a risk-seeking approach to the decision, we would be interested in the highest possible outcome, no matter how small the likelihood that that would occur. Without the details of the possible outcomes for each package, it is impossible to tell which package has the highest possible outcome. It is likely however that Package C will have the highest possible outcome given that it has the largest expected value and standard deviation.

A risk-averse decision maker would choose the package which, given the same level of return, has the lowest level of risk. Such a decision maker would choose the package with the lowest coefficient of variation because this is a measure of risk for each E$1 of expected return. A risk-averse decision maker would therefore choose Package A.

SECTION 4

Sales variance report for recycled mattresses January–March 2021

Sales price variance
The sales price variance is calculated as actual selling price less budgeted selling price multiplied by the actual sales volume. The adverse sales price variance is due to reducing the selling price of single and double mattresses in response to the sale by the liquidator and reducing prices across the range in February.

Sales quantity profit variance
The sales quantity variance is calculated as the difference between the actual sales volume at budgeted mix and the budgeted sales volume, multiplied by the standard profit per unit. The total sales quantity variance is adverse since overall we sold 90 less units than budget. The discounts we offered in February and the marketing campaign were not sufficient to offset the effect of the low price sale by the liquidator and the price promotion by the competitor retailer. It is assumed that the competitor retailer also provides a range of mattresses made from recycled materials. However, if this is not the case, then the impact on our sales volume would be less than it might have been otherwise. Actual sales for both single and double mattresses were below budget however king size mattress sales were above budget. King size mattresses would not have been affected by the low price sale by the liquidator.

Sales mix profit variance
The sales mix profit variance is calculated as the difference between actual sales at the budgeted mix and actual sales at the actual mix, multiplied by the standard profit per unit. The mix variance is slightly favourable overall.

There is one main factor that will have contributed to the change in mix. The low price sale by the liquidator only affected single and double mattresses, therefore we would expect to see a lower proportion of sales of these and a higher proportion of sales of king size mattresses. However as discussed above, the quantity variance showed that the king size mattress performed above budget which may suggest that the budgeted mix was inaccurate and that we do not have a clear understanding of customer preferences. This is a completely new market segment for us and our knowledge of the market may be limited.

Planning and operational variances
Standards are normally based on the anticipated environment. If the environment is significantly different from the expected environment, actual performance should be compared with a standard that takes account of these changed conditions. This would provide a more meaningful measure of managerial performance. This is particularly important if performance is linked to pay and rewards.

It could be argued for example, that the impact of the discounting on the new mattress range should be shown separately as a planning variance. The standard selling price should have been based on the average discounted price and not the normal selling price. Similarly, the liquidation sale could not have been anticipated when the budget was set. It would not be appropriate however to separate the price variance in isolation since a reduction or increase in price would be expected to have an impact on the sales volume and mix. Therefore, splitting the price variance into planning and operational variances would also involve splitting the mix and quantity variances.

It is arguable though that it is part of the sales manager's job to effective respond to discounting by competitors particularly since discounting is common in this industry. It is not clear who has control of the pricing of the products but if the pricing decision was not within the control of the operational managers then the price variance should be shown separately as a planning variance.

Planning variances may not be controllable, however, they do provide some useful information for managers on the accuracy of their planning and could help to improve the accuracy of future plans. As this is a new market, it is difficult to set the budget without a detailed knowledge of customer preferences. It may be that the sales volumes and mix used in the budget were inaccurate and therefore at least some of the variance should be treated as a planning variance as it is outside the control of the operational managers.

Operational variances are considered to be controllable and so they provide a better measure of the operating efficiency. If we are trying to assess the performance of the sales or marketing managers, it would be better to separate out the planning variances from the operational variances. Failure to separate the variance may result in demotivation of the managers if they are being held responsible for variance that they cannot control.

Key performance indicators

% of recycled material used in the month: this can be calculated by dividing the cost of recycled material used in the month by the total cost of materials used in the month. A key factor in sustainability is to ensure that our actions are not harmful to the environment and that we do not deplete natural resources. Many of our products are made from natural resources such as wood and cotton. It is therefore important that we strive to use as much recycled material in the production of our products as possible, to lower the impact that our products have on the environment.

% of products recycled in the month: this can be calculated by dividing the total number of mattresses which we disassemble for recycling in the month by the total number of mattresses sold in the month. At present it is believed that the mattress recycling rate in Eastland is as low as 20%. We should strive to encourage our customers to recycle our products at the end of the product's life. At the moment we offer a mattress recycling service but this could in the future be extended to cover our beds. We should also strive to use parts in the manufacture of our products that are capable of being recycled / re-used at the end of the product's life.

% of waste recycled in the month: this can be calculated by dividing the volume of waste recycled in the month by the total volume of waste created in the month. An aim of environmental management and sustainability is to achieve zero waste. Our manufacturing process creates waste materials and our aim should be to recycle, reuse or convert to energy all waste from daily operations.

A number of manufacturers have achieved 100% landfill-free status for their manufacturing plants and we should aim to achieve the same objective.

OPERATIONAL CASE STUDY NOVEMBER 2020 & FEBRUARY 2021 EXAM ANSWERS

Variant 5

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SECTION 1

Determining the unit cost of the app and the difficulties involved

In order to determine the unit cost of the app we need to establish the costs that have already been incurred in its development and the future ongoing maintenance costs which will be incurred throughout its life. The development costs have already been incurred but it may be difficult to determine the ongoing maintenance costs as we have never developed and operated an app before.

The development costs of the app will initially be capitalised and then amortised over the life of the app. The development cost per unit will be the total cost capitalised divided by the estimated sales volume over the lifetime of the app. In order to estimate the sales volume, we will need to have a good knowledge of the market and an understanding of how future technologies could potentially affect the app. Changes in technology and our responses to these changes will impact the lifespan of the app.

For each of the ongoing maintenance costs we need to identify the amount and frequency of the costs. We then need to establish whether the cost is fixed or variable – the variable costs can be added to the unit cost of the app. The fixed costs will need to be divided by the sales volume of the app in order to determine a unit cost.

We also need to establish whether the cost is direct or indirect. Some of the ongoing maintenance costs will be direct costs of the app however other costs will be indirect and a method will need to be established to share the indirect costs with other services and potentially in the future between apps.

The functional service costs, infrastructure costs and administrative and technical support service costs will represent the ongoing maintenance cost of the app. The functional service costs will be a mixture of fixed and variable costs. We will need to establish the amount of the variable cost per user and the amount and frequency of the fixed costs and divide these by the estimated sales volume for the year in order to calculate the cost per unit.

The infrastructure costs will be mainly fixed and will be shared by our other IT services. A mechanism for sharing these costs between the different services will need to be established.

The administrative services and technical support services will be incurred in-house. This will require us to estimate the likelihood and extent of occurrence and the time involved in carrying out each task. For example, we will need to estimate how often we will need to carry out iOS and Android updates or updates to APIs. Once we have established the time involved in each of these tasks we can work out total staff costs which can be divided by the sales volume to establish a cost per unit.

According to the table, general administration, selling and distribution overhead costs will be shared out on the basis of revenue which is a fairly arbitrary approach. It may also be difficult to separate the revenue for the app from the revenue for the bed. Additionally, by its nature, the app does not incur any distribution overheads therefore allocating a share of the distribution costs to the app would be inappropriate.

We currently only have this one app however as digitisation grows throughout the industry, it is likely that we will develop further apps. Ongoing maintenance costs will be incurred on features or updates that are common to all apps and an appropriate method will need to be determined to share the costs between the apps. Similarly, whilst most of the design and development costs will be specific to an individual app, there may be elements which are shareable with other apps and a method of allocating these costs to the individual apps will be required.

Linear programming graph

Explanation of the graph and the optimum production plan

The linear programming graph shows the current situation in terms of available resources. The X axis depicts demand for our existing range of beds and the Y axis is demand for our range of smart beds.

We can determine the feasible region, which is the area within which all the possible combinations of output are contained, from the graph. We can see that the feasible region is the area to the left of the demand for our existing range and below the demand for our range of smart beds. The constraint lines represent the maximum that can be produced and form a boundary for the feasible region which will be to the left of these lines as, given the constraints, it is impossible to produce above the line. The feasible region is therefore bounded by the two constraints for demand and the cutting machine hours constraint. Labour hours are not currently a binding constraint.

The ISO-contribution line represents the contribution that can be earned from all the possible combinations of the existing range and range of smart beds. If this line is moved as far to the right as possible whilst still remaining within the feasible region it will indicate the maximum contribution that can be earned. The furthest point within this area is the point where the cutting machine constraint line and demand line of the smart bed range intersect. This is the point that will maximise contribution. The optimum production plan can be read from the graph as approximately 22,800 units of X (the existing range of beds) and 6,000 units of Y (the range of smart beds).

Overcoming the binding capacity constraint and maximum price to pay for further resources

The graph shows that the binding constraint is the cutting machine hours. In the medium term, we can overcome the shortage of machine hours by improving working practices, for example, by the introduction of TQM. In the shorter-term however we need to look at other options. We could consider outsourcing the production to an external supplier. Depending on the price and other contractual arrangements offered by the supplier this may be a viable option. Alternatively, we could consider hiring new machinery on a short-term basis.

The maximum amount we should pay for additional resources is represented by the shadow price plus the normal price of the resource. Where there is slack, for example on labour hours, the shadow price is zero. Where the resource is a binding constraint, such as the cutting machine hours, we can calculate the shadow price as the additional contribution we will earn by changing the production plan due to having one more cutting hour available. The maximum to pay for cutting machine hours is the normal price plus the additional contribution earned by increasing the cutting machine hours by one hour. If we pay the maximum amount, the total contribution will be unchanged; we are neither better nor worse off from making the additional volume. If we pay less than the maximum, the total contribution will increase. The shadow price is only valid for a limited range as it will change when other slack resources also become binding.

SECTION 2

Relevant costs of the government contract

Relevant costs

In order to determine whether to accept the contract we need to consider the relevant costs of the contract. The relevant costs are the future, incremental cashflows which arise as a result of accepting the contract. Any costs which have already been incurred will not be relevant and should not be included.

1. The cost of the components and raw materials which will be bought specifically for the contract is relevant as it arises as a result of accepting the contract. The relevant cost of the materials that are in continual use, should be based on the higher replacement cost of E$215,000 since as a result of using them in the contract, they would need to be replaced in order to be used elsewhere in the business.
2. As there is limited direct labour capacity, the contract will require additional overtime working. The cost of this overtime, including the 50% premium above the normal rate, is relevant. 70% of the production for the contract can be done within normal paid working hours and this element is not therefore a relevant cost.
3. Production overheads in the schedule include both a fixed and a variable element, which are absorbed on the basis of labour hours. The fixed element is not incremental and is therefore irrelevant. Variable overheads however are expected to change as a result of the decision to accept the contract and therefore any incremental variable overhead costs incurred are relevant. The variable overhead absorption rate is considered a reasonable estimation of the additional cash flows which will arise for variable overhead costs as a result of accepting the contract. The absorbed variable overheads are therefore relevant.
4. The development cost has already been incurred and is a sunk cost and not relevant. The amortisation cost is not a cash flow and therefore irrelevant. The ongoing maintenance cost of the app will consist of a variable cost element and a fixed cost element. The variable costs are future cash flows and are therefore relevant. The fixed cost element will be irrelevant since it can be assumed that total fixed costs will remain the same even if the contract is accepted. The only fixed costs which would be relevant would be any incremental fixed costs arising as a result of accepting the contract.
5. The share of non-production overhead costs is an arbitrary apportionment and therefore not relevant. The only relevant costs would be any specific incremental costs directly relating to the contract.

Two factors to be considered

- It is possible that the contract may be renewed at the end of the first year which could result in significant further business. Contracts with the government can be particularly lucrative due to the potential volumes involved. The fact that we are supplying the government with beds is a potential marketing opportunity for us as customer perception of our quality and reliability may be improved. It may also provide a springboard for us to supply other corporate customers, such as hotels.
- There are some long term implications of charging a low price for this contract as it would be difficult to raise prices significantly at a later stage to incorporate fixed costs. In the longer term, we would expect all of our products to cover a share of fixed costs therefore a relevant cost basis may be unsuitable to set the price for the contract.

Factoring of accounts receivable

Calculating the net cost of factoring

There are a number of cost elements associated with the factoring agreement. The arrangement requires us to pay 2.5% of our sales value as an administration fee. This will effectively reduce our profit margin by 2.5%. In addition, we will need to pay finance charges on the 80% of sales value which is paid in advance at 10% per annum. The interest charge will be for the period from the date payment is received from the factoring company until the date payment is made to the factoring company by the customer. We can therefore calculate the finance charge as:
((80% of the sales value x 10%) x number of days the payment is received in advance / 365)

However, the arrangement means that we will receive 80% of the sales value immediately. This will mean that we will receive cash more quickly than without the factoring arrangement. The cash will be available to invest in other areas of the business rather than being tied up in accounts receivable. We can calculate the implicit interest benefit of the factoring as:
((80% of the sales value x our normal annual interest rate %) x number of days the payment is received in advance / 365)

Advantages of the factoring arrangement

A major benefit of this arrangement is that we avoid the cost of setting up a sales ledger and credit control department. This cost may be onerous since the majority of the costs will be fixed and for a relatively small volume of customers and invoices, therefore the unit cost is likely to be high. This option may be more appropriate in the future, if we decide to expand our sales to other corporate customers.

The factoring is non-recourse which means that the factor will bear the cost of any irrecoverable debts. This is effectively a form of insurance against any of our customers not paying us. We will consequently not incur any losses in respect of non-payment. However, the customers will be government owned and funded by taxation so there should be little, if any, default.

In addition, the arrangement means that we will receive 80% of the sales value immediately. This will mean that we will receive cash more quickly than without the factoring arrangement thus improving our cash flow.

Another benefit is that the factor will be an expert in credit control and will be efficient at sending out invoices and managing the receivables ledger. This is potentially very beneficial for us as a newly set-up sales ledger and credit control department is likely to be much less efficient.

Disadvantages of the factoring arrangement

The biggest disadvantage associated with the factoring arrangement is its cost. The interest rate is likely to be higher than the rate that we would pay on, for example, a bank loan. Factoring is generally accepted to be an expensive form of finance.

Another disadvantage of non-recourse factoring is that we lose control of our receivables ledger. The factor will decide whether to offer credit to new customers and will apply its own policies regarding debt collection. It is likely that a factor will be reasonably aggressive when chasing for payment of outstanding debts, which may not go down well with our customers. It will also mean that our customers will know that we are using a

factor because correspondence will be from the factor. This could have an impact on our reputation within the market, as the fact we are using a factor could be seen as a sign that we have cash flow issues. Similarly, the relationship with our customers could be damaged if they do not continue to have direct contact with us regarding payment.

SECTION 3

Inventory adjustments

IAS2 Inventories requires that we value inventory at the lower of cost and net realisable value (NRV). Cost should include all costs of purchase (including taxes, transport and handling) net of trade discounts received plus costs of conversion (including labour, a share of fixed production overheads and variable production overheads) plus other costs incurred in bringing the inventories to their present location and condition. NRV is the estimated selling price in the ordinary course of business, less the estimated cost of completion and the estimated costs necessary to make the sale.

The cost of dismantling and repairing the recalled inventory, would be added to the original cost of the inventory. This would include any additional material and conversion costs. The wasted materials/parts would be valued at their net realisable value which may be nil or if they can be sold for scrap, at the scrap value.

If we selected the brand clearance outlet, we should be able to sell the inventory above cost price but this may be marginal and we would also have incurred the cost of delivery to the outlet. Therefore, NRV is reduced by the cost of delivery which could push this value below cost. In this case, we would be obliged to make an adjustment to lower the carrying amount of the inventory, even if it has not already been delivered but the sale has been agreed.

If we opted for the price reduction in store, we could expect to receive more income than the brand clearance option. This suggests that NRV, whilst lower than previously anticipated, would exceed the cost and no adjustment would be required.

The impact on the sales of the new model, whilst relevant to any decision, would not affect the inventory valuation.

Impact on profit and cash flows

Any write-down to NRV should be recognised as an expense in the period in which the write-down occurs. The write-down would reduce the value of inventory in the statement of financial position and correspondingly increase the cost of sales thus lowering profits. Cash flow is unaffected by the write-down as there has been no cash transactions and the write-down will therefore just require a journal entry in the nominal ledger.

What-if analysis

Explanation of figures in schedule

The spreadsheet shows the impact on profit of different combinations of selling price, variable costs and sales volume. We can use the spreadsheet to try to assess the impact on profit of changes to these variables. For example, our original budgeted profit was E$321,000 and we can see from the spreadsheet that if sales volumes turn out to be less than 3,000 units that we will not achieve the budgeted profit. It is clear from the spreadsheet that our break-even point in terms of sales volume is somewhere between 2,600 and 2,800 units. Also, we can tell that at the budgeted sales volumes we will make a loss if the selling price is reduced to E$2,200 and variable costs increase to E$1,144.

If we were able to establish the price/volume relationship we could determine the potential profit. We have estimated for the budget that sales volumes would be 3,000 units at a selling price of E$2,300. In view of the problems with the quality failure we might want to revise this starting point to say, for example, that at a selling price of E$2,300 sales volumes would be 2,800 units and profit would be E$79,800. If we knew that sales volumes would increase by 200 units for every reduction of E$100 in selling price, we can determine the revised profit figures for a combination of selling price of E$2,200 and sales volume of 3,000 units. It is clear from the spreadsheet that this combination of variables would result in a lower profit than the original estimate. In contrast, if we knew that sales volumes would increase by 400 units for every reduction of E$100 in selling price, a combination of sales volume of 3,200 and selling price of E$2,200 would result in a higher profit where variable costs are either E$1,094 or E$1,144.

It is clear from the what-if analysis that only 10 of the 36 combinations of selling price, variable costs and sales volume results in a profit. The what-if analysis fails to quantify the likelihood of the different outcomes occurring therefore management are unable to assess the risk of making a loss.

Applying probability analysis to the figures

We could determine the probabilities of each of the variable costs and of the sales volumes at different selling prices. We can then calculate the joint probabilities by multiplying the probability of, for example, a variable cost of E$1,144 and the probability of sales volume of 2,800 units at a selling price of E$2,200. The twelve possible joint probabilities can then be multiplied by the profit outcome and the individual amounts added to calculate the expected value (EV) at a selling price of E$2,200. We can then compare the EVs at different selling prices and make a decision based on expected value.

We could also produce a probability distribution at each selling price and use this to determine the likelihood of different profit levels or profit being above or below a certain level. We would also be able to determine the probability of making a loss at each selling price. This would give us an indication of the risk involved.

We would also be able to use the probabilities to calculate the standard deviation and the co-efficient of variation for each selling price. This would enable us to assess the risk of setting the selling prices at different levels.

However, this analysis is very dependent on the accuracy of the probabilities and, as this is a new market for us, these may be difficult to determine without expert advice.

SECTION 4

Planning and operational variances

Standards are normally based on the anticipated environment. If the environment is significantly different from the expected environment, actual performance should be compared with a standard that takes account of these changed conditions. This would provide a more meaningful measure of managerial performance. This is particularly important if performance is linked to pay and rewards.

Planning variances represent the difference between the original standard and the revised standard. Whilst planning variances may not be controllable, they do provide some useful information for managers on the accuracy of their planning and could help to improve the accuracy of future plans. Setting standards for a new product can be difficult and it is likely that some of the standards used in the budget will have been inaccurate and therefore at least some of each of the variances should be treated as a planning variance as it is outside the control of the operational managers.

In this case, it has been necessary, due to the quality failures, to change the materials and the processes used to manufacture the product. The changes to the quality of the wood and the adjustment mechanism for the bed base has resulted in an increase in the price of materials and the quantity of labour hours required. If the standards were not revised to reflect these changes then we would regularly be reporting adverse material price variances and labour efficiency variances and be unable to identify the extent of any operational inefficiencies.

Operational variances represent the difference between the actual result and the revised standard. They are considered to be controllable and so they provide a better measure of the operating efficiency. If we are trying to assess the performance of the production managers, it would be better to separate out the planning variances from the operational variances.

Key Performance Indicators (KPIs)

Benefits of a KPI dashboard

Data visualisation allows large volumes of complex data to be displayed in a visually appealing and accessible way that facilitates the understanding and use of the underlying data. Traditional spreadsheets and financial reports can be both difficult to understand and unappealing to look at. The use of graphics in a KPI dashboard is more user friendly and intuitive.

The KPI dashboard displays the key performance indicators of the business in a real-time format, thus allowing immediate understanding of current performance and potentially prompting action to correct or amend performance accordingly. Synchronising real-time data with data visualisation tools gives live up-to-date numbers in a clear, informative style. This allows a quicker response to business changes rather than waiting for weekly or monthly reports.

The immediacy and clarity of the information being displayed supports better decision making and proactive, efficient utilisation of resources as problems are identified promptly. Combining data and visualising it in this way can lead to improved

understanding and fresh insights about the cause and effect relationships that underpin performance.

The use of this technology will also free up the resources of our Finance Department staff who can now place greater focus on the “advising” and “applying/executing” activities.

Appropriateness of KPIs

The KPIs in the dashboard are all appropriate measures to assess our quality performance.

Right first time in production: getting things right first time is important as it avoids wastage of materials and wastage of resources in having to rework the products.

Percentage on time delivery: is an important measure of our ability to satisfy our customers. Customers want to be sure that they will receive the correct product at the correct time particularly since our customers are consumers who will have made arrangement to enable access to their property.

Product returns with reasons: it is important to be able to see not just the quantity of returns but also the reasons for the returns. It may allow us to spot a trend and avoid future issues.

% wastage: it is important to measure our wastage since it creates both a cost for the company but is also an environmental issue. Being aware of the extent of the wastage and whether the trend is rising, will enable managers to be proactive and identify the root cause of the wastage and then take action to rectify the position.

% downtime and causes: identifying the time that machines are idle is important and should be kept as low as possible to ensure that the company achieves the best return on investment. It is also important however to identify the cause of the downtime to enable corrective action to be taken.

Responsibility accounting

Explanation of responsibility accounting

The idea of making individual managers responsible for achieving targets is referred to as responsibility accounting. Under a responsibility accounting system, managers are allocated specific targets which they are expected to achieve. If there is any difference between actual performance and targeted performance we would expect the production manager responsible to take action to ensure the target is achieved. In many cases, the achievement of targets is linked to pay and rewards.

Under a responsibility accounting system, the managers’ performance should be evaluated only on the areas that they can control. The effect on managers’ motivation will partly depend on whether they can control the factors that impact on the achievement of the target. For example, we may need to set different targets each period depending on changes to factors that are not within the managers’ control.

Production Director's concerns

The concerns raised by the Production Director seem valid. We would need to assess to what extent the production managers are able to influence the targets.

The KPI for "Right first time production" would probably be mainly influenced by the quality of work in the Production Department. Percentage on time delivery would be influenced by the Production Department but may also be influenced by the Logistics Department. Similarly, the reasons for the product returns could include damage that occurred when the product was delivered to the customer. The % wastage KPI will mainly be influenced by the Production Department but it could be argued that wastage is affected by the quality of the materials which would at least partly be the responsibility of the Purchasing Department. Lastly, some of the causes shown for the % downtime will clearly be determined by the Maintenance Department and perhaps by the Purchasing Department, in making sure that parts are available when required.

It is generally accepted however that quality should not be the responsibility of any individual manager but should be seen as a company-wide ethos and everyone's responsibility. It could be argued therefore that an individual manager should not be given responsibility for the targets.

OPERATIONAL CASE STUDY NOVEMBER 2020 & FEBRUARY 2021 EXAM ANSWERS

Variant 6

These answers have been provided by CIMA for information purposes only. The answers created are indicative of a response that could be given by a good candidate. They are not to be considered exhaustive, and other appropriate relevant responses would receive credit.

CIMA will not accept challenges to these answers on the basis of academic judgement.

SECTION 1

Decision tree

Explanation of the decision tree and how it is used to make the decision
The decision tree demonstrates that there are two decisions to be made. First, whether to charge a higher price and allow Matt-rest World to return any unsold goods or a lower price and not allow the return of unsold inventory. This is shown at decision point D. Second, whether to fund an advertising campaign at a cost of E$300,000 which would result in an increase in the pre-determined sales volume to Matt-rest World. This is shown at decision point C.

Since there is risk associated with how successful the contract will be and therefore the level of returns, we need to calculate and compare the expected values for each outcome. The expected value is essentially the weighted average contribution based on the probabilities of the expected outcomes.

In order to make a decision using the decision tree we need to work from right to left, starting with the decision at point C. The expected value at point A is E$2,332,440 however the cost of the advertising campaign of E$300,000 would need to be deducted from the expected value. The expected value at point B is E$2,074,800. It is therefore clear that the highest expected value is at point B. The decision at point C therefore will be not to advertise in Westland.

We then work backwards to the decision about whether to allow Matt-rest World the option of returning unsold inventory. This is at decision point D. At decision point C, we know that the decision is to allow returns and not to advertise. We need to compare the expected value of this of E$2,074,800 to the expected value under the no return option. The expected value of the no return option is E$1,920,000.

Based on the information given in the decision tree therefore, the most financially beneficial decision is to allow the return of unsold inventory and not to advertise in Westland.

Limitations of using decision tree methodology to make the decision

There are some limitations to using the decision tree to make the decision including:

- The decision is based on expected values which is the weighted average of all the possible outcomes. The weighted average is not an actual outcome but is based on the assumption that the same decision is repeated many times. In this case, we have a one-off decision and therefore the use of weighted average is limited.
- The outcome of the original proposal where we don't allow the return of inventory is certain whereas there is risk involved in the alternative option. The probabilities used in the decision tree to calculate the expected values are based on estimates. The level of returns depends on the success of the contract and this is uncertain as there are a whole range of factors that will affect market reaction to our products such as competition and consumer preference in Westland.
- The impact of advertising on the level of returns is also unclear as it's based on our knowledge of the market which is limited. We have assumed that the probability of a high level of returns decreases from 30% to 10% as a result of the advertising campaign. There is no guarantee that this will be the case.
- The decision tree uses expected values which assumes that the decision maker is risk neutral. This means that the range of possible outcomes and their probabilities are ignored. If we were to take a risk-seeking approach we would choose to advertise as this offers the highest possible net contribution of E$2,382,600.

Other factors to be considered before making a final decision about whether to appoint this distributor

As well as considering the financial implications of the decision we also need to consider other factors such as:

- Matt-rest World's experience in Westland and whether it has the capacity to deliver the mattresses throughout Westland. We should consider whether it may be better to contract with multiple distributors and to split the country by area and engage a distributor in each area.
- The importance of the quality of service that Matt-rest World is likely to offer the customers. We need to consider their track record and reputation for service. They will be selling AmaZZZing Bed's branded products therefore the service offered will reflect on us. Poor quality of service could jeopardise the success of our entry into the Westland market and it may be difficult for our brand to recover.
- The selling price offered to Westland consumers will be a key consideration. It is not clear who will set the selling prices. Linked to this is whether sales are going to be made through the existing AmaZZZing Beds website or whether Matt-rest World will use their own website. It may be better to use our website to ensure we can control the information given to customers and set the selling prices.
- Matt-rest World's business ethics to ensure that we protect our own reputation.

<u>KPIs for the distributor</u>

Three KPIs that could be used to assess the performance of our distributor are as follows:

Number of customer complaints about distribution issues in the month: The distributor will be selling our branded products and will be responsible for ensuring that customers receive the products that they have ordered on the agreed delivery date and in perfect condition. The distributor will be representing our brand and so we need to

ensure that the level of complaints regarding any distribution issues is as low as possible.

Percentage of customer orders delivered on time and in full in the month: The distributor will be responsible for ensuring that it has sufficient inventory to satisfy customer orders in a timely manner. This is an important measure of its ability to satisfy customers. Customers want to be sure that they will receive the correct product at the correct time particularly since our customers are consumers who will have made arrangement to enable access to their property. If orders for our products are consistently not satisfied or delivered late, this will affect our reputation in this new territory where we are trying to build a brand presence.

Number of customers returns due to damage or incorrect items delivered in the month: It is important to be able to see the quantity of returns and also the reasons for the return. It may allow us to spot a trend and work with the distributor to avoid future issues. If there is a consistent problem with products being returned due to damage in transit, it would direct our attention to the delivery staff. Similarly, if there is a problem with the incorrect items being delivered it would direct our attention to the order fulfilment side of the operation. In both cases, customers will potentially decide to buy a competitor product in preference to our product which will impact on our sales and reputation.

SECTION 2

Capitalisation of expenditure on new machine

Criteria for capitalisation

IAS 16 states that in order to capitalise the expenditure incurred as part of property, plant and equipment (PPE) an asset must have been created. There are two criteria that must be met in order to recognise an asset. First, it is probable that the expenditure will result in future economic benefits to our business and second, the expenditure can be reliably measured.

IAS 16 further states that the asset must be held for the supply of goods and services and will be held for more than one accounting period.

IAS 16 also states that expenditure associated with an item of property, plant and equipment can be capitalised if it is either part of the purchase price (including import duties) or directly attributable to bring the asset to its location and condition to be capable of operating for its intended use.

Treatment of items in the schedule

The factory and machinery will generate future economic benefits in the form of profit and as the expenditure is cash related, it can be reliably measured. The factory and machinery are to be used for the manufacture of the hybrid mattress and we intend to keep them for more than a year. Therefore, the factory and machinery meet the criteria to be capitalised as an asset.

From Table 1, the construction costs of the factory represent the purchase price of the asset and can therefore be capitalised. The planning, design and architect fees are directly related to the construction of the factory and are necessary to enable the construction of the factory and therefore can also be capitalised.

The purchase price of the machinery can also be capitalised. The amount to be capitalised will be E$300,000 which includes the delivery costs which are directly attributable to bring the asset to its location. Similarly, the machinery needs to be installed before it can be brought into use therefore the installation costs can be capitalised.

The training costs are unlikely to be incurred in order to get the asset ready for its intended use. The machine is likely to be ready for its intended use, even if staff need to be trained to use it. Even if we could argue that training costs are directly attributable to getting the machine ready for use, the fact that the trained staff are free to leave the business at any time, means that these costs do not meet the definition of an asset in terms of being able to control the economic benefits expected to arise. These costs will therefore need to be expensed.

Transfer pricing

International transfer pricing rules

The international transfer pricing rules deal with a group situation when either goods are sold inter-company at a favourable price or loans are made on favourable terms. Therefore, the transactions are not taking place at "arm's length" resulting in the allocation of profits between group companies being distorted.

If Meena's suggestion was applied, it would result in the profit from the inter-company sales of mattresses being wholly reported in Eastland. The Westland company would report the inter-company sale at cost and therefore show no profit on the sale. As Eastland has a lower tax rate than Westland this would potentially mean that less tax would be paid by the group than would otherwise be the case.

Under the international transfer pricing rules however, adjustments will be made in the corporate tax computations for both companies in order to reflect profit that would have been achieved if the transaction had been at arm's length.

Tax evasion or tax avoidance

Tax evasion is the illegal manipulation of the tax system to reduce the amount of tax payable. Evasion is the intentional disregard of the law to escape tax and can include claiming a tax deduction for expenses that are not tax deductible, or under-declaring income and claiming fictitious expenses.

Tax avoidance is by contrast, tax planning to arrange affairs, within the scope of the law, to minimise the tax liability. An example of this is to set up a subsidiary in a foreign country which has a lower tax rate.

Transfer pricing arrangements sometimes arise as an attempt to avoid tax through deliberate mispricing whilst still technically staying within the rules. Meena's suggestion however to transfer at cost is clearly not within the international transfer pricing rules of the two countries and could not be seen as being an arm's length transaction. As discussed above, it would effectively reduce the tax paid by the group and would be seen as the company attempting to evade the transfer pricing rules to move profits to another country at a lower tax rate. In this case, it doesn't appear that Meena's motivation is to avoid or evade tax but if we followed Meena's suggestion, we would be in breach of the international transfer pricing rules and guilty of tax evasion.

Factors to determine level of investment in working capital

There are various factors that influence the requirement for working capital and we will need to ascertain a number of values which are interlinked. We need to establish the level of production and the production methods that will be used in order to determine the values for work in progress and finished goods. For example, if we were to use JIT production we would expect the level of work in progress and finished goods to be lower than if we used a constant production policy.

We will also need to decide on our raw material purchasing policy. This will depend to a certain extent on the relationship we have with our suppliers and the availability of raw materials. If we use JIT purchasing the level of raw materials held on inventory should be lower than if we used, for example, an EOQ method.

The reliability of our suppliers will also affect our inventory holdings since, for example, we may need to pay a price premium and pay promptly to ensure good quality, reliable supplies and discounts, thus increasing the working capital requirement.

We would also need to consider the payment terms that are being offered by each of our suppliers. As we are new to Westland, we may not be offered extended credit terms.

In terms of our accounts receivables, the only credit customer we will have, at least initially, is our distributor and we will need to determine the credit terms we intend to offer the distributor and our collection policy. Longer credit terms will increase our working capital requirement.

We can determine the working capital cycle by calculating the number of days that we hold raw materials, work in progress and finished goods, plus the number of days it takes to collect our receivables. This is then reduced by our payables payment period. To a certain extent it may be possible, and it should be an objective, to minimise the working capital cycle but when considering the overall level, we need to ensure that we have sufficient working capital to enable the company to operate efficiently.

All of these areas will require due consideration in order to arrive at an expected working capital requirement.

SECTION 3

Importance of budgeting and how the budget can be used to manage production

Budgets have several different purposes including planning, control and communication.

In terms of planning, the budgeting process forces management to look ahead, set targets, anticipate problems and give the organisation purpose and direction. Without the annual budgeting process the pressures of day-to-day operational problems may tempt managers not to plan for future operations. The budgeting process will therefore encourage production managers or supervisors within the Westland operation to anticipate problems before they arise, and hasty decisions that are made on the spur of the moment, based on expediency rather than reasoned judgements, will be minimised. This will make the production facility easier to manage as everyone will know what is required of them and they will have anticipated potential issues.

The budget also provides the plan against which actual results can be compared. Those results which are out-of-line with the budget can be further investigated and corrected. This helps us to manage the business by ensuring that action is taken to deal with any adverse trends and indeed to ensure that any favourable movements are maintained. The performance of our managers is evaluated by measuring their success in achieving budget. The budget therefore acts as a quantitative reference point against which performance can be measured.

The budget enables co-ordination as it serves as a vehicle through which the actions of the different parts of an organisation can be brought together and reconciled into a common plan. Without any guidance, individual managers may each make their own decisions believing that they are working in the best interests of the organisation. A sound budgeting system helps to co-ordinate the different activities of the business and to ensure that they are in harmony with each other. For example, the production budget for the Westland operation will be dependent on the sales budget, as sales are the principal budget factor and limit the extent of our operations.

The Westland operation is remote from the Head Office but the budget acts as a communication mechanism, communicating targets to managers. Through the budget, top management communicates its expectations to lower-level management so that all members of the organisation may understand these expectations and can co-ordinate their activities to attain them.

The budget can also be a useful device for influencing managerial behaviour and motivating managers to perform in line with the organisational objectives. Through the budget we can ensure that individual manager's objectives are in line with the wider organisational objectives.

A budget may act as formal authorisation to a manager for expenditure, the hiring of staff and the pursuit of the plans contained in the budget. This will be helpful as it means that an extended process of authorisation for expenditure will not be required.

Production and materials budgets

Constructing the budgets

The first step in constructing the budgets is to establish the principal budgeting factor. In this case the principal budget factor is sales as we have the capacity to produce more than we can sell. The sales budget has already been completed so we can then use this to determine the production budget.

The sales volume budget and the production budget will differ by the quantity we plan to hold as inventory. In the first budget for the hybrid mattresses, the production budget will be equal to the sales budget plus closing finished goods inventory. In future budgets, it will be equal to the sales volume budget plus closing inventory less opening inventory. We may also want to build in an allowance for finished products that do not meet quality control checks.

The next budget to be determined is the material usage budget. Each of the products produced will have a list of materials required, as shown in the exhibit, which will detail the materials required and the cost of each material. For example, the list of materials required for the king size hybrid mattress shows that 8.75 metres^2 of pocket fabric is required to produce each mattress. If we are planning to produce 400 king size mattresses in the month, this will require (8.75 metres^2 x 400) metres^2 of fabric. We can then multiple the total quantity in metres^2 by the cost per metre^2 of E$1.25.

The material usage budget is the basis for the material purchases budget. The material purchases budget will include an allowance for the amount of raw material that we plan to hold in inventory. The material purchases budget will be the material usage budget plus closing inventory of raw material less opening inventory of raw material.

Factors to consider when determining the finished goods inventory level
When determining the finished goods inventory level, we would need to consider the lead times that we have offered to both the Eastland parent company and the Westland distributor. It is important that we have sufficient inventory to ensure that we are able to supply the goods on the due date.

The finished goods inventory level will also be dependent on the reliability of our raw material suppliers. We would need to ensure that we hold a sufficient buffer inventory to allow for interruptions or delays in the supply of raw materials.

The machinery transfer decision

In order to make the decision on which option to choose, we would need to establish the relevant costs which in this case would be the incremental future cash flow. We would then choose the option with the highest net incremental benefit or the lowest incremental cost.

In respect of Option A, the incremental net benefit/cost will be calculated as:

- The net cash proceeds of selling the machinery in six-months' time (E$18,000 – E$600) less the cash outflows from operating the machinery for the six months (which are the operating costs of E$40,000) less the transfer costs of E$2,000. The depreciation cost is ignored because it is not a cash flow.

In respect of Option B, the incremental net benefit/cost will be calculated as:

- The net proceeds of selling the machinery now is (E$25,000 – E$800) less the lease cost of E$12,000 less the operating costs of E$30,000 for the period.

On a relevant cost basis, we should choose the option which has the lowest incremental cost.

SECTION 4

Fixed overhead variances April 2021

The fixed production overhead expenditure variance indicates whether there has been an over- or under-spend of fixed overheads in the month. It is the difference between budgeted fixed overheads and the actual fixed overheads incurred in April. The budgeted fixed overheads in April were E$101,100 compared to the actual fixed overhead incurred of E$105,400 therefore the variance will be adverse as we have spent more in the month than budgeted. One reason for this is that we hired an additional production supervisor. The hire of the additional production supervisor was not budgeted and will therefore have contributed to the over-spend on fixed production overheads.

The fixed production overhead efficiency variance indicates how efficient the chosen absorption base, in this case labour hours, has been. It compares the standard hours expected to produce the actual output with the actual hours used. This difference in hours is then valued at the overhead absorption rate. In the month of April, we produced 1,400 units which we would expect to take 7,000 hours whereas we actually used 7,280 labour hours. The difference between 7,000 and 7,280 labour hours would be valued at the fixed overhead absorption rate of E$16.85. We were less efficient than the standard and the variance is therefore adverse. The reason for the variance will at least partly be due to new employees who were inexperienced and would therefore take longer to produce each unit but also due to the fact that the more experienced workers had to spend time giving on-the-job training to the new employees.

The fixed production overhead capacity variance indicates whether the workers worked more or fewer hours in the month than budgeted. It is calculated as the difference between the actual labour hours and the budgeted labour hours for the month, multiplied by the fixed overhead absorption rate. The actual labour hours in April were 7,280 compared to the budgeted labour hours of 6,000. The difference will be multiplied by the fixed overhead absorption rate. The variance will be favourable as we worked more hours than the original budget. The reason more hours were worked was due to the additional production volume that was required to meet the increased number of units requested by the distributor. More hours were also worked as a result of the inexperienced workers taking longer to produce each unit and the need for on-the-job training given by the more experienced workers.

The total fixed production overhead variance is the difference between the actual expenditure on fixed production overheads and the amount absorbed. It is therefore the same value as the amount of fixed production overheads that have been under or over absorbed. In this case, we have over absorbed so therefore the variance will be favourable as we need to reduce the cost of goods sold by the amount over absorbed.

CGMA's cost transformation model

The CGMA's cost transformation model consists of six co-dependent areas, which when viewed together, should help us to achieve and maintain long term cost-competitiveness. The four areas selected and how these apply to our business are explained below.

Engendering a cost-conscious culture: This part of the model suggests that everyone in our business from the directors to the employees on the factory floor making mattresses should be aware and conscious of the costs being generated and be motivated to reduce cost as far as possible. It is not just top-level managers that should be concerned about cost: there should be a culture where everybody within the business has a part to play. Cost reduction could be achieved through a number of different initiatives including for example, TQM, which encourages reduction in cost by getting it right first time.

Managing the risk inherent in driving cost-competitiveness: For this part of the model we need to consider and then manage any risks associated with cost reduction. For example, we could reduce costs by only using the cheapest supplier of materials, but this could potentially lead to quality issues and customers choosing our competitors' products rather than ours. We need to balance cost reductions with quality and the impact of reduced quality on our customers. We also offer customers a warranty on our products therefore cutting costs at the expense of quality could result in increased warranty claims. As mentioned above, the use of initiatives such as TQM would be helpful in ensuring that cost reduction is not achieved at the expense of quality.

Understanding cost drivers and cost accounting systems and processes: This part of the model suggests that we need to fully understand why the costs that we incur arise and how different variables affect those costs. We need to be aware of the drivers of cost as this will enable us to manage those drivers with the aim to reduce cost. In order to achieve this understanding, we could carry out a cost driver analysis. This would involve identifying individual activities within the business and the associated driver of the cost associated with that activity.

Incorporating sustainability to optimise profits: This part of the model is about embracing environmental concerns to ensure that we operate in a sustainable way because this helps to reduce cost (in terms of waste) and also potentially gives a competitive advantage. Our organisation is aware of the need for sustainability and has already instigated initiatives to ensure that our supplies are from sustainable sources however we could go further with this including looking at the life cycle costs of our products from product design to recycling at the end of their life.

Operational level integrated case study – Examiner's report November 2020 and February 2021 exam session

This document should be read in conjunction with the examiner's suggested answers and marking guidance.

General comments

The OCS examinations for November 2020 and February 2021 were based on AmaZZZing Beds, a company operating in Eastland, a country in Europe. AmaZZZing Beds sells mattresses and beds in Eastland through its network of 120 stores and through its own website. It is Eastland's largest bed and mattress retailer, based on revenue. AmaZZZing Beds sells all of the major brands of mattresses and beds as well as its own brand, which the company manufactures at its manufacturing facility in Eastland. Approximately 30% of the company's revenue and 33% of its gross profit is from the mattresses and beds that it manufactures. All other mattresses and beds sold in the retail stores are bought in from well-known branded manufacturers. Revenue for the year to 30 June 2020 was E$174 million, of which 64% was from mattresses and 36% from beds. Gross profit for the year to 30 June 2020 was E$80 million, of which 67% related to mattresses and 33% to beds. The company employs 1,160 people: 130 at Head Office, 575 in the retail stores, 285 at the production facility and 170 in Logistics (Distribution Centre and delivery fleet).

Six variants were written based on AmaZZZing Beds and the focus of each variant was as follows:

- Variant 1: expansion into the corporate customer market and the setting up of a new production facility for hybrid mattresses.
- Variant 2: setting up and operation of sleep clinics.
- Variant 3: launch of a 'Bed in a Box' mattress to be available for sale on-line and also sold straight from the retail stores.
- Variant 4: the company's corporate and social responsibility practices and the launch of a recycling service.
- Variant 5: the development and launch of a new smart bed.
- Variant 6: moving the production of some mattresses to a new facility in a different country.

Each variant was based on the OCS case study blueprint and covered all core activities in accordance with the weightings prescribed. A levels-based approach was used for marking candidate answers. Each variant consisted of four tasks and each of these tasks was broken down into between two and four elements. Each element of a task was then broken down into between one and three traits for marking. For each trait there was a detailed marking guide which split the total mark available into three levels: level 1, level 2 and level 3. It was also possible to achieve a score of zero for a trait if there was no rewardable material.

To achieve a level 3 for most traits, it was expected that a candidate would demonstrate good technical understanding of the topic being tested, through clear and comprehensive explanation and apply this technical understanding to the AmaZZZing Beds business

and the particular scenario within the task. If a candidate scored only at a level 1 on a trait, it is likely that they did some or all of the following:

- Demonstrated some technical understanding, but with gaps in knowledge.
- Identified issues and points rather than explained.
- Explained issues too briefly or with a lack of clarity.
- Failed to relate their answer to the task scenario and the specifics of AmaZZZing Beds.

It must be stressed that demonstrating good technical understanding is not enough on its own to pass. Candidates need to demonstrate technical understanding in the context of the scenario and the particulars of the issue being addressed. Information given to candidates as part of the task is there for a reason and should be, as far as possible, incorporated into answers, along with relevant information from the pre-seen. Application to the scenario is key to achieving high level 2 and level 3 scores. Clearly where there are gaps in knowledge, application is not possible and therefore the importance of candidates ensuring that their knowledge base is complete needs to be stressed.

One other area worthy of mention is candidates' ability to explain. At the operational level, many of the tasks require explanation and, to achieve high level 2 and level 3, it is expected that this will be clear and comprehensive. It should also be an explanation or justification rather a description, identification or simple statement.

Candidate Performance

Performance across the six variants varied considerably. For all variants there were some excellent high-scoring answers, indicating well-prepared candidates who demonstrated technical knowledge within the context of the scenario with clear explanations. However, at the other extreme there were also a sizeable number of low scoring answers. For all variants there was a significant minority of candidates that were clearly not prepared, with many of these scoring less than 25% of the marks available.

Specific topic areas where candidates demonstrated good technical understanding and application to the scenario included IAS 16 and IFRS 16, assessing the working capital position of a company using ratios, advantages and disadvantages of factoring, profit/volume charts and break-even analysis, decision making with uncertainty, the use of and limitations of expected value, relevant costing, the purposes of budgeting and for the most part variances and defining and reviewing KPIs. A topic area where there has been an improvement in performance is linear programming and responsibility accounting.

There were, however, a number of topic areas where candidates demonstrated a lack of technical understanding and also a lack of application. These included sales mix and quantity variances, fixed overhead efficiency and capacity variances, replace or keep decisions, decision trees and activity based budgeting. For this session, candidate performance was also generally weak in tasks related to digital costing.

One striking observation about candidate performance for this session was the lack of explanation or justification in some of the tasks, despite clear instructions. There were more examples of candidates listing or identifying points rather than explaining points or justifying treatment compared to previous sessions. Another point to note is that explanation needs to be clear and comprehensive, which was not always the case. If a marker has to read something twice or sometimes three times to try and understand the point being made, this is obviously not a clear explanation.

There were also many examples of candidates answering the task that they had prepared for and wished they had been asked, rather than what they were asked. Preparation ahead of sitting the exam is to be applauded, but candidates need to be mindful that they must tailor their answer to address the task given to them on the day. Candidates need to read the task very carefully to ensure that they do not end up wasting time.

With respect to the core activities, candidate performance was typically best for B (budgeting), F (working capital), D (financial reporting) and C (performance evaluation). The less competent core activities appeared to be A (costing) and E (decision making), but this often depended on the topic area that the task was based on. Most answers were clearly laid out, with headings and sub-headings.

To sum up, there was a large range in the quality of answers. The difference between a fail / bare pass and a good pass is often the candidates' ability to apply the theoretical concepts to the scenario and to incorporate this application into their answers consistently. Candidates should also pay attention to clarity of explanation and ensuring they have addressed all parts of the task. The same general advice to candidates applies to this session as much as all the previous sessions: answer the task set, answer all parts of the task and demonstrate technical understanding within the context of the business and the task, referring as much as possible to the information given to you.

Variant 1

Task 1

The first element of this task asked for an explanation of how time series analysis had been applied to base data to derive trend and seasonal variations and why these needed to be separated from the base data. It also asked for an explanation of what the data showed in respect of demand for hybrid mattresses from Eastland's hotel industry. This tested core activity B. The quality of answers was mixed. Many candidates failed to explain how a four-point moving average had been used to produce the trend line and often could not explain how seasonal variations were derived from the difference between the trend and actual sales. This showed a lack of knowledge and technical understanding. However, many candidates recognised the need to separate seasonal variations for production or inventory planning purposes and could also explain that the data showed increasing sales but with significant quarterly variations. Very few candidates recognised that the rate of growth in sales was slowing off towards the end of 2018.

The second element of this task asked for an explanation of the financial impact of selling to hotel customers on credit and the actions to take when approving customers, setting credit terms and monitoring the amounts owed. This tested core activity F. This was generally well answered by most candidates, who recognised that this was a significant change for the company and would impact on cash flows and working capital. Many candidates commented on the benefits of higher sales and profits but failed to explain the potential for irrecoverable debts when discussing financial impact. With respect to actions, candidates that structured their answer along the lines of the three areas of approval, credit terms and monitoring generally scored well. A common issue for those candidates that did not score well was a focus on general commentary about working capital rather than on specific actions applied to the scenario.

Task 2

The first element of this task asked for an explanation of the issues to consider when choosing the base for the absorption rates in the new production facility. This tested core activity A. This was not well answered. It was expected that candidates would discuss a few issues, and to recognise that perhaps more than one base for the absorption rates might be appropriate for the new production facility. Most candidates just made a simple statement saying that because the new facility was automated, machine hours would be better than labour hours. Although this was correct, these kinds of answers were lacking in depth and therefore could not score more than a low level 2.

The second element of this task asked for an explanation of how the accuracy of costing information could be improved by using a digital costing system and the benefits of this improved accuracy for the business. This tested core activity A. This was again not well answered by many candidates with many only scoring at level 1. Poorer answers explained digital costing systems in terms of the internal links between production, sales and inventory, rather than external links with suppliers and customers. Another common problem was discussing digital costing systems in very generalised terms, and in particular for inventory planning, when the focus

should have been on how to improve the accuracy of costing information. Again, some candidates, when discussing the benefits of improved accuracy, often limited this to comments such as “data is now up-to-date” when what was expected was an explanation of the impact on costing, for example on purchasing decisions and for variance reporting.

The third element of this task asked for an explanation of a decision tree and how it could be used to make a decision about which contract to choose. It also asked for explanation of the limitations of using this tree to make the decision. This tested core activity E. This was reasonably attempted by most candidates. Less competent candidates failed to explain the decision tree in sufficient depth within the context of the maintenance contract and in some cases did not explain how the tree would help inform the decision. Some candidates were confused by the data recommending that Contract 2 be chosen because of its higher expected value when this was a decision that required minimisation of cost. A common approach of many candidates was to explain the limitations of decision trees in very general terms rather than referencing the scenario provided, which limited the marks that could be awarded to a low level 2. For example, a popular and correct limitation in many answers was to say that decision trees ignored risk. Explanation of this would have in many cases been enhanced by referring to some of the data in the tree to illustrate the range of possible outcomes.

Task 3

The first element of this task asked for an explanation of what fixed production overhead variances meant and the reasons why each variance had occurred. It also asked for explanation of any limitations of using these variances to control the fixed production overheads at the new facility. This tested core activity C. The explanation of the three variances and possible reasons for each variance were reasonably well answered by many candidates, with many scoring at high level 2. Most candidates demonstrated good technical understanding of at least two of the variances and were able to give reasons based on the information given in the scenario. The variance that was often incorrectly explained was the capacity variance which was often explained in terms of volume of production units rather than in terms of labour hours. In contrast, many candidates could not provide a reasonable explanation of the limitations of the variances for cost control and therefore many did not score above level 1. Some candidates simply ignored this element and moved on, whilst others just repeated the comment they had already made when answering the first element of task 2 saying that, because of the automated facility, machine hours should be used rather than labour hours.

The second element of this task asked for an explanation of two queries in relation to non-current assets: the revaluation of an old warehouse and depreciation of the new digital production line. This tested core activity D. This was reasonably well answered. Most candidates demonstrated reasonable understanding of the relevant financial reporting standard (IAS16) but tended to lose marks by not always fully answering the task. For example, for the warehouse revaluation query, candidates were expected to comment on whether all assets of the same type should be revalued, and the impact on the reported profit next year. These were often over-looked by candidates. Also, some candidates went down a “pre-prepared” route and answered in terms of an asset disposal rather than a revaluation. Candidates could usually explain the basic principles of asset depreciation, but many needed a more questioning attitude as to whether 15 or 20 years would be a more appropriate useful life. However, most candidates recognised that asset useful life was an accounting estimate and could be changed later.

Task 4

The first element of this task asked for an explanation of how a zero based budgeting (ZBB) approach should be applied to create a budget for the raw materials handling function to help improve operational efficiency. This tested core activity B. This was generally not well answered. Most candidates were unable to explain the basic ZBB process which includes determining objectives, establishing decision packages, and reviewing costs and benefits. This demonstrated a lack of knowledge. Where candidates did attempt to explain this process, they often failed to apply their answers to the context of the raw materials handling function and therefore failed to score above a mid-level 2. Many candidates unfortunately commented that ZBB was about starting a budget from scratch and then explained the benefits of ZBB over incremental budgeting. This kind of answer would have been reasonable for a different task, but not this task.

The second element of this task asked for suggestions of three KPIs appropriate for monitoring the performance of the Machinery Maintenance Department and to explain why each of these would be appropriate. This tested core activity C. Candidates clearly understand the concept of KPIs and in many cases scored high level 2 or level 3 because they were able to both identify and explain the appropriateness of three KPIs for this department. However, some candidates explained KPIs for the Production Department rather than the Machinery Maintenance Department, giving measures such as production quality and customer returns. This approach scored few marks.

The third element of this task asked for an explanation of whether costs on a schedule were relevant or irrelevant costs when deciding whether to accept an order. This tested core activity E. Whilst candidates seemed comfortable with this task and the concept of relevant and irrelevant costs, some easy marks were lost by not explaining why a cost was deemed to be relevant or irrelevant. Two common mistakes were not using the higher replacement cost for “other raw materials” and not separating out production overhead into fixed and variable, each of which required a different treatment.

Variant 2

Task 1

The first element of this task asked for an explanation of the nature and types of cost included and how to establish the total cost of a video over its lifetime. It also asked for an explanation of any difficulties associated with establishing the total cost per video. This tested core activity A. This was generally poorly answered, with very few candidates achieving at a higher level 2 or level 3 score. Many candidates simply listed the costs given in the scenario without any reference to the nature or type of costs (for example, one-off or on-going, upfront or in the future, direct or indirect, variable or fixed). Many candidates failed to make any attempt to explain how to calculate the cost per video and those that did often did little more than say “divide by eight”. There was very little recognition that each video would be potentially different and therefore costs needed to be shared on an equitable basis. Regarding the difficulties, most candidates identified that it was difficult to establish the number of views with respect to the royalties but commented on very little else.

The second element of this task asked for an explanation of how activity based budgeting (ABB) could be used to work out how many hours a week would be needed to set up rooms and book appointments at the Northern Clinic. It also asked for the difficulties of estimating how many part-time employees would be needed each week in the clinic. This tested core activity B. Again, this was not well answered by many candidates who focused on explaining the steps involved in activity based costing (ABC) in general terms rather than how to establish a budget using ABB. Most candidates failed to consider the information given in the scenario about the two activities and of those that did, few then considered that time taken for each activity would differ depending on the type of service being set up or the type of customer booking appointments. Few candidates established any difficulties with ABB other than being difficult to predict the number of bookings. As a result, many candidates scored at level 1 for this task.

Task 2

The first element of this task asked for an explanation of a profit-volume chart and the information it showed. It also asked for an explanation of whether the chart indicated that the company should concentrate selling and marketing activities on certain services. This tested core activity E. It was pleasing to see that most candidates were able to explain the information that the profit-volume chart showed in respect of fixed costs, overall profit, the order of c/s margin and break-even and could use the chart to contextualise the answer. Only a few candidates commented on margin of safety, but this did not prevent a lower level 3 score. Regarding the second element of this task, far fewer candidates did well here. There was a distinct lack of depth in answers. Whilst most candidates explained that the higher c/s ratio services might be the ones to concentrate marketing activities on, few understood that it was important that the business offered all services to keep all customers satisfied. There was very little recognition that certain services were more important to the business in terms of volumes (as depicted by the length of each section of the line in the chart).

The second element of this task asked for an explanation of whether each of the items of expenditure shown on a schedule should be initially recorded as a non-current asset, and if so, why this was the case. It also asked for an explanation of how any expenditure which could not be initially recorded as a non-current asset would be treated in the financial statements for the year ending 30 June 2021. This tested core activity D. There were either excellent answers here scoring maximum level 3 marks, or disappointing answers where candidates simply listed each of the expenditures and identified whether to capitalise or expense without any explanation of why. The task clearly asked for an explanation and therefore it was expected that the treatment would be justified.

The third element of this task asked for an explanation of how taxable profit differed to accounting profit for the year ending 30 June 2021 as a result of purchasing computer equipment and how this would affect the tax payable in respect of the year. This tested core activity D. This was well answered by most candidates, which was good to see. One common error was to pro-rata the tax depreciation despite the fact that the pre-seen clearly stated that a full year's allowance could be claimed in the year of acquisition.

Task 3

The first element of this task asked for an explanation of what two sets of sales mix variances meant and the benefits of each method of calculation. It also asked for an explanation of the possible reasons why the mix of services sold had changed. This tested core activity C. The explanation of what the variances meant, and the benefits of each method, was the worst answered element of this paper with many candidates scoring at level 1. Candidates do not have technical understanding of the different methods of calculating sales mix variances and therefore what sales mix variances under each method mean. With regard to the meaning of the variances, a clear explanation of what a favourable and an adverse variance meant under each method of calculation was required (please see the examiners answers for this). This type of analysis has been asked many times before and there are numerous past examples available. Regarding the benefits, this was trickier, but many candidates ignored it altogether. Candidates did however do better when commenting on the reasons for the change in mix.

The second element of this task asked for an explanation of what KPI measures identified in a table indicated about the comparative performance of the clinics. This tested core activity C. This was reasonably well answered with most candidates scoring at level 2. There was good use of the scenario to explain the differences in the customer base for each clinic and the issue with the hypnotherapist.

The third element of this task asked for an explanation of the benefits and drawbacks of involving the Clinic Managers in the setting of their individual clinic's budget and KPI targets. This tested core activity B. There were some excellent level 3 answers here where candidates gave a range of both benefits and drawbacks which were applied to the scenario. However, the majority of candidates did not score at level 3 because they either failed to apply their answers or failed to give a range of points.

Task 4

The first element of this task asked for explanation of which items on a schedule were relevant and which were irrelevant to a decision whether to proceed with the conference or not. This tested core activity E. This is familiar territory for candidates and hence answers were generally very good and high scoring. Most items were identified as either relevant or irrelevant accurately, although some candidates lost marks because they sometimes failed to explain why this was the case. Again, this task asked for explanation rather than identification.

The second element of this task asked for an explanation of two additional factors that should be considered when making the decision. This tested core activity E. This again was well answered with most candidates explaining factors such as the potential damage to the company's reputation of cancelling the event and potential opportunities for additional sales as a result of holding the event. Where candidates lost marks, it was because either they only gave one factor, or there was identification of factors rather than explanation.

The third element of this task asked for an explanation of the factors that would need to be considered when investing the cash of the business in short-term investments. This tested core activity F. Some candidates commented on short-term financing and not short-term investment, which demonstrated a lack of reading the task carefully enough. Those that did comment about short-term investing often simply listed the factors of risk, return, liquidity, maturity and diversification with little explanation, or application to the scenario. The few candidates scoring at level 3 did so because they had explained the various factors within the context of each other and within the context of the business, giving examples of different investments to illustrate their points.

Variant 3

Task 1

The first element of this task asked for explanation of how changing four variables would affect the budget for the EasiMattress range and why the scale of these effects was different depending on the variable changed. It also asked for an explanation of the benefits and limitations of the what-if analysis. This tested core activity B. There were some excellent answers where candidates explained the impact on revenue, contribution and profit of changing each variable, demonstrating clear understanding of cost behaviour. However, many candidates merely repeated the information in the table and failed to add value, which limited their score to a low level 2 at best. Very few candidates identified that the fixed costs were a relatively small absolute figure, and that this explained the lesser impact on profit compared to other elements. Regarding the benefits and limitations of this analysis, candidates' answers were often far too generic, and some did not specifically relate to the what-if analysis presented. Some candidates cited the ability to model multiple variables simultaneously as a benefit of this what-if analysis, despite the fact that this is not what had been done.

The second element of this task asked for an explanation of whether expenditure to recondition and test the binding machine could be capitalised. This tested core activity D. Most candidates were able to explain and apply IAS16's subsequent expenditure rules. The most common omission was not discussing the extension of the useful life and the most common mistake was expensing the safety certificate costs to the statement of profit or loss.

The third element of this task asked for an explanation of how an asset to be leased on 1 January 2021 would be initially recognised and the impact of the lease on profit or loss for the year to 30 June 2021. This tested core activity D. In relation to the lease, most candidates were comfortable identifying that a right of use asset and a lease liability would be established. However, there was an apparent lack of technical knowledge displayed by some candidates who failed to specify which payments would form part of the asset and failed to consider the need to pro rata the depreciation or the interest. Where technical understanding was demonstrated, there was often a lack of clarity in the answer which limited the score to level 2.

Task 2

The first element of this task asked for explanation of information in three tables. It also asked for explanation of which option would be taken using a risk seeking, risk neutral and risk averse approach to the decision, giving one limitation associated with each approach. This tested core activity E. Many candidates did not score above a low level 2 for the explanation of the information shown in the three tables because they failed to explain the meaning of the statistical measures. A distinct lack of understanding of the co-efficient of variation (COV) was displayed, with many candidates ignoring it altogether. Regarding the use of risk seeking, risk neutral and risk averse approaches to the decision, many candidates remain confused about the difference between risk and uncertainty and suggested a maximin approach for example for justifying the risk averse approach decision. Explanation of the limitations was good where

candidates focused on the limitations of the approach itself. However, some answers were about the strategic limitations of being risk seeking or risk averse.

The second element of this task asked for an explanation of how an ABC approach would change how fixed production overheads would be absorbed and the impact this would have on product costs. It also asked candidates to illustrate their explanation with reference to the cutting & quilting process for covers production. This tested core activity A. This was not well answered by most candidates. Often answers were either completely generic or repeated the information from the table provided without any attempt to explain the implication on the product costs. It was also the case that many candidates failed to comment on the specific differences between the two costing methods and concentrated more on describing the ABC process. Additionally, some candidates provided advantages and disadvantages of ABC when this was not required (possibly because this has been asked in the past). It was disappointing that the fact that EasiMattress was more complex to make was not spotted and so explanation about this leading to a higher cost was not given over and above saying ABC would give a more 'accurate' cost. However, there were a few good answers here where candidates clearly explained the key differences between the two in the context of the information provided and then justified why this would result in a higher cost for the new product under an ABC method.

Task 3

The first element of this task asked for explanation for both covers production and assembly for the EasiMattress range, what the direct labour variances meant and the reasons for their occurrence. This tested core activity C. Answers here were mixed. Most candidates were able to explain the rate variance and the reasons for the adverse and favourable variances shown. However, candidates were not able to articulate the idle time variance well and many did not make it clear this was hours paid, not hours worked. In explaining the efficiency variance many candidates did not make it clear that the variance related to actual production. Candidates should also note that merely showing how a variance is calculated is not sufficient to infer meaning. In showing understanding, a comment to demonstrate appreciation of the implication of adverse and favourable is also required. In respect of reasons, the rate and idle time variances were well explained. However, in interpreting the efficiency variance for the assembly department many candidates just said it was surprising that the favourable variance occurred without linking it to poor budgeting.

The second element of this task asked for identification and justification of three KPIs that could be introduced to monitor the performance of the production supervisors. This tested core activity C. In general, this was well answered by many candidates with reasonable KPI's suggested and rationales as to why they would be suitable. However, there were two reasons why candidates did not score above a low level 2. The first reason was that in some cases KPIs were justified in a general sense rather than in the context of the business. The second was that some candidates explained KPIs more relevant to machinery or supplier quality, moving too far from the remit of the production supervisors. In addition to this, some candidates did little more than repeat the variances already mentioned. Many candidates, who had prepared themselves from previous exams, wasted time by explaining how the KPIs would be calculated, highlighting a need to read the task carefully.

The third element of this task asked for explanation of what is meant by a feedback control system and how it would apply in the business, using the direct labour variances to illustrate the explanation. This tested core activity B. This was generally reasonably well answered. Most candidates demonstrated good technical knowledge of a feedback control system with understanding displayed regarding the benefits. However, application of the business scenario to this task once more let many candidates down, with limited explanation of what action could be taken to remedy or improve the current labour situation. Few answers discussed positive feedback, although most touched on negative feedback.

Task 4

The first element of this task asked for an explanation of how to use a linear programming graph to determine the feasible region and the optimal production plan and what that optimal production plan was. It also asked for an explanation of the factors to be considered before proceeding with this production plan. This tested core activity E. This was not well answered. There was a lack of clarity in explaining where the feasible area was located, and some candidates identified the demand lines as minimum rather than maximum production levels which gave them subsequent issues in identifying the correct area. Most candidates were able to explain how to identify the optimal solution by using the iso-contribution line, however very few candidates located this correctly and many stated it was where lines A and B cross. In explaining other issues, many candidates did not seem able to apply general business sense to the scenario. Many did not add anything more than discuss the forecast demand from the customers. Candidates that scored well were able to realise that the full demand by the customers would not be met, and therefore discussed considerations based around this.

The second element of this task asked for explanation of the key principle of the EOQ model and the information required to calculate EOQs for fabric and padding raw materials. It also asked for an explanation of the appropriateness of the EOQ model assumptions for the business and how the model could be adapted to deal with relaxing these assumptions. This tested core activity F. Some candidates did not seem to understand what was required in the first part of the task and merely listed holding and ordering costs. Good answers here went beyond just providing the EOQ formula and explained the inverse relationship between ordering and holding costs. The assumptions were generally well known by the candidates and most were able to apply these to the scenario. However, fewer candidates were able to suggest the implications of adapting the model for bulk purchase discounts or buffer inventory. Very few went into the details of how you would approach this practically.

Variant 4

Task 1

The first element of this task asked for an explanation of how to determine the trend and seasonal variations from sales volumes of hybrid mattresses using linear regression. This tested core activity B. This was not well answered. While most candidates understood what the data in the graph showed in terms of the trend and the seasonal variations, few were able to explain how linear regression could be used to determine an equation for the trend line. Most candidates did though demonstrate understanding that the seasonal variations would be calculated as the difference between actual and trend. Many candidates demonstrated excellent understanding of how moving averages could be used to establish the trend, but this was not the task given and could not be awarded any credit.

The second element of this task asked for an explanation of any limitations of using this approach (from the first element of the task) to forecast the sales volumes for the eco mattresses. This tested core activity B. This was generally well explained with some excellent application to the scenario presented.

The third element of this task asked for an explanation of the correlation co-efficient the co-efficient of determination and the usefulness of calculating these measures in this case. This tested core activity B. This was poorly answered by most candidates. Few candidates could explain the correlation co-efficient or the co-efficient of determination very well and a significant number explained the co-efficient of variation instead. There was a clear lack of knowledge here.

The fourth element of this task asked for an explanation of Eco Material's (a potential new supplier's) working capital position based on information in an attached schedule. It also asked for an explanation of the risks that its working capital position might present if AmaZZZing Beds were to trade with Eco Material. This tested core activity F. Answers here were mixed. Many candidates simply described the figures presented or made bland statements (for example, "inventory days have reduced over the three years" or "trade payables are higher than the industry average''). Such candidates did not score well because they were not adding any value. For a level 2 or level 3 score, candidates are expected to explain what these observations mean: Are the low inventory days a result of excellent inventory systems? What risk will holding such low inventory mean for AmaZZZing Beds in the context of the information given?

Task 2

The first element of this task asked for an explanation of a profit/volume chart and the impact that changes to the estimates would have on the break-even point and margin of safety. This tested core activity E. Most candidates were able to explain the profit/volume chart with technical accuracy in respect of fixed costs, the breakeven number of units and the margin of safety. Some candidates missed the estimated demand information given in the scenario and thus failed to correctly identify the margin of safety. Candidates must take

their time and collect all appropriate information to answer the question fully. The need to explain the impact that changes to estimates would have on the break-even and margin of safety was missed altogether by some candidates and answered badly by most. Some candidates simply stated that if fixed costs were higher it would affect the breakeven point. While this is true it is not incisive enough to earn much credit. To score at a level 2 or 3 candidates needed to explain **how** an increase or decrease in the estimate would affect the break-even.

The second element of this task asked for an explanation of why the data used to construct the profit/volume chart would limit its usefulness. This also tested core activity E. This was reasonably well answered by many candidates who were able to critique the assumptions made about the estimates. Candidates that scored poorly here typically did so because they listed points rather than explained them.

The third element of this task asked for an explanation of what drives the costs in each of the processes for the recycling of mattresses and the reasons why the costs of the recycling service would differ depending on the size and type of mattress. It also asked for a discussion of the usefulness of determining an accurate cost for recycling each type of mattress. This tested core activity A. Answers were disappointing with many candidates scoring only at level 1. Many answers were far too brief, containing simple statements such as “number of mattresses”, “number of trips” or “labour hours”, rather than an explanation of why these factors drove the cost. There was some recognition of the differences in the types and size of mattress, but often this was not linked to the activities described in the reference material.

Task 3

The first element of this task asked for an explanation of how a lease would be initially recorded in the accounting records and how it would be treated in the financial statements for the year ended 30 June 2021 and in subsequent years. This tested core activity D. The most disappointing aspect of the answers submitted was that, although it was clear that candidates were technically competent with the subject matter, they were unable to obtain a level 3 mark because they did not explain the treatment at the year ended of 30 June 2021. Other answers that failed to achieve a high level 2 or level 3 did so because no use was made of the numbers provided. Without using the numbers it was often difficult to tell if the answers were correct. While there are no specific marks for using numbers or calculating answers in OCS, using the numbers can help clarify a point or confirm the accuracy of an answer. In most cases, where numbers are provided it is a good idea to use them to aid your explanation, especially in a technical task such as this.

The second element of this task asked for an explanation of figures in a table (expected value, standard deviation and coefficient of variation) and whether choosing a marketing package based on expected value would be the best option. It also asked for an explanation of a risk averse and a risk seeking approach to decision making and the package that would be chosen for each of these approaches. This tested core activity E. Unfortunately, very few candidates addressed all parts of this task, meaning that the most they could achieve was a level 2 score. This was a relatively straight-forward question and one that has been asked many times at OCS and it was expected that candidates would score well. However, technical inaccuracies and missing sections in the answers, meant

that this was not the case. Candidates should study past OCS examinations as, although the context will always be different, the technical content tested will be repeated.

Task 4

This first element of this task asked for an explanation of how each of the sales variances had been calculated and the reasons why they may have arisen. This tested core activity C. Approximately half of candidate answers failed to explain how the sales variances were calculated. Instead, answers explained what the variances indicated (for example, “adverse means the company sold at a lower sales price than budgeted”). Whilst some credit could be given for this because it demonstrated understanding, it was not fully addressing the task and therefore this type of approach could not score at level 3. A sizable number of candidates explained the sales volume profit variance, which, although was often correctly explained, was not one of the variances presented and therefore not awarded any credit. It is disappointing that the majority of candidates are still unprepared to explain a sales mix variance or a sales quantity variance.

The second element of this task asked for the potential benefits of separating the variances into planning and operational variances. This tested core activity C. While many candidates answered this adequately enough to score a high level 2 there were many very confused and unstructured answers with little, if any, application to the case material. The scenario included information that a competitor had gone into liquidation causing the market to be flooded with good quality low-priced eco mattresses. Few candidates thought to use this information to explain the planning variance and why it was appropriate to separate it from more controllable factors when assessing sales manager performance.

The third element of this task asked for suggestions of three KPIs which could be used to measure the company’s sustainability performance, explaining how each would be calculated and why each would be appropriate. This tested core activity C. This was answered very well by many candidates who were clearly well prepared, often citing information from the pre-seen material. This was good to see. Candidates that scored poorly did so because they failed to appreciate that the task was specific to sustainability performance and not just general performance.

Variant 5

Task 1

The first element of this task asked for an explanation of how each of the cost items listed in a schedule would be incorporated into the unit cost of an app and the difficulties involved in doing this. This tested core activity A. Candidate answers were generally poor here, with many struggling to score more than level 1. Candidates were given extensive information about the types and nature of each of the costs. Many candidates did little more than repeat the information given. Some candidates also wrongly assumed that this task was about relevant costs and took this approach to each cost item. Those candidates that did score well were able to explain how each cost item would be incorporated into a unit cost and provided a good explanation of the need to estimate future costs, to apportion shared costs and how to treat fixed and variable costs. When explaining difficulties, some candidates merely stated that to determine the cost was hard to establish without explaining why. Higher scoring candidates explained the issues with estimating lifetime units and estimating future costs within the context of a digital product such as the app. Candidates are reminded for the need to justify their points raised for full credit to be given.

The second element of this task asked for an explanation of a linear programming graph and how the optimum production plan could be determined using the graph. It also asked for suggestions of how to overcome any binding capacity constraints and how to determine the maximum price to pay for additional resources. This tested core activity E. Many candidates were able to explain the graph and how to determine the optimum production plan and scored at level 3 for this part of this task. Candidates that didn't score well here did so because either there was a lack of clarity explaining the feasible region or no explanation of how to use the ISO contribution line. Some candidates wrongly assumed that the optimal point was where the machine hours and labour lines crossed which demonstrated a lack of understanding. Regarding binding constraints, many candidates could accurately define the shadow price. Fewer candidates went beyond this to specify that the maximum to pay should be inclusive of the normal price paid. Most candidates were able to suggest ways to overcome the constraints and scored well here. However, many did not score maximum marks as they failed to identify that machine hours were the only binding constraint and instead provided suggestions for increasing both labour and machine hours.

Task 2

The first element of this task asked for explanation, with clear justification, of why each of the costs on a schedule would be relevant or irrelevant to a decision whether to accept a contract. It also asked for explanation of two factors that would be considered before making a final decision whether to accept the contract. This tested core activity E. Candidates are generally good at these types of tasks and this sitting was no exception to that, with many candidates scoring at high level 2 or above. Candidates that didn't score so well, typically lost marks because they failed to justify their answers. Candidates need to justify each item and not just assume that if they define relevant costing somewhere in their answer in a general sense, this will be sufficient. Candidates also need to be mindful of how they justify overhead costs as sometimes sunk costs and non-incremental costs were confused. In respect of the two factors,

candidates need to be mindful that only two factors will be awarded credit. Therefore, it is important, where a specific number of factors is asked for, that candidates focus their efforts on ensuring each factor is sufficiently expanded rather than listing many factors briefly. Candidates also need to focus on the business scenario as some candidates gave answers that they may have seen in previous cases that were not relevant here.

The second element of this task asked for an explanation of how to calculate the net cost of factoring based on information given and the potential advantages and disadvantages of factoring compared to setting up sales ledger and credit control functions. This tested core activity F. The first part of this element was poorly answered. Many candidates failed to understand how the interest element would be calculated and very few explained how to quantify the financial benefit of receiving the funds early. Poor answers also suggested that the company would lose the full 20% of the invoice value not advanced, showing a lack of understanding about factoring arrangements. There were better answers for the second part of this task about the advantages and disadvantages of factoring, with a significant number of candidates scoring full marks.

Task 3

The first element of this task asked for an explanation of how the costs associated with the dismantling and repair of the reconditioned inventory would be treated in the financial records. It also asked for an explanation of the treatment of this inventory under each of two resale options and the impact of any write-down on profits and cash flows in the current financial year. This tested core activity D. Most candidates were able to identify that the inventory should be valued at the lower of cost and net realisable value. However, many candidates stated that the dismantling and repair costs should be treated as an expense in the statement of profit or loss, as opposed to being added to inventory cost. However, many candidates did justify the correct treatment of the inventory under each resale option, although some candidates commented on each resale from a business perspective as opposed to a financial reporting one. Regarding the impact on profits and cash flows of any write downs, a considerable number of answers focused on the impact of the reduction in selling price as opposed to inventory write down. Many did not discuss cash flow.

The second element of this task asked for an explanation of the figures in a what-if analysis. It also asked for an explanation of the further analysis that could be carried out, and its potential benefits, if the company were able to determine probabilities for the variable costs and the sales volumes at each selling price. This tested core activity B. Answers here were disappointing as many candidates did little more than describe the information in the what-if table with little extra added value. For a level 3 score for this part of the task, it was expected that candidates would recognise the impact of changing each variable or a combination of variables on profit or loss and that in many cases a loss was predicted. In commenting on probabilities, a considerable number of answers were able to identify that expected values could be used to determine the best-selling price. Fewer candidates mentioned standard deviation, coefficient of variation or joint probabilities. Those that did lacked detail of how these would be used.

Task 4

The first section of this task asked for explanation of planning and operational variances and the potential benefits of reporting these variances, using the changes that had occurred in the smart bed range to illustrate the explanation. This tested core activity C. Many candidates did very well here and were able to define these variances and justify why each of the changes given were either planning or operational. Most candidates could state what the benefits were of separating variances in this way. Where candidates did badly, it was usually because of a lack of application to the scenario.

The second element of this task asked for an explanation of the benefits of using a quality dashboard and why each of the specific KPIs shown on a dashboard would be appropriate to measure quality performance. This tested core activity C. Most candidates scored well here although, in explaining the benefits, some candidates focused on KPIs more generally, which limited their score. Some candidates chose to interpret the KPIs as opposed to explaining why they were appropriate which did not address the task. These types of answers did not get full credit. However, there were some excellent answers to this part of the task, and many candidates did score full marks.

The third element to this task asked for an explanation of responsibility accounting and a discussion of the Production Director's concerns in respect of each of the KPIs. This tested core activity B. Again, most candidates scored well here. Most candidates were able to define the concept of responsibility accounting and to discuss and justify the KPI's that would be controllable by the production manager and justify those that would not. Candidates that didn't score well usually did so because their answer was brief and did not justify why a particular KPI should be within the remit of the production manager or not.

Variant 6

Task 1

The first element of this task asked for an explanation of a decision tree and how it should be used to make a decision on the Matt-rest World contract. It also asked for an explanation of the limitations of using decision tree methodology to make this decision. This tested core activity E. Candidate answers varied considerably. Some candidates explained the decision tree and how to use it very well and scored at level 3. However, others simply explained what they could see (for example, three levels of return), rather than explaining what the decision tree represented in terms of either the decisions or the relationships between the different options. Most candidates were able to recommend the correct decision from the tree, however, sometimes this was more through luck than judgement as the explanation of how to use the decision tree from right to left was not always clearly expressed. This limited some candidate scores. Most candidate answers for the limitations were good, with many scoring at level 3.

The second element of this task asked for an explanation of other factors the company should consider before making a final decision about whether to enter into a contract with Matt-rest World. This tested core activity E. Candidates were expected to recognise that this was about explaining non-financial factors (for example, starting a relationship with a relatively unknown distributor before understanding their reputation, especially given the good reputation AmaZZZing Beds had built up). Most candidates did recognise this and scored well. However, there were some candidates that continued to explain limitations to using expected values and decision trees in decision making, which had already been asked. There were also some candidates that missed the point that this was about whether to contract with Matt-rest World and instead gave factors about the move into Westland in a more general sense. This approach scored few if any marks.

The third element of this task asked for suggestions and justifications for three KPIs which would be appropriate to monitor the performance of the Westland distributor. This tested core activity C. Many candidates were able to suggest reasonable KPI's, with a good attempt at justification and therefore scored at either level 2 or level 3, depending on the depth and quality of the justification. Some candidates also explained how the KPIs should be calculated which, despite showing good preparation from past KPI tasks, was not needed here and therefore wasted time. Some candidates suggested and justified KPIs more relevant to AmaZZZing Beds rather than for the distributor, which did limit their score.

Task 2

The first element of this task asked for an explanation of the criteria for capitalisation of costs under IAS 16 Property, Plant and Equipment. It also asked for separate justification for the treatment, as either capital or revenue expenditure, of each of the individual costs listed in a table, based on the provisions of IAS 16. This tested core activity D. The first part regarding IAS 16 criteria should have been easy marks and most candidates did indeed score at level 3. Typically, candidates that didn't score well did so because they only

stated one of the two main criteria (future economic benefit and reliable measurement) and failed to comment on any of the other criteria in IAS 16 such as held for the supply of goods or services or expected to be used for more than 12 months. Regarding the treatment of the costs in the schedule, candidates that simply stated the treatment scored few marks, despite being correct, because the task clearly asked for justification. Candidates need to be mindful of the verbs used in the task and ensure that where they are asked to justify, explain or discuss, that they are doing this rather than simply stating, listing or identifying. Some candidates included an explanation of the need to depreciate the assets and alternative methods of depreciation. This was not asked for, scored no marks and therefore wasted time.

The second element of this task asked for an explanation of the impact of the Retail Director's suggestion on the profit reported in each company and how international transfer pricing rules would be applied in this case. It also asked for an explanation, whether, if the international pricing rules were not applied, this would be an example of tax evasion or tax avoidance. This tested core activity D. There were some good answers here, where candidates demonstrated that they understood the impact on profit of selling between group companies at cost and how international transfer pricing rules would mean that this would be deemed to occur at an arms-length price. Very few candidates identified that the adjustment to arms-length price would occur in the tax computations, instead commenting that this would affect reported profit. Other candidates were clearly unprepared for such a task. Most candidates were able to distinguish between tax evasion and tax avoidance, although many got muddled and very few were able to comment accurately about this situation.

The third element of this task asked for an explanation of the factors that would determine the level of investment required, in each element of working capital, for the new operation in Westland. This tested core activity F. This was not well answered. Many candidates used a framework of aggressive, moderate or conservative approaches to working capital management without going on to explain the impact of these approaches on each element of working capital in Westland. Other candidates misread the task and explained whether the investment should be from long-term or short-term sources of funding. Even those candidates who did structure their answer in terms of inventory, receivables and payables often failed to use the context of Westland and only discussed working capital in general terms.

Task 3

The first element of this task asked for explanation of why it was important to prepare budgets for the factory and how the budgets would help in the management of the factory. This tested core activity B. Most candidates clearly demonstrated an understanding of the purposes of budgeting. However, many candidate scores were limited to a low level 2 because they failed to give sufficient depth (for example, focusing on planning without explanation of other factors) or failed to explain the importance of budgeting in the context of the new factory. Some candidate answers just briefly discussed planning or control, whilst many answers just provided a list of six or seven purposes (or roles) of budgets with no attempt of explaining these in the context of the scenario. Some candidates also took the opportunity to explain the difference between incremental and zero based budgeting which was not relevant and wasted time.

The second element of this task asked for an explanation of how to construct the total production budget, the total material usage budget and the total material purchases budget for the quarter. It also asked for an explanation of two factors that would need to be considered when determining the finished goods inventory level. This tested core activity B. Regarding the construction of the budgets, a common mistake was to say that the production budget comprised raw materials plus direct labour and production overheads, demonstrating a lack of understanding. For those candidates who did recognise that the production budget was driven by the sales budget, many forgot to take into consideration any changes in inventory levels that would be needed. When explaining two factors to consider in determining the finished goods inventory level, a number of candidates incorrectly thought this referred to inventory valuation methods and discussed LIFO versus FIFO or cost versus net realisable value.

The third element of this task asked for an explanation of how the figures shown in a table would be used to make a decision on whether to choose Option A or Option B, giving reasons why each item was relevant of irrelevant to the decision. This tested core activity E. Most candidates demonstrated understanding of relevant cost. However, many were unable to explain how to use the figures to make a decision, although did clearly identify whether the costs were relevant or not. Some candidates chose to answer this from a financial accounting point of view looking at the difference in profit or the capitalisation of the cashflows, even though the requirement clearly stated to classify the costs as either relevant or irrelevant.

Task 4

The first element of this task asked for an explanation of what each of the fixed overhead variances indicated, how they would be calculated and whether they would be adverse or favourable. It also asked for reasons why the expenditure, efficiency and capacity variance might have arisen. This tested core activity C. Many candidates were able to explain how the variances would be calculated and could provide reasons for them, thereby earning at a high level 2 or 3. Candidates that didn't score well here typically did so because of a lack of technical understanding of the efficiency, capacity variances and total variances. Most candidates made a good attempt at using the information in the scenario to provide reasons for the variances, even though at times this was let down by the lack of technical understanding.

The second element of this task asked for an explanation of four areas of the CGMA Cost Transformation Model and how these could be applied in AmaZZZing Beds. This tested core activity A. Most candidates demonstrated general understanding of the four areas of the model, although many struggled to score above a mid-level 2 because they were unable to explain in the context of the business or to explain how it could be applied. For example, a typical candidate's answer explained the need for engendering a cost-conscious culture but failed to go on to explain how this could be achieved (perhaps by introducing TQM or reward systems). Some candidates were unable to distinguish between price and cost so struggled with the second area 'Managing the risk inherent in driving cost-competitiveness'.

Tips for future candidates

There are several key points to take into account when preparing for future Operational level case study examinations. These points are:

- Key to achieving a score at level 2 and above is to ensure that:
  - You have the technical knowledge and understanding of all of topics included in each of the core activities. It is not sufficient to rely on the fact that you remember it from the OTQ exams, because the chances are you won't. You need to revise technical material: if you don't have the knowledge, you can't score well.
  - You are able to apply your technical knowledge and understanding within the case study context. Simply reproducing rote-learned answers or pure knowledge of a topic area will score very few, if any, marks. Similarly, taking a non-targeted approach to an issue and commenting on everything that you know about it from a theoretical point of view will score few marks.
  - You are able to explain with clarity and comprehensively, rather than making unsupported statements. Writing comments such as, "this improves decision making", "this graph is essential" or "planning is enhanced" is not enough to gain any marks. Candidates must explain "how" and ''why'' this is the case. Explanations can quite often be improved by adding "because of …." at the end of a sentence. Explanations should also utilise the information given to you within the case study itself, especially financial information. For example, reasons for variances are often given to you in the unseen information, the skill is to pick this out and use it.
- To help you achieve this you need to:
  - Study the pre-seen material in depth. Ensure that you are very familiar with the business, especially the financial information, before the exam as this will help you with applying your knowledge and will save you time. Similarly, an awareness of the industry that the business is in will help you to think of the wider issues that might impact on decisions that you could be asked to comment on.
  - Practise, practise, practise past OCS exam tasks. Practising past tasks and then checking against the published answers will help you to understand what the examiner is looking for.
- On the day:
  - It is important to take time to plan your answer so that you are able to apply your knowledge to the specifics of the case. I suggest that for certain tasks you plan your answers in the answer screen itself. For example, if you are asked for the potential benefits and problems of activity-based costing, I suggest that you first note down headings for benefits and problems. Under each heading list your benefits and problems; these will become your sub-headings. Then you can

write a short paragraph under each sub-heading. This will allow you time to think about all of the points that you want to make and will help to give your answer a clear format. Ultimately, it should save you time.

- Please take care over how your answer looks. Some answers are very difficult to read because of poor spelling and grammar. Whilst this examination is not a test of English, it is important that answers are presented well so that markers can see that you have demonstrated clear understanding of the issues.

Operational Level Case Study November 2020–February 2021
Marking Guidance
Variant 1

About this marking scheme

This marking scheme has been prepared for the CIMA 2019 professional qualification Operational Case Study [November 2020–February 2021].

The indicative answers will show the expected or most orthodox approach; however the nature of the case study examination tasks means that a range of responses will be valid. The descriptors within this level-based marking scheme are holistic and can accommodate a range of acceptable responses.

General marking guidance is given below, markers are subject to extensive training and standardisation activities and ongoing monitoring to ensure that judgements are being made correctly and consistently.

Care must be taken not to make too many assumptions about future marking schemes on the basis of this document. While the guiding principles remain constant, details may change depending on the content of a particular case study examination form.

General marking guidance

- Marking schemes should be applied positively, with candidates rewarded for what they have demonstrated and not penalised for omissions.
- All marks on the scheme are designed to be awarded and full marks should be awarded when all level descriptor criteria are met.
- The marking scheme and indicative answers are provided as a guide to markers. They are not intended to be exhaustive and other valid approaches must be rewarded. Equally, students do not have to make all of the points mentioned in the indicative answers to receive the highest level of the marking scheme.
- An answer which does not address the requirements of the task must be awarded no marks.

- Markers should mark according to the marking scheme and not their perception of where the passing standard may lie.

  Where markers are in doubt as to the application of the marking scheme to a particular candidate script, they must contact their lead marker.

How to use this levels-based marking scheme

1. Read the candidate's response in full

2. Select the level

- For each trait in the marking scheme, read each level descriptor and select one, using a best-fit approach.
- The response does not need to meet all of the criteria of the level descriptor – it should be placed at the level when it meets more of the criteria of this level than the criteria of the other levels.
- If the work fits more than one level, judge which one provides the best match.
- If the work is on the borderline between two levels, then it should be placed either at the top of the lower band or the bottom of the higher band, depending on where it fits best.

3. Select a mark within the level

- Once you have selected the level, you will need to choose the mark to apply.
- A small range of marks may be given at each level. You will need to use your professional judgement to decide which mark to allocate.
- If the answer is of high quality and convincingly meets the requirements of the level, then you should award the highest mark available. If not, then you should award a lower mark within the range available, making a judgement on the overall quality of the answer in relation to the level descriptor.

Summary of the core activities tested within each sub-task

Sub-task	Core Activity		Sub-task Weighting (% section time)
Section 1			
(a)	B	Prepare budget information and assess its use for planning and control purposes.	52%
(b)	F	Prepare information to manage working capital.	48%
Section 2			
(a)	A	Prepare costing information for different purposes to meet the needs of management.	20%
(b)			32%
(c)	E	Prepare information to support short-term decision making.	48%
Section 3			
(a)	C	Analyse performance using financial and non-financial information.	48%
(b)			
(c)	D	Apply relevant financial reporting standards and corporate governance, ethical and tax principles.	52%
Section 4			
(a)	B	Prepare budget information and assess its use for planning and control purposes.	36%
(b)	C	Analyse performance using financial and non-financial information.	32%
(c)	E	Prepare information to support short-term decision making.	32%

SECTION 1			
Task (a) Explain how time series analysis has been applied to the base data to derive the trend and seasonal variations and why the trend and seasonal variations need to be separated from the base data. Please also explain what this data shows in respect of the demand for hybrid mattresses from Eastland's hotel industry.			
Trait			
How calculated	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates some technical understanding of how time series analysis has been applied to derive the trend and seasonal variations. The explanation is likely to lack clarity, be incomplete and may not refer to the information given.	1 – 2
	Level 2	Demonstrates reasonable technical understanding of how time series analysis has been applied to derive the trend and seasonal variations. The explanation may lack some clarity or depth but does make some reference to the information given.	3 – 4
	Level 3	Demonstrates good technical understanding of how time series analysis has been applied to derive the trend and seasonal variations. The explanation is complete, largely clear and does reference the information given.	5
Why separated	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Provides justification for why the trend and seasonal variations are separated, but this is brief and/or lacks clarity. There is no reference to the information given.	1
	Level 2	Provides justification for why the trend and seasonal variations are separated, which is mostly clear. There may not be reference to the information given.	2 – 3
	Level 3	Provides justification for why the trend and seasonal variations are separated, which is sensible and clear. There is reference to the information given.	4

Meaning of data	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Identifies some aspects of what the trend and seasonal variation data show with no reference to the business context.	1
	Level 2	Identifies mostly accurately what the trend and seasonal variation data show and attempts to link this to the business context.	2 – 3
	Level 3	Identifies accurately what the trend and seasonal variations show with a good attempt to link this to the business context.	4
Task (b) **Explain** the financial impact to our business of selling to these new hotel customers on credit rather than for cash. Please also explain the actions that we should take when approving customers, setting credit terms and monitoring the amounts owing by these new hotel customers.			
Trait			
Impact of selling on credit	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates some understanding of the impact to the business of selling on credit but the explanation lacks clarity and is not applied to the scenario.	1
	Level 2	Demonstrates reasonable understanding of the impact to the business of selling on credit. The explanation may lack some clarity and may not link this to the scenario in terms of the nature of the potential customers.	2 – 3
	Level 3	Demonstrates good understanding of the impact to the business of selling on credit with clear explanation which is linked to the scenario in terms of the nature of the potential customers.	4

Actions	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains actions related to at least one of the areas (approving customers, setting credit terms and monitoring receivable balances). The explanation may lack clarity and/or depth.	1 – 3
	Level 2	Explains actions related to at least two of the areas (approving customers, setting credit terms and monitoring receivable balances). The explanation may lack some clarity or depth in parts.	4 – 6
	Level 3	Explains with clarity, actions related to all three of the areas (approving customers, setting credit terms and monitoring receivable balances).	7 – 8

SECTION 2			
Task (a) **Explain** the issues we should consider when choosing the base for the absorption rates in the new production facility.			
Trait			
Absorption costing base	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates understanding of at least one issue to consider when choosing the base for the absorption rates but there is likely to be limited or no reference to the scenario and/or a lack of depth and/or clarity.	1 – 2
	Level 2	Demonstrates understanding of at least one issue to consider when choosing the base for the absorption rates. There is some reference to the scenario and the explanation is mostly clear.	3 – 4
	Level 3	Demonstrates understanding of at least two issues to consider when choosing the base for the absorption rates. There is clear explanation and good reference to the scenario.	5
Task (b) **Explain** how we could improve the accuracy of our costing information by using a digital costing system and the benefits of the improved accuracy for the business.			
Trait			
Digital costing system	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains what is meant by a digital costing system but does not necessarily explain how this would improve costing information. Some attempt to explain benefits of more accurate costing information which are not necessarily linked to the use of digital information. The explanation is likely to lack clarity.	1 – 3
	Level 2	Explains what is meant by a digital costing system and attempts to explain how this would improve costing information. Reasonable attempt to explain benefits of more accurate costing information. The explanation may lack clarity.	4 – 6

	Level 3	Explains clearly what is meant by a digital costing system and how this would improve costing information. Good attempt to explain benefits of more accurate costing information.	7 – 8
Task (c) Explain the decision tree and how it can be used to make a decision about which contract to choose. Please also explain the limitations of using this decision tree to make this decision.			
Trait			
Decision tree and decision	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates some understanding of what the decision tree represents in terms of the two contracts. The explanation of how to make the decision may be missing or lack depth and clarity.	1 – 2
	Level 2	Demonstrates reasonable understanding of what the decision tree represents in terms of the two contracts. There is an attempt to explain how to make the decision based on the tree using the information in the workings, but this might not be wholly accurate. The explanation may lack some clarity.	3 – 5
	Level 3	Demonstrates good understanding of what the decision tree represents in terms of the two contracts. Explains mostly accurately how to make the decision with reference to the tree and workings. The explanation is clear.	6 – 7

SECTION 3			
Task (a) **Explain** what each of the fixed production overhead variances mean and reasons why each variance has occurred. Please also explain any limitations of using these variances to control the fixed production overheads at the new facility.			
Trait			
The variances	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates technical understanding of at least one of the three variances. The explanation is likely to lack clarity and the reasons given may not relate to the correct variance or be drawn from the scenario.	1 – 2
	Level 2	Demonstrates technical understanding of at least two of the three variances. The explanation may lack some clarity and the reasons given may not always relate to the correct variance or be drawn from the scenario.	3 – 5
	Level 3	Demonstrates technical understanding of all three variances. The explanation is mostly clear, and the reasons given mostly relate to the correct variance and are drawn from the scenario.	6 – 7
Limitations for o/head control	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains at least one limitation but the explanation is brief or lacks clarity and does not reference the scenario.	1 – 2
	Level 2	Explains at least two limitations but the explanation may lack clarity and may not reference the scenario.	3 – 4
	Level 3	Explains at least two limitations in a clear manner and makes reference to the scenario.	5

Task (b) Provide answers to each of Ben's queries about non-current assets in the new production facility.			
Trait			
Revaluation	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates limited understanding of the *IAS 16* rules for revaluation of non-current assets and how to account for revaluations. Explanation lacks depth and clarity.	1 – 2
	Level 2	Demonstrates reasonable understanding of the *IAS 16* rules for revaluation of non-current assets and how to account for revaluations. Explanation may lack depth or clarity.	3 – 5
	Level 3	Demonstrates good understanding of the *IAS 16* rules for revaluation of non-current assets and how to account for revaluations. Explanation is mostly clear.	6 – 7
Useful life	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates limited understanding of the *IAS 16* rules for determining useful life and changing useful life and how this would be reflected in the financial statements. Explanation lacks clarity and depth.	1 – 2
	Level 2	Demonstrates reasonable understanding of the *IAS 16* rules for determining useful life and changing useful life and how this would be reflected in the financial statements. Explanation may lack clarity or depth.	3 – 4
	Level 3	Demonstrates good understanding of the *IAS 16* rules for determining useful life and changing useful life and how this would be reflected in the financial statements. Explanation is mostly clear.	5 – 6

SECTION 4			
Task (a) Explain how a ZBB approach should be applied to create a budget for the raw materials handling function and how this might help improve operational efficiency.			
Trait			
ZBB	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates some understanding of what a ZBB approach involves but there is little attempt to apply this to the raw materials handling function. There is also likely to be little, if any, reference made to how this will help to improve operational efficiency.	1 – 3
	Level 2	Demonstrates reasonable understanding of what a ZBB approach involves and there is an attempt to apply this to the raw materials handling function. There may not be any reference made to how this will help to improve operational efficiency.	4 – 6
	Level 3	Demonstrates good understanding of what a ZBB approach involves and there is a reasonable attempt to apply this to the raw materials handling function. There is reasonable reference made to how this will help to improve operational efficiency.	7 – 9
Task (b) Suggest three KPIs which are appropriate for monitoring the performance of the Machinery Maintenance Department and explain why each of these are appropriate.			
Trait			
KPIs	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Identifies one or two KPIs which are relevant for monitoring the performance of the Machinery Maintenance Department, but the explanation is either missing or not clear.	1 – 3
	Level 2	Identifies two or three KPIs which are relevant for monitoring the performance of the Machinery Maintenance Department, but the explanation lacks some clarity.	4 – 6

	Level 3	Identifies three KPIs which are wholly appropriate for monitoring the performance of the Machinery Maintenance Department which are well explained in the context of the business.	7 – 8
Task (c) Explain whether each of the costs are relevant or irrelevant costs of deciding whether to accept the order.			
Trait			
Relevant costs	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates understanding of the principle of relevant cost and identifies correctly some of the costs which are relevant and not relevant. There is likely to be little attempt to explain why these are relevant or not relevant.	1 – 3
	Level 2	Demonstrates understanding of the principle of relevant cost and identifies correctly more than half of the costs which are relevant and not relevant. There is a reasonable attempt to explain why these are relevant or not relevant.	4 – 6
	Level 3	Demonstrates understanding of the principle of relevant cost and identifies correctly most of the costs which are relevant and not relevant. There is a good attempt to explain why these are relevant or not relevant.	7 – 8

Operational Level Case Study November 2020–February 2021
Marking Guidance
Variant 2

About this marking scheme

This marking scheme has been prepared for the CIMA 2019 professional qualification Operational Case Study [November 2020–February 2021].

The indicative answers will show the expected or most orthodox approach; however the nature of the case study examination tasks means that a range of responses will be valid. The descriptors within this level-based marking scheme are holistic and can accommodate a range of acceptable responses.

General marking guidance is given below, markers are subject to extensive training and standardisation activities and ongoing monitoring to ensure that judgements are being made correctly and consistently.

Care must be taken not to make too many assumptions about future marking schemes on the basis of this document. While the guiding principles remain constant, details may change depending on the content of a particular case study examination form.

General marking guidance

- Marking schemes should be applied positively, with candidates rewarded for what they have demonstrated and not penalised for omissions.
- All marks on the scheme are designed to be awarded and full marks should be awarded when all level descriptor criteria are met.
- The marking scheme and indicative answers are provided as a guide to markers. They are not intended to be exhaustive and other valid approaches must be rewarded. Equally, students do not have to make all of the points mentioned in the indicative answers to receive the highest level of the marking scheme.
- An answer which does not address the requirements of the task must be awarded no marks.

- Markers should mark according to the marking scheme and not their perception of where the passing standard may lie.

  Where markers are in doubt as to the application of the marking scheme to a particular candidate script, they must contact their lead marker.

How to use this levels-based marking scheme

1. Read the candidate's response in full

2. Select the level

- For each trait in the marking scheme, read each level descriptor and select one, using a best-fit approach.
- The response does not need to meet all of the criteria of the level descriptor – it should be placed at the level when it meets more of the criteria of this level than the criteria of the other levels.
- If the work fits more than one level, judge which one provides the best match.
- If the work is on the borderline between two levels, then it should be placed either at the top of the lower band or the bottom of the higher band, depending on where it fits best.

3. Select a mark within the level

- Once you have selected the level, you will need to choose the mark to apply.
- A small range of marks may be given at each level. You will need to use your professional judgement to decide which mark to allocate.
- If the answer is of high quality and convincingly meets the requirements of the level, then you should award the highest mark available. If not, then you should award a lower mark within the range available, making a judgement on the overall quality of the answer in relation to the level descriptor.

Summary of the core activities tested within each sub-task

Sub-task	Core Activity		Sub-task Weighting (% section time)
Section 1			
(a)	A	Prepare costing information for different purposes to meet the needs of management.	52%
(b)	B	Prepare budget information and assess its use for planning and control purposes.	48%
Section 2			
(a)	E	Prepare information to support short-term decision making.	40%
(b)			40%
(c)	D	Apply relevant financial reporting standards and corporate governance, ethical and tax principles.	20%
Section 3			
(a)	C	Analyse performance using financial and non-financial information.	40%
(b)			32%
(c)	B	Prepare budget information and assess its use for planning and control purposes.	28%
Section 4			
(a)	E	Prepare information to support short-term decision making.	44%
(b)			16%
(c)	F	Prepare information to manage working capital.	40%

SECTION 1			
Task (a) **Explain** the nature and types of cost included and how to establish the total cost of each video over its lifetime. Please also explain any difficulties associated with establishing this total cost per video.			
Trait			
The costs	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains accurately the nature and type of one or two of the costs involved but demonstrates little understanding of how to establish the cost per video.	1 – 2
	Level 2	Explains accurately the nature and type of some of the costs involved and demonstrates some understanding of how to establish the cost per video.	3 – 5
	Level 3	Explains the nature and type of most of the costs involved and demonstrates reasonable understanding of how to establish the cost per video.	6 – 7
Difficulties	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains at least one difficulty with establishing the cost per video but the explanation is likely to lack clarity or application to the scenario.	1 – 2
	Level 2	Explains at least two difficulties with establishing the cost per video but the explanation may lack some clarity or application to the scenario.	3 – 4
	Level 3	Explains at least three difficulties with establishing the cost per video and the explanation is mostly clear and well applied.	5 – 6

Task (b) Explain how activity based budgeting can be used to work out how many hours a week will be needed to set up rooms and book appointments at the Northern Clinic. Please also explain the difficulties of estimating how many part-time employees will be needed each week in the clinic.			
Trait			
ABB	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates some understanding of how to apply an ABB approach to establish the hours required for the two duties. The explanation is likely to lack clarity and will make little reference to the scenario.	1 – 2
	Level 2	Demonstrates reasonable understanding of how to apply an ABB approach to establish the hours required for the two duties. The explanation may lack some clarity but there will be some attempt to reference to the scenario.	3 – 4
	Level 3	Demonstrates good understanding of how to apply an ABB approach to establish the hours required for the two duties. The explanation is clear and makes good use of the scenario.	5 – 6
Difficulties 2	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains at least one difficulty, but the explanation is likely to lack clarity and not reference the scenario.	1 – 2
	Level 2	Explains at least two difficulties, but the explanation may lack some clarity, although there is some attempt to reference the scenario.	3 – 4
	Level 3	Explains clearly and with reference to the scenario at least three difficulties.	5 – 6

SECTION 2

Task (a) Explain the profit-volume chart and the information it shows us. Please also explain whether the chart indicates that we should concentrate our selling and marketing activities on certain services.			
Trait			
PV chart	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains some of the information shown by the profit-volume chart, but the explanation lacks clarity and makes little reference to the data in the chart.	1 – 2
	Level 2	Explains some of the information shown by the profit-volume chart and does make reference to the data in the chart. The explanation may lack a little clarity.	3 – 4
	Level 3	Explains clearly most of the information shown by the profit-volume chart and makes good reference to the data in the chart.	5 - 6
Services	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates understanding that different services contribute differently to profit (per the c/s margin) but explains little else in respect of whether to focus on certain services. The explanation lacks clarity.	1
	Level 2	Demonstrates understanding that different services contribute differently to profit (per the c/s margin) and does attempt to explain whether to focus on certain services. The explanation may lack some clarity.	2 – 3
	Level 3	Demonstrates understanding that different services contribute differently to profit (per the c/s margin) and does attempt to explain whether to focus on certain services. The explanation is clear and does also give some practical issues associated with focusing on certain services.	4

Task (b) **Explain** whether each of the above items of expenditure should be initially recorded as a non-current asset, and if so, why that is the case. Please also explain how any expenditure which cannot be initially recorded as a non-current asset will be treated in our financial statements for the year ending 30 June 2021.			
Trait			
Not capitalised	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains what is meant by a digital costing system but does not necessarily explain how this would improve costing information. Some attempt to explain benefits of more accurate costing information which are not necessarily linked to the use of digital information. The explanation is likely to lack clarity.	1 – 2
	Level 2	Explains what is meant by a digital costing system and attempts to explain how this would improve costing information. Reasonable attempt to explain benefits of more accurate costing information. The explanation may lack clarity.	3 – 4
	Level 3	Explains clearly what is meant by a digital costing system and how this would improve costing information. Good attempt to explain benefits of more accurate costing information.	5
Capitalised	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates some understanding of the rules on *IAS 16* for the recognition of PPE and attempts to accurately apply these to the scenario. The explanation is likely to lack clarity.	1 – 2
	Level 2	Demonstrates reasonable understanding of the rules on *IAS 16* for the recognition of PPE and attempts to apply these accurately to the scenario. The explanation may lack clarity.	3 – 4
	Level 3	Demonstrates good understanding of the rules on *IAS 16* for the recognition of PPE and applies these correctly to the scenario. The explanation is clear.	5

Task (c) Explain how our taxable profit will differ to our accounting profit for the year ending 30 June 2021 as a result of purchasing the computer equipment and how this will affect out tax payable in respect of the year.			
Trait			
Taxable profit	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates understanding that the difference relates to accounting depreciation and tax depreciation, but the explanation lacks clarity and makes little reference to information given in the scenario.	1 – 2
	Level 2	Demonstrates understanding that the difference relates to accounting depreciation and tax depreciation. The explanation may lack a little clarity but makes some reference to the information given in the scenario.	3 – 4
	Level 3	Demonstrates understanding that the difference relates to accounting depreciation and tax depreciation. The explanation is clear and makes good reference to the information given in the scenario.	5

SECTION 3			
Task (a) **Explain** what both sets of variances in Table 2 mean and the benefits of each method of calculation. Please also explain the possible reasons why the mix of services sold has changed.			
Trait			
Meaning of variances	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains the meaning of the variances with some technical accuracy. There is likely to be confusion between the two methods and the explanation is likely to lack clarity.	1 – 2
	Level 2	Explains the meaning of the variances with reasonable technical accuracy. There may be a little confusion between the two methods and the explanation may lack some clarity at times.	3 – 4
	Level 3	Explains clearly the meaning of the variances with technical accuracy.	5
Benefits and reasons	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Provides at least one reason for the change in mix but does not consider the benefits of each method.	1 – 2
	Level 2	Provides at least one reason for the change in mix and does consider the benefits of at least one of the methods. The explanation may lack clarity.	3 – 4
	Level 3	Provides at least one reason for the change in mix that is fully applied to the scenario and considers the benefits of both methods in a clear manner.	5

Task (b) Explain what the KPI measures identified in Table 3 indicate about the comparative performance of the clinics.			
Trait			
KPIs	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains what some of the KPIs indicate about sales performance but does not consider the differences in client base. The explanation is likely to lack clarity.	1 - 3
	Level 2	Explains what most of the KPIs indicate about sales performance and makes an attempt to consider the differences in client base. The explanation may lack clarity	4 - 6
	Level 3	Explains what all of the KPIs indicate about sales performance and does consider the differences in client base. The explanation is clear.	7 – 8
Task (c): Explain the benefits and drawbacks of involving the Clinic Managers in the setting of their individual clinic's budget and KPI targets.			
Trait			
Budget participation	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains at least one benefit or drawback. The explanation is likely to lack clarity and not refer to the scenario.	1 – 2
	Level 2	Explains at least three benefits or drawbacks. The explanation may lack some clarity and may not reference the scenario.	3 – 5
	Level 3	Explains at least three benefits and drawbacks (with at least one of each). The explanation is clear and references the scenario.	6 – 7

SECTION 4			
Task (a) Explain for each of the items on Helene's schedule, which are relevant and which are irrelevant to the decision whether to proceed with the conference.			
Trait			
Relevant costs	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates understanding of the principle of relevant cost and identifies correctly some of the costs which are relevant and not relevant. There is likely to be little attempt to explain why these are relevant or not relevant.	1 – 4
	Level 2	Demonstrates understanding of the principle of relevant cost and identifies correctly more than half of the costs which are relevant and not relevant. There is a reasonable attempt to explain why these are relevant or not relevant.	5 – 8
	Level 3	Demonstrates understanding of the principle of relevant cost and identifies correctly most of the costs which are relevant and not relevant. There is a good attempt to explain why these are relevant or not relevant.	9 – 11
Task (b) Explain two additional factors that should be considered when making the decision.			
Trait			
Additional factors	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains one additional factor but the explanation lacks clarity.	1
	Level 2	Explains at least one additional factor. There may be a lack of clarity in the explanation.	2 – 3
	Level 3	Explains at least two additional factors and the explanation is clear and well applied.	4

Task (c) Explain the factors that need to be considered when investing the cash of the business in short-term investments.			
Trait			
ST investing	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains at least one of the factors that needs to be considered, although the explanation lacks clarity and makes no reference to the business.	1 – 3
	Level 2	Explains at least two of the factors that need to be considered, although the explanation may lack some clarity and may make only limited reference to the business.	4 – 7
	Level 3	Explains at least three of the factors that need to be considered. The explanation is clear and makes good reference to the business.	8 – 10

Operational Level Case Study November 2020–February 2021
Marking Guidance
Variant 3

About this marking scheme

This marking scheme has been prepared for the CIMA 2019 professional qualification Operational Case Study [November 2020–February 2021].

The indicative answers will show the expected or most orthodox approach; however the nature of the case study examination tasks means that a range of responses will be valid. The descriptors within this level-based marking scheme are holistic and can accommodate a range of acceptable responses.

General marking guidance is given below, markers are subject to extensive training and standardisation activities and ongoing monitoring to ensure that judgements are being made correctly and consistently.

Care must be taken not to make too many assumptions about future marking schemes on the basis of this document. While the guiding principles remain constant, details may change depending on the content of a particular case study examination form.

General marking guidance

- Marking schemes should be applied positively, with candidates rewarded for what they have demonstrated and not penalised for omissions.
- All marks on the scheme are designed to be awarded and full marks should be awarded when all level descriptor criteria are met.
- The marking scheme and indicative answers are provided as a guide to markers. They are not intended to be exhaustive and other valid approaches must be rewarded. Equally, students do not have to make all of the points mentioned in the indicative answers to receive the highest level of the marking scheme.
- An answer which does not address the requirements of the task must be awarded no marks.

- Markers should mark according to the marking scheme and not their perception of where the passing standard may lie.

  Where markers are in doubt as to the application of the marking scheme to a particular candidate script, they must contact their lead marker.

How to use this levels-based marking scheme

1. Read the candidate's response in full

2. Select the level

- For each trait in the marking scheme, read each level descriptor and select one, using a best-fit approach.
- The response does not need to meet all of the criteria of the level descriptor – it should be placed at the level when it meets more of the criteria of this level than the criteria of the other levels.
- If the work fits more than one level, judge which one provides the best match.
- If the work is on the borderline between two levels, then it should be placed either at the top of the lower band or the bottom of the higher band, depending on where it fits best.

3. Select a mark within the level

- Once you have selected the level, you will need to choose the mark to apply.
- A small range of marks may be given at each level. You will need to use your professional judgement to decide which mark to allocate.
- If the answer is of high quality and convincingly meets the requirements of the level, then you should award the highest mark available. If not, then you should award a lower mark within the range available, making a judgement on the overall quality of the answer in relation to the level descriptor.

Summary of the core activities tested within each sub-task

Sub-task	Core Activity		Sub-task weighting (% section time)
Section 1			
(a)	B	Prepare budget information and assess its use for planning and control purposes.	48%
(b)	D	Apply relevant financial reporting standards and corporate governance, ethical and tax principles.	16%
(c)			36%
Section 2			
(a)	E	Prepare information to support short-term decision making.	48%
(b)	A	Prepare costing information for different purposes to meet the needs of management.	52%
Section 3			
(a)	C	Analyse performance using financial and non-financial information.	44%
(b)			32%
(c)	B	Prepare budget information and assess its use for planning and control purposes.	24%
Section 4			
(a)	E	Prepare information to support short-term decision making.	52%
(b)	F	Prepare information to manage working capital.	48%

SECTION 1			
Task (a) **Explain** how changing each of the four variables will affect the budget for the EasiMattress range and why the scale of these effects is different depending on the variable changed. Please also explain the benefits and limitations of this what-if analysis.			
Trait			
Changing variables	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains how changing some of the variables affects the budget but adds little value in terms of explaining why different changes have different effects. The explanation lacks clarity.	1 – 2
	Level 2	Explains how changing most of the variables affects the budget and attempts to add value in terms of explaining why different changes have different effects. The explanation may lack some clarity.	3 – 5
	Level 3	Explains clearly how changing all the variables affects the budget and why different changes have different effects.	6 – 7
Benefits and limitations	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains at least one benefit or limitation. The explanation lacks clarity and is generic rather than applied to this what-if analysis.	1 – 2
	Level 2	Explains at least two benefits or limitations and makes a reasonable attempt to apply these to the scenario. The explanation may lack clarity.	3 – 4
	Level 3	Explains clearly at least two well-applied points that cover both benefits and limitations.	5
Task (b) **Explain** whether the expenditure to recondition and test the binding machine can be capitalised.			
Trait			
Binding machine	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains the *IAS 16* rules for recognition in a general sense but does not recognise this as subsequent expenditure and does not mention expenditure on the testing equipment. The explanation lacks clarity.	1

	Level 2	Explains the *IAS 16* rules for recognition in a general sense and does attempt to recognise this as subsequent expenditure. The explanation is likely to lack clarity and will have limited application to the scenario. There might not be mention of the expenditure on testing.	2 – 3
	Level 3	Explains the *IAS 16* rules in respect of subsequent expenditure and applies these appropriately to the scenario. The expenditure on testing is also accurately explained.	4
Task (c) Explain how the asset that will be leased on 1 January 2021 will be initially recognised and the impact of the lease on profit or loss for the year to 30 June 2021.			
Right-of-use asset	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates some understanding of the rules on *IFRS 16* for the initial recognition of the right-of-use asset but there is limited application to the scenario. The impact on profit for the year to 30 June 2021 might not be considered.	1 – 2
	Level 2	Demonstrates reasonable understanding of the rules on *IFRS 16* for the initial recognition of the right-of-use asset and there is a reasonable attempt to apply these to the scenario. The impact on profit for the year to 30 June 2021 is probably considered, although the need to pro-rata is not mentioned. The explanation may lack some clarity.	3 – 4
	Level 3	Demonstrates good understanding of the rules on *IFRS 16* for the initial recognition of the right-of-use asset and there is a good attempt to apply these to the scenario. The impact on profit for the year to 30 June 2021 is fully considered. The explanation is clear.	5
Lease liability	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates some understanding of the rules on *IFRS 16* for the initial recognition of the lease liability but there is limited application to the scenario. The impact on profit for the year to 30 June 2021 might not be considered.	1

	Level 2	Demonstrates reasonable understanding of the rules on *IFRS 16* for the initial recognition of the lease liability and there is a reasonable attempt to apply these to the scenario. The impact on profit for the year to 30 June 2021 is probably considered, although the need to pro-rata is not mentioned. The explanation may lack some clarity.	2 – 3
	Level 3	Demonstrates good understanding of the rules on *IFRS 16* for the initial recognition of the lease liability and there is a good attempt to apply these to the scenario. The impact on profit for the year to 30 June 2021 is fully considered. The explanation is clear.	4

SECTION 2			
Task (a) **Explain** the information in Schedule 1. Please also explain which option we would take using a risk seeking, risk neutral and risk averse approach to the decision, giving one limitation with each approach.			
Trait			
Schedule 1	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains some aspects of the information in the schedule but the explanation lacks clarity and is unlikely to refer to the data in the schedule.	1
	Level 2	Explains most aspects of the information in the schedule but the explanation may lack some clarity. There is an attempt to refer to the data in the schedule.	2 – 3
	Level 3	Explains clearly most aspects of the information in the schedule and makes good reference to the data in the question.	4
Risk attitudes	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates some understanding of how attitude to risk will affect the decision and attempts to apply this to reach the decisions, which may not be technically accurate. The explanation is likely to lack clarity and may not give any limitations.	1 – 3
	Level 2	Demonstrates reasonable understanding of how attitude to risk will affect the decision and attempts to apply this to reach the decisions, at least one of which is technically accurate. The explanation may lack some clarity but will give some limitations.	4 – 6
	Level 3	Demonstrates good understanding of how attitude to risk will affect the decision and identifies at least two of the decisions with technical accuracy. The explanation is clear and gives a limitation of each risk attitude which is sensible.	7 – 8

Task (b) Explain how an ABC approach would change how we absorb fixed production overheads and the impact that this would have on product costs. Please illustrate your explanation with reference to the cutting & quilting process for covers production.			
Trait			
How different?	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates some understanding of the differences between an ABC and an absorption costing approach with limited or no reference to the specific production process for this business.	1 – 2
	Level 2	Demonstrates a reasonable understanding of the differences between an ABC and an absorption costing approach with some reference to the specific production process for this business.	3 – 5
	Level 3	Demonstrates full and accurate understanding of the differences between an ABC and an absorption costing approach with good reference to the specific production process for this business.	6 – 7
Product costs	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Identifies that using an ABC approach will affect the costings but explanation lacks clarity regarding the specific products. There is limited reference made to the effect of the differences in the production process identified in the reference material.	1 – 2
	Level 2	Identifies that the new mattress will take a greater share of the overhead cost with an ABC approach with some explanation of why this is the case using differences in the production process identified in the reference material.	3 – 4
	Level 3	Identifies that the new mattress will take a greater share of the overhead cost with an ABC approach with a good explanation of why this is the case using differences in the production process identified in the reference material.	5 – 6

SECTION 3			
Task (a) **Explain** for both covers production and assembly for the EasiMattress range what the direct labour variances mean and the reasons for their occurrence.			
Trait			
Variance understanding	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates some understanding of what the direct labour variances mean. The explanation may lack clarity.	1 – 2
	Level 2	Demonstrates reasonable understanding of what the direct labour variances mean. The explanation may lack some clarity.	3 – 4
	Level 3	Demonstrates good understanding of what the direct labour variances mean. The explanation is clear.	5
Reasons	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains some of the reasons for the variances, but these are not necessarily drawn from the scenario or related to the correct variance. The explanation is likely to lack clarity.	1 – 2
	Level 2	Explains most of the reasons for the variances. Some of these might be generic rather than drawn from the scenario but for the most part the reason will relate to the correct variance. The explanation may lack some clarity.	3 – 4
	Level 3	Explains most of the reasons for the variances based on the scenario and these will link to the correct variance. The explanation will be clear.	5 – 6

Task (b) Identify and justify three KPIs that could be introduced to monitor the performance of our production supervisors.			
Trait			
KPIs	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Identifies and justifies at least one KPI that is appropriate to monitor the performance of production supervisors. The justification may lack clarity.	1 – 3
	Level 2	Identifies and justifies at least two KPIs that are appropriate to monitor the performance of production supervisors. The justification may lack clarity.	4 – 6
	Level 3	Identifies and justifies at least three KPIs that are appropriate to monitor the performance of production supervisors. The justification is clear.	7 – 8
Task (c): Explain what is meant by a feedback control system and how it would apply in our business, using the direct labour variances to illustrate your explanation.			
Trait			
Feedback control	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains some of the features of a feedback control system, but the explanation lacks clarity. There is little, if any, reference to the scenario.	1 – 2
	Level 2	Explains some of the features of a feedback control system, but the explanation may lack some clarity. There is an attempt to reference the scenario.	3 – 4
	Level 3	Explains most of the features of a feedback control system, and the explanation is clear. There is a reasonable attempt to reference to the scenario.	5 – 6

SECTION 4			
Task (a) **Explain** how to use the graph to determine the feasible region and the optimal production plan and what that optimal production plan is. Please also explain the factors we should consider before proceeding with this production plan.			
Trait			
The graph	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains with some accuracy where the feasible region of the graph is, but explanation lacks clarity. The optimal solution might not have been stated, but if it has, it is likely to have been incorrectly identified based on the explanation of the feasible region.	1 – 2
	Level 2	Explains with reasonable accuracy where the feasible region on the graph is and identifies the optimal solution based on this explanation (that is, not necessarily the correct solution, but consistent with their explanation of the feasible region).	3 – 4
	Level 3	Explains accurately where the feasible region on the graph is and identifies the correct optimal solution.	5 – 6
Other factors	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains at least one factor to be considered, but the explanation may lack clarity and is unlikely to be applied to the scenario.	1 – 2
	Level 2	Explains at least two factors to be considered, but the explanation may lack some clarity and might not always be applied to the scenario.	3 – 5
	Level 3	Explains clearly at least three factors to be considered and the explanation makes good use of the scenario.	6 – 7
Task (b) **Explain** the key principle of the EOQ model and the information required to calculate EOQs for our fabric and padding raw materials. Please also explain the appropriateness of the EOQ model assumptions for our business and how the model could be adapted to deal with relaxing these assumptions.			
Trait			
EOQ model	**Level**	**Descriptor**	**Marks**
		No rewardable material	0

	Level 1	Demonstrates some understanding of the principle of the EOQ model and the information required. The explanation is likely to lack clarity.	1 – 2
	Level 2	Demonstrates reasonable understanding of the principle of the EOQ model and the information required. The explanation may lack some clarity.	3 – 4
	Level 3	Demonstrates good understanding of the principle of the EOQ model and the information required. The explanation is clear.	5
Assumptions	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains some of the assumptions of the EOQ model but does not necessarily explain the appropriateness of these to the business. Adaptions to the model are unlikely to be considered.	1 – 2
	Level 2	Explains some of the assumptions of the EOQ model and does attempt to explain the appropriateness of these to the business. Adaptions to the model may not have been considered.	3 – 5
	Level 3	Explains most of the assumptions of the EOQ model and makes a good attempt to explain the appropriateness of these to the business. Adaptions to the model are considered and are sensible.	6 – 7

Operational Level Case Study November 2020–February 2021
Marking Guidance
Variant 4

About this marking scheme

This marking scheme has been prepared for the CIMA 2019 professional qualification Operational Case Study [November 2020–February 2021].

The indicative answers will show the expected or most orthodox approach; however the nature of the case study examination tasks means that a range of responses will be valid. The descriptors within this level-based marking scheme are holistic and can accommodate a range of acceptable responses.

General marking guidance is given below, markers are subject to extensive training and standardisation activities and ongoing monitoring to ensure that judgements are being made correctly and consistently.

Care must be taken not to make too many assumptions about future marking schemes on the basis of this document. While the guiding principles remain constant, details may change depending on the content of a particular case study examination form.

General marking guidance

- Marking schemes should be applied positively, with candidates rewarded for what they have demonstrated and not penalised for omissions.
- All marks on the scheme are designed to be awarded and full marks should be awarded when all level descriptor criteria are met.
- The marking scheme and indicative answers are provided as a guide to markers. They are not intended to be exhaustive and other valid approaches must be rewarded. Equally, students do not have to make all of the points mentioned in the indicative answers to receive the highest level of the marking scheme.
- An answer which does not address the requirements of the task must be awarded no marks.

- Markers should mark according to the marking scheme and not their perception of where the passing standard may lie.

  Where markers are in doubt as to the application of the marking scheme to a particular candidate script, they must contact their lead marker.

How to use this levels-based marking scheme

1. Read the candidate's response in full

2. Select the level

- For each trait in the marking scheme, read each level descriptor and select one, using a best-fit approach.
- The response does not need to meet all of the criteria of the level descriptor – it should be placed at the level when it meets more of the criteria of this level than the criteria of the other levels.
- If the work fits more than one level, judge which one provides the best match.
- If the work is on the borderline between two levels, then it should be placed either at the top of the lower band or the bottom of the higher band, depending on where it fits best.

3. Select a mark within the level

- Once you have selected the level, you will need to choose the mark to apply.
- A small range of marks may be given at each level. You will need to use your professional judgement to decide which mark to allocate.
- If the answer is of high quality and convincingly meets the requirements of the level, then you should award the highest mark available. If not, then you should award a lower mark within the range available, making a judgement on the overall quality of the answer in relation to the level descriptor.

Summary of the core activities tested within each sub-task

Sub-task	Core Activity		Sub-task weighting (% section time)
Section 1			
(a)	B	Prepare budget information and assess its use for planning and control purposes.	28%
(b)			20%
(c)			20%
(d)	F	Prepare information to manage working capital.	32%
Section 2			
(a)	E	Prepare information to support short-term decision making.	32%
(b)			20%
(c)	A	Prepare costing information for different purposes to meet the needs of management.	48%
Section 3			
(a)	D	Apply relevant financial reporting standards and corporate governance, ethical and tax principles.	52%
(b)	E	Prepare information to support short-term decision making.	48%
Section 4			
(a)	C	Analyse performance using financial and non-financial information.	40%
(b)			24%
(c)			36%

SECTION 1			
Task (a) Explain how we would determine the trend and seasonal variations for sales volumes of hybrid mattresses using linear regression, based on the data from the graph. Please also explain how these would then be used to estimate the quarterly sales volume for the new eco mattresses.			
Trait			
Forecasting	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Provides a weak explanation of how to ascertain the trend line and seasonal variations. Forecasting of sales volumes for the new range is poorly explained.	1 – 2
	Level 2	Provides a reasonable explanation of how to ascertain the trend line and seasonal variations. Forecasting of sales volumes for the new range is reasonably well explained although might lack some clarity.	3 – 5
	Level 3	Provides a good explanation of how to ascertain the trend line and seasonal variations. Forecasting of sales volumes for the new range is well explained.	6 – 7
Task (b) Explain any limitations of using this approach to forecast the sales volume of eco mattresses.			
Trait			
Limitations	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains at least one limitation of using times series analysis but the explanation lacks clarity or depth. Little or no specific application to establishing volumes for the new range of eco mattresses.	1 – 2
	Level 2	Explains at least two limitations of using time series analysis. The explanation is reasonably clear and there is some specific application to establishing volumes for the new range of eco mattresses.	3 – 4

	Level 3	Explains at least two limitations of using time series analysis. The explanation is clear and there is good specific application to establishing volumes for the new range of eco mattresses.	5
Task (c) Explain the correlation co-efficient and the co-efficient of determination and the usefulness of calculating these measures in this case.			
Correlation	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains the correlation co-efficient and co-efficient of determination but the explanation is either inaccurate or lacks clarity. No or little reference to whether it would be worthwhile in this case.	1 – 2
	Level 2	Explains the correlation co-efficient and co-efficient of determination but the explanation may lack some clarity. Gives some explanation of whether it would be worthwhile in this case.	3 – 4
	Level 3	Explains the correlation co-efficient and co-efficient of determination clearly. Good explanation of whether it would be worthwhile in this case.	5
Task (c) Explain Eco Material's working capital position based on the information in the attached schedule. Please also explain the risks that its working capital position may present if we were to trade with Eco Material.			
Working capital	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Provides a weak explanation of the supplier's working capital position. Mainly restates the figures given in the scenario. Little if any reference to the risks in trading with this supplier.	1 – 3
	Level 2	Provides a reasonable explanation of the supplier's working capital position and recognises some linkages between the ratios. Some explanation given of the risks in trading with this supplier.	4 – 6
	Level 3	Provides a good explanation of the supplier's working capital position and recognises the linkages between the ratios. Good explanation given of the risks in trading with this supplier.	7 – 8

SECTION 2			
Task (a) Explain the profit/volume chart and the impact that changes to my estimates mentioned above would have on the break-even point and the margin of safety.			
Trait			
P/V chart	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Provides a limited explanation of the P/V chart and may not consider or give limited consideration of the impact of changes in the variables.	1 – 3
	Level 2	Provides a reasonable explanation of the P/V chart and the impact of changes in the variables.	4 – 6
	Level 3	Provides a good explanation of the P/V chart and the impact of changes in the variables.	7 – 8
Task (b) Explain why the data used to construct the profit/volume chart will limit its usefulness.			
Trait			
Limitations	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Identifies at least one limitation of the data but the explanation lacks clarity.	1 – 2
	Level 2	Identifies at least two limitations and gives a reasonable explanation of these.	3 – 4
	Level 3	Identifies more than two limitations and gives a good explanation of these.	5
Task (c) Explain what drives the costs identified in each of the processes shown in Table 1 and the reasons why the costs of the recycling service would differ depending on the size and type of mattress. Please also discuss the usefulness of determining an accurate cost for recycling each type of mattress.			
Trait			
Cost drivers	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Identifies a few cost drivers but the reasoning is unclear. Gives a limited explanation why the cost of the service will vary for different sizes and types of mattress.	1 – 3

	Level 2	Identifies a number of cost drivers but the reasoning may lack some clarity. Gives a reasonable explanation why the cost of the service will vary for different sizes and types of mattress.	4 – 6
	Level 3	Identifies the cost drivers with clear reasoning. Gives a good explanation why the cost of the service will vary for different sizes and types of mattress.	7 – 8
Usefulness	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Provides limited explanation of the usefulness of determining an accurate cost for each type of mattress. No reference made to the scenario.	1
	Level 2	Provides a reasonable explanation of the usefulness of determining an accurate cost for each type of mattress. May refer to the scenario but fails to recognise the non-financial motivation for providing the service.	2 – 3
	Level 3	Provides a good explanation of the usefulness of determining an accurate cost for each type of mattress. Recognises the non-financial motivation for providing the service.	4

SECTION 3			
Task (a) **Explain** how the lease will initially be recorded in our accounting records and how it will be treated in our financial statements for the year ended 30 June 2021 and in subsequent years.			
Trait			
IFRS 16 & initial	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates some technical understanding of the provisions of *IFRS 16* but the application to the figures in the scenario is sometimes inaccurate.	1 – 3
	Level 2	Demonstrates reasonable technical understanding of the provisions of *IFRS 16* and applies these to the figures in the scenario with some minor inaccuracies.	4 – 6
	Level 3	Demonstrates good understanding of the provisions of *IFRS 16* and correctly explains the initial treatment of the lease using the information in the scenario.	7 – 8
Year-end & Subs	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates some technical understanding of the treatment at the year-end and subsequent treatment but makes little reference to the information in the scenario.	1 – 2
	Level 2	Demonstrates reasonable technical understanding of the provisions of *IFRS 16* and mainly correctly applies these to the information in the scenario.	3 – 4
	Level 3	Demonstrates good technical understanding of the provisions of *IFRS 16* and correctly applies these to the information in the scenario.	5

Task (b) **Explain** the figures shown in Table 2 of the schedule and whether you think choosing a package based on expected value would be the best approach. Also, please explain a risk averse and a risk seeking approach to decision making and the package that would be chosen for each of these approaches.			
Trait			
Exp of figs & EV	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates little technical understanding of EV, standard deviation and co-efficient of variation. Limited explanation given of the appropriateness of EV.	1 – 3
	Level 2	Demonstrates some technical understanding of EV, standard deviation and co-efficient of variation. Explains some aspects of the appropriateness of EV.	4 – 6
	Level 3	Demonstrates clear technical understanding of EV, standard deviation and co-efficient of variation. Good explanation given of the appropriateness of EV.	7 – 8
Risk attitudes	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains at least one of the attitudes to risk but with little technical understanding. The package chosen may be incorrect or not clearly justified.	1
	Level 2	Explains both attitudes to risk but the explanation may lack clarity and/or the package chosen may be incorrect or not clearly justified.	2 – 3
	Level 3	Explains clearly both of the attitudes to risk and correctly identifies and justifies the package that would be chosen in both cases.	4

SECTION 4			
Task (a) **Explain** how each of the variances have been calculated and the reasons why they may have arisen.			
Trait			
Variances	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains the calculation of the sales variances with some technical accuracy but with limited explanation of how these variances have arisen.	1 – 3
	Level 2	Explains the calculation of the sales variances with reasonable technical accuracy. Gives reasonable explanations of the reasons why these variances have occurred mainly drawn from the information given in the scenario.	4 – 7
	Level 3	Explains the sales variances with technical accuracy. Gives good explanations of the reasons why these variances have occurred clearly drawn from the information presented in the scenario.	8 – 10
Task (b) **Explain** the potential benefits, in this case, of separating the variances into planning and operational variances.			
Trait			
Planning & operational	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates little understanding of the benefits of separating the variances into planning and operational variances.	1 - 2
	Level 2	Demonstrates reasonable understanding of the benefits of separating the variances into planning and operational variances. Explanation may not refer to the information given in the scenario.	3 – 4
	Level 3	Demonstrates good understanding of the benefits of separating the variances into planning and operational variances. Explanation relates well to the information given in the scenario.	5 - 6

Task (c) Suggest three KPIs, which could be used to measure our sustainability performance, explaining how each would be calculated and why each would be appropriate			
Trait			
KPIs	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Provides at least one appropriate KPI. Explanation of how it would be calculated and why it is appropriate lacks clarity.	1 – 3
	Level 2	Provides more than one appropriate KPI. Explanation of how they would be calculated and why they would be appropriate lacks some clarity.	4 – 6
	Level 3	Provides three appropriate KPIs. Good explanation given of how they would be calculated and why they would be appropriate.	7 – 9

Operational Level Case Study November 2020–February 2021
Marking Guidance
Variant 5

About this marking scheme

This marking scheme has been prepared for the CIMA 2019 professional qualification Operational Case Study [November 2020–February 2021].

The indicative answers will show the expected or most orthodox approach; however the nature of the case study examination tasks means that a range of responses will be valid. The descriptors within this level-based marking scheme are holistic and can accommodate a range of acceptable responses.

General marking guidance is given below, markers are subject to extensive training and standardisation activities and ongoing monitoring to ensure that judgements are being made correctly and consistently.

Care must be taken not to make too many assumptions about future marking schemes on the basis of this document. While the guiding principles remain constant, details may change depending on the content of a particular case study examination form.

General marking guidance

- Marking schemes should be applied positively, with candidates rewarded for what they have demonstrated and not penalised for omissions.
- All marks on the scheme are designed to be awarded and full marks should be awarded when all level descriptor criteria are met.
- The marking scheme and indicative answers are provided as a guide to markers. They are not intended to be exhaustive and other valid approaches must be rewarded. Equally, students do not have to make all of the points mentioned in the indicative answers to receive the highest level of the marking scheme.
- An answer which does not address the requirements of the task must be awarded no marks.

- Markers should mark according to the marking scheme and not their perception of where the passing standard may lie.

  Where markers are in doubt as to the application of the marking scheme to a particular candidate script, they must contact their lead marker.

How to use this levels-based marking scheme

1. Read the candidate's response in full

2. Select the level

- For each trait in the marking scheme, read each level descriptor and select one, using a best-fit approach.
- The response does not need to meet all of the criteria of the level descriptor – it should be placed at the level when it meets more of the criteria of this level than the criteria of the other levels.
- If the work fits more than one level, judge which one provides the best match.
- If the work is on the borderline between two levels, then it should be placed either at the top of the lower band or the bottom of the higher band, depending on where it fits best.

3. Select a mark within the level

- Once you have selected the level, you will need to choose the mark to apply.
- A small range of marks may be given at each level. You will need to use your professional judgement to decide which mark to allocate.
- If the answer is of high quality and convincingly meets the requirements of the level, then you should award the highest mark available. If not, then you should award a lower mark within the range available, making a judgement on the overall quality of the answer in relation to the level descriptor.

Summary of the core activities tested within each sub-task

Sub-task	Core Activity		Sub-task weighting (% section time)
Section 1			
(a)	A	Prepare costing information for different purposes to meet the needs of management.	52%
(b)	E	Prepare information to support short-term decision making.	48%
Section 2			
(a)	E	Prepare information to support short-term decision making.	52%
(b)	F	Prepare information to manage working capital.	48%
Section 3			
(a)	D	Apply relevant financial reporting standards and corporate governance, ethical and tax principles.	48%
(b)	B	Prepare budget information and assess its use for planning and control purposes.	52%
Section 4			
(a)	C	Analyse performance using financial and non-financial information.	24%
(b)			48%
(c)	B	Prepare budget information and assess its use for planning and control purposes.	28%

SECTION 1			
Task (a) **Explain** how each of the cost items listed in the schedule would be incorporated into the unit cost of the app and the difficulties involved in doing this.			
Trait			
Unit cost	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates a weak technical understanding of how to determine the unit cost of the app with reference to the cost items.	1 – 2
	Level 2	Demonstrates a reasonable technical understanding of how to determine the unit cost of the app with reference to the cost items.	3 – 5
	Level 3	Demonstrates a good technical understanding of how to determine the unit cost of the app with reference to the cost items.	6 – 7
Difficulties	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains at least one of the potential difficulties of determining the unit cost of the app. The explanation may be limited or lack clarity.	1 – 2
	Level 2	Explains at least two potential difficulties of determining the unit cost of the app. The explanations are reasonably detailed and clear.	3 – 4
	Level 3	Explains clearly more than two potential difficulties of determining the unit cost of the app.	5 – 6
Task (b) **Explain** the graph and how the optimum production plan can be determined using the graph. Please also suggest how we might overcome any binding capacity constraints and how to determine the maximum price we should pay for additional resources.			
Trait			
Graph	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains the graph with a lack of clarity. How to determine the optimal solution might not be addressed or if it is, lacks technical understanding.	1 – 2

	Level 2	Explains the graph, although this may lack some clarity. How to determine the optimal solution might not be fully technically accurate.	3 – 4
	Level 3	Explains the graph clearly. How to determine the optimal solution is mostly technically accurate.	5 – 6
Additional resources	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Provides a weak explanation of how to overcome the capacity constraint. The maximum amount to pay for additional resources does not include consideration of the shadow price.	1 – 2
	Level 2	Provides a reasonable explanation of how to overcome the capacity constraint. The maximum amount to pay for additional resources refers to the shadow price but lacks clarity in the explanation.	3 – 4
	Level 3	Provides a good explanation of how to overcome the capacity constraint and clearly demonstrates understanding of the shadow price.	5 – 6

SECTION 2			
Task (a) **Explain** with clear justification, why each of the costs in the attached schedule and accompanying notes would be relevant or irrelevant to the decision whether to accept the contract. Also, please explain two other factors that we should consider before making a final decision whether to accept the contract.			
Trait			
Relevant costs	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains correctly why one or two of the costs would be relevant or irrelevant.	1 – 3
	Level 2	Explains correctly for some of the costs why they would be relevant or irrelevant. The explanation given for the other costs may lack clarity or be incorrect.	4 – 6
	Level 3	Explains correctly for most of the costs why they would be relevant or irrelevant.	6 – 9
Other factors	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains at least one other factor but the explanation may lack detail or clarity.	1
	Level 2	Explains more than one other factor but the explanation may lack detail or clarity, or the factors may be fairly general or insignificant.	2 – 3
	Level 3	Explains at least two relevant other factors. Explanation is clear, detailed and applied to the scenario.	4
Task (b) **Explain** how to calculate the net cost of factoring based on the details I have explained to you and the potential advantages and disadvantages of factoring compared to setting up our own sales ledger and credit control functions.			
Trait			
Cost	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Provides a weak explanation of how to calculate the net cost. Most elements of the calculation may be missing or incorrect.	1 – 2
	Level 2	Provides a reasonable explanation of how to calculate the net cost although some elements of the calculation may be missing or	3 – 4

		incorrect. Candidates may not have considered the interest benefit from receiving the funds early.	
	Level 3	Provides a good explanation of how to calculate the costs. All elements of the calculation are correct including the interest benefit from receiving the funds early.	5
Advantages & disadvantages	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Provides at least one advantage or disadvantage but the explanation may lack clarity.	1 – 2
	Level 2	Provides at least two advantages or disadvantages but the explanation may lack some clarity.	3 – 5
	Level 3	Provides at least three clearly explained advantages or disadvantages. There is at least one of each.	6 – 7

SECTION 3			
Task (a) Explain how the costs associated with the dismantling and repair of the reconditioned inventory would be treated in the financial records. Please also explain the treatment of this inventory under each of the two resale options and the impact of any write-down on profits and cash flows in the current financial year.			
Trait			
IAS 2	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates a weak technical understanding of the provisions of *IAS2*. Application to the cost of repairs and the resale options contains significant inaccuracies.	1 – 3
	Level 2	Demonstrates a reasonable technical understanding of the provisions of *IAS2*. Application to the cost of repairs and the resale options contains some inaccuracies.	4 – 6
	Level 3	Demonstrates a good technical understanding of the provisions of *IAS2*. Application to the cost of repairs and the resale options is correct but there may be some omissions.	7 – 8
Write-downs	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains the impact of write-down with a lack of clarity and accuracy.	1
	Level 2	Explains the impact of write-down but this may lack some clarity and/or accuracy. The impact on cash flow may be ignored.	2 – 3
	Level 3	Explains the impact of write-down on profit and cash flow fully and accurately.	4
Task (b) Explain the figures in the what-if analysis. Please also explain the further analysis we could carry out, and its potential benefits, if we were able to determine probabilities for the variable costs and the sales volumes at each selling price.			
Trait			
Figures	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Provides a limited explanation of the figures in the what-if analysis and the impact on profit of changes to variables.	1 – 2

	Level 2	Provides a reasonable explanation of the figures in the what-if analysis with some consideration given to the impact on profit of changes to variables.	3 – 4
	Level 3	Provides a good explanation of the figures in the what-if analysis and clearly explains the impact on profit of changes to variables.	5 – 6
Probabilities	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates a weak technical understanding of the application of probabilities to the figures in the what-if analysis.	1 – 2
	Level 2	Demonstrates a reasonable technical understanding of the application of probabilities to the figures in the what-if analysis.	3 – 5
	Level 3	Demonstrates a good technical understanding of the application of probabilities to the figures in the what-if analysis.	6 – 7

SECTION 4			
Task (a) Explain planning and operational variances and the potential benefits of reporting these variances, using the changes that have occurred in the smart bed range to illustrate your explanation.			
Trait			
Planning & Operational variances	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates little understanding of the benefits of separating the variances into planning and operational variances.	1 – 2
	Level 2	Demonstrates reasonable understanding of the benefits of separating the variances into planning and operational variances. Explanation may not refer to the information given in the scenario.	3 – 4
	Level 3	Demonstrates good understanding of the benefits of separating the variances into planning and operational variances. Explanation relates well to the information given in the scenario.	5 – 6
Task (b) Explain the benefits of using a quality dashboard and why each of the specific KPIs shown in the attached dashboard would be appropriate to measure our quality performance.			
Trait			
Dashboard	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Provides little explanation of the benefits of using a KPI dashboard.	1 – 2
	Level 2	Provides some explanation of the benefits of using a KPI dashboard. The explanation may lack clarity.	3 – 4
	Level 3	Provides a good explanation of the benefits of using a KPI dashboard.	5 – 6
KPIs	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Provides a weak explanation of why the KPIs would be appropriate measures.	1 – 2
	Level 2	Provides a reasonable explanation of why the KPIs would be appropriate measures.	3 – 4
	Level 3	Provides a good explanation of why the KPIs would be appropriate measures.	5 – 6

Task (c) Explain responsibility accounting and discuss the Production Director's concerns in respect of each of the KPIs.			
Trait			
Responsibility	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates weak understanding of responsibility accounting and offers little in terms of the specific KPIs and scenario.	1 – 2
	Level 2	Demonstrates reasonable understanding of responsibility accounting and provides some discussion of the specific KPIs and scenario.	3 – 5
	Level 3	Demonstrates good understanding of responsibility accounting and provides a good discussion of the specific KPIs and scenario.	6 – 7

Operational Level Case Study November 2020–February 2021
Marking Guidance
Variant 6

About this marking scheme

This marking scheme has been prepared for the CIMA 2019 professional qualification Operational Case Study [November 2020–February 2021].

The indicative answers will show the expected or most orthodox approach; however the nature of the case study examination tasks means that a range of responses will be valid. The descriptors within this level-based marking scheme are holistic and can accommodate a range of acceptable responses.

General marking guidance is given below, markers are subject to extensive training and standardisation activities and ongoing monitoring to ensure that judgements are being made correctly and consistently.

Care must be taken not to make too many assumptions about future marking schemes on the basis of this document. While the guiding principles remain constant, details may change depending on the content of a particular case study examination form.

General marking guidance

- Marking schemes should be applied positively, with candidates rewarded for what they have demonstrated and not penalised for omissions.
- All marks on the scheme are designed to be awarded and full marks should be awarded when all level descriptor criteria are met.
- The marking scheme and indicative answers are provided as a guide to markers. They are not intended to be exhaustive and other valid approaches must be rewarded. Equally, students do not have to make all of the points mentioned in the indicative answers to receive the highest level of the marking scheme.
- An answer which does not address the requirements of the task must be awarded no marks.

- Markers should mark according to the marking scheme and not their perception of where the passing standard may lie.

  Where markers are in doubt as to the application of the marking scheme to a particular candidate script, they must contact their lead marker.

How to use this levels-based marking scheme

1. Read the candidate's response in full

2. Select the level

- For each trait in the marking scheme, read each level descriptor and select one, using a best-fit approach.
- The response does not need to meet all of the criteria of the level descriptor – it should be placed at the level when it meets more of the criteria of this level than the criteria of the other levels.
- If the work fits more than one level, judge which one provides the best match.
- If the work is on the borderline between two levels, then it should be placed either at the top of the lower band or the bottom of the higher band, depending on where it fits best.

3. Select a mark within the level

- Once you have selected the level, you will need to choose the mark to apply.
- A small range of marks may be given at each level. You will need to use your professional judgement to decide which mark to allocate.
- If the answer is of high quality and convincingly meets the requirements of the level, then you should award the highest mark available. If not, then you should award a lower mark within the range available, making a judgement on the overall quality of the answer in relation to the level descriptor.

Summary of the core activities tested within each sub-task

Sub-task	Core Activity		Sub-task weighting (% section time)
Section 1			
(a)	E	Prepare information to support short-term decision making.	44%
(b)			20%
(c)	C	Analyse performance using financial and non-financial information.	36%
Section 2			
(a)	D	Apply relevant financial reporting standards and corporate governance, ethical and tax principles.	36%
(b)	D		32%
(c)	F	Prepare information to manage working capital.	32%
Section 3			
(a)	B	Prepare budget information and assess its use for planning and control purposes.	32%
(b)			36%
(c)	E	Prepare information to support short-term decision making.	32%
Section 4			
(a)	C	Analyse performance using financial and non-financial information.	52%
(b)	A	Prepare costing information for different purposes to meet the needs of management.	48%

Commented [CD1]: D on marking scheme

SECTION 1			
Task (a) **Explain** the decision tree and how it should be used to make a decision on the Matt-rest World contract. Please also explain the limitations of using decision tree methodology to make this decision.			
Trait			
Explanation	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains some aspects of the decision tree but makes little attempt to explain how the tree can be used to make the decision, with little or no reference to the scenario.	1 – 2
	Level 2	Explains most aspects of the decision tree and makes a reasonable attempt to explain how the tree can be used to make the decision. Reference to the scenario or data in the decision tree may be limited.	3 – 4
	Level 3	Explains most aspects of the decision tree and makes a good attempt to explain how the tree can be used to make the decision. The explanation makes reference to the scenario and data in the decision tree.	5 – 6
Limitations	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains at least one limitation, but the explanation lacks clarity.	1 – 2
	Level 2	Explains at least two limitations, but the explanation may lack some clarity or may lack reference to the data in the decision tree.	3 – 4
	Level 3	Explains mostly clearly at least three limitations and makes reference to the data in the decision tree.	5
Task (b) **Explain** other factors we should consider before making a final decision about whether to enter into a contract with Matt-rest World.			
Trait			
Other factors	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains at least one other factor but the explanation lacks clarity or may lack reference to the scenario.	1 – 2

	Level 2	Explains at least two other factors but the explanation may lack some clarity. There is reasonable application to the scenario.	3 – 4
	Level 3	Explains clearly at least three other factors and makes good reference to the scenario.	5
Task (c) Suggest and justify three KPIs which would be appropriate to monitor the performance of the Westland distributor.			
KPIs	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Identifies one or two KPIs which are relevant for measuring the performance of the distributor, but the justification / explanation is either missing or not clear.	1 – 3
	Level 2	Identifies two or three KPIs which are relevant for measuring the performance of the distributor, but the justification / explanation lacks some clarity.	4 – 6
	Level 3	Identifies three KPIs which are wholly appropriate for measuring the performance of the distributor and are well justified and explained.	7 – 9

SECTION 2			
Task (a) **Explain** the criteria for capitalisation of costs under *IAS16 Property, Plant and Equipment*. Please also provide separate justification for the treatment, as either capital or revenue expenditure, of each of the individual costs listed in Table 1, based on the provisions of *IAS 16*.			
Trait			
Criteria	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains a few of the initial recognition rules for capitalisation of expenditure in *IAS16*. Explanation is limited and lacking in clarity.	1
	Level 2	Explains some of the initial recognition rules for capitalisation of expenditure in *IAS16*. Explanation is reasonably clear but some detail is missing.	2 – 3
	Level 3	Explains fully the initial recognition rules for capitalisation of expenditure in *IAS16*.	4
Application	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Limited application of *IAS16* to the list of expenditure.	1 – 2
	Level 2	Explains correctly how some of the items of expenditure can be initially recognised as an asset in accordance with *IAS 16*, although might not comment correctly on training.	3 – 4
	Level 3	Explains fully which items of expenditure can be initially recognised as an asset in accordance with *IAS 16*, and clearly explains the reasons that training cannot be capitalised.	5
Task (b) **Explain** the impact of Meena's suggestion on the profit reported in each company and how international transfer pricing rules would be applied in this case. Also, please explain whether, if the international transfer pricing rules were not applied, this would be an example of tax evasion or tax avoidance.			
Trait			
Transfer pricing	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Provides a weak explanation of the impact of Meena's suggestion and the international transfer pricing rules.	1

	Level 2	Provides a reasonable explanation of the impact of Meena's suggestion and the international transfer pricing rules.	2 – 3
	Level 3	Provides a good explanation of the impact of Meena's suggestion and the international transfer pricing rules.	4
Tax evasion & avoidance	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Provides a weak explanation of tax evasion and tax avoidance and its application to Meena's suggestion.	1
	Level 2	Provides a reasonable explanation of tax evasion and tax avoidance and its application to Meena's suggestion.	2 – 3
	Level 3	Provides a good explanation of tax evasion and tax avoidance and its application to Meena's suggestion.	4
Task (c) Explain the factors that will determine the level of investment required, in each element of working capital, for the new operation in Westland.			
Trait			
Working capital	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains a few factors that would influence the level of working capital. The explanation may be lacking in clarity or detail.	1 – 3
	Level 2	Explains a number of factors that would influence the level of working capital. The explanation may be lacking in clarity or some detail and reference to the scenario may be lacking.	4 – 6
	Level 3	Explains clearly a range of factors that would influence the level of working capital with good reference to the scenario.	7 – 8

SECTION 3			
Task (a) **Explain** why it is important to prepare budgets for the factory and how the budgets will help in the management of the factory.			
Trait			
Purposes	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Provides a limited explanation of the importance of budgeting and how it helps manage the business.	1 – 3
	Level 2	Provides a reasonable explanation of the importance of budgeting and how it helps manage the business.	4 – 6
	Level 3	Provides a good explanation of the importance of budgeting and how it helps manage the business.	7 – 8
Task (b) **Explain** how to construct the total production budget, the total material usage budget and the total material purchases budget for the quarter. Please also explain two factors that will need to be considered when determining the finished goods inventory level.			
Trait			
Functional budgets	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates weak technical understanding of how to construct a production and materials usage and purchases budget. Little or no reference to the scenario.	1 – 2
	Level 2	Demonstrates reasonable technical understanding of how to construct a production and materials usage and purchases budget. Limited reference to the scenario.	3 – 4
	Level 3	Demonstrates good technical understanding of how to construct a production and materials usage and purchases budget. Good reference to the scenario.	5
Factors	**Level**	**Descriptor**	**Marks**
		No rewardable material	0

	Level 1	Explains at least one factor but the explanation lacks clarity and is not linked to the scenario.	1
	Level 2	Explains two factors but the explanations lack some clarity and may not be linked to the scenario.	2 – 3
	Level 3	Explains two factors clearly and links the factors to the scenario.	4
Task (c) Explain how the figures shown in Table 2 would be used to make a decision on whether to choose Option A or Option B, giving reasons why each item is relevant or irrelevant to the decision.			
Trait			
Decision	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Demonstrates weak technical understanding of how to make the decision.	1 – 3
	Level 2	Demonstrates reasonable technical understanding of how to make the decision.	4 – 6
	Level 3	Demonstrates good technical understanding of how to make the decision.	7 – 8

SECTION 4			
Task (a) Explain what each of the fixed overhead variances listed above indicate and how they will be calculated and whether they will be adverse or favourable. (Note: there is no need to perform the actual calculations.) Please also give reasons why the expenditure, efficiency and capacity variances may have arisen.			
Trait			
Expenditure & Efficiency	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains the variances with limited technical accuracy or identifies the incorrect figures given in the scenario. Reasons given for the variances may also be incorrect.	1 – 2
	Level 2	Explains the variances with reasonable technical accuracy although there may be a lack of clarity. Identifies the correct figures for at least one of the variances. Reasons given for the variances are correct.	3 – 4
	Level 3	Explains the variances with good technical accuracy Identifies the correct figures for both variances. Reasons given for the variances are correct.	5 – 6
Capacity & Total	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains the variances with limited technical accuracy or identifies the incorrect figures given in the scenario. Reasons given for the variances may also be incorrect.	1 – 2
	Level 2	Explains the variances with reasonable technical accuracy although there may be a lack of clarity. Identifies the correct figures for at least one of the variances. Reasons given for the variances are correct.	3 – 5
	Level 3	Explains the variances with good technical accuracy. Identifies the correct figures for both variances. Reasons given for the variances are correct.	6 – 7

Task (b) Explain these four areas of CGMA Cost Transformation Model and how these could be applied in AmaZZZing Beds.			
Trait			
Areas 1 & 2	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains areas 1 and / or 2 (Engendering a cost-conscious culture and managing the risk inherent in driving cost-competitiveness) of the model but the explanation lacks clarity and there is little, if any, application to the business.	1 – 2
	Level 2	Explains areas 1 and 2 of the model but the explanation may lack some clarity. There is some attempt to relate this to the business.	3 – 4
	Level 3	Explains clearly areas 1 and 2 of the model and there is a good attempt to relate this to the business.	5 – 6
Areas 3 & 4	**Level**	**Descriptor**	**Marks**
		No rewardable material	0
	Level 1	Explains areas 3 and / or 4 (Understanding cost drivers and cost accounting systems and processes and incorporating sustainability to optimise profits) of the model, but the explanation lacks clarity and there is little if any reference to the business.	1 – 2
	Level 2	Explains areas 3 and 4 of the model, but the explanation may lack some clarity. There is some attempt to relate this to the business.	3 – 4
	Level 3	Explains areas 3 and 4 of the model and the explanation is clear. There is a good attempt to relate this to the business	5 – 6