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# Answers

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**Applied Skills, PM  
Performance Management (PM)**

**March/June 2019 Sample Answers**

**Section B**

**Volt Co**

**16 C**

Operating cost (\$486m x 40 years)	\$19,440m
Decommissioning cost	\$12,000m
Total life-cycle costs	<u>\$31,440m</u>
Total gigawatts (9,000 x 40 years)	360,000
Life-cycle cost per gigawatt (\$31,440m/360,000 gigawatts)	\$87,333
<b>\$87,000</b> (to the nearest \$'000)	

**17 B**

If the useful life of the nuclear station is increased, the operating cost will be incurred every year thus increasing the total life-cycle costs. Statement (1) is not correct.

If the decommissioning cost is reduced, this will reduce the total life-cycle costs. Statement (2) is correct.

**18 C**

The disposal cost of the spent nuclear fuel is considered to be an internal failure cost. It is a cost incurred by Volt Co as a result of its activities; however, it is being disposed of in a safe manner to ensure that it does not become a cost borne by society as a whole.

**19 B**

The selling price is based on the operating margin of 40%.

Selling price per gigawatt (\$40,000/0.60)	\$66,667
Lifetime profit per gigawatt (\$66,667 – \$55,000)	\$11,667
Total lifetime profit (1,750 gigawatts x \$11,667 x 20 years)	\$408,345m
<b>\$408m</b> (to the nearest \$m)	

**20 B**

Statements (1) and (2) are benefits of life-cycle costing for Volt Co.

Statement (3) is a benefit of activity-based costing (ABC).

Statement (4) is a benefit of relevant costing.

**Cara Co**

**21 C**

	<b>Seebach</b>	<b>Herdorf</b>	<b>Total required</b>	<b>Available</b>
Material (kg)	20,000	21,000	41,000	34,000
Labour (hours)	8,000	9,000	17,000	18,000
Machine hours	12,000	6,000	18,000	18,000

There is sufficient labour hours and machine hours to meet maximum demand but there is a shortage of material, so material is the only limiting factor in month 1.

**22 C**

As labour has been identified as the only limiting factor in month 2, the two products first have to be ranked on the contribution per labour hour they earn.

	Seebach	Herdorf
Contribution per unit (\$)	250	315
Labour hours per unit	2	3
Contribution per labour hour (\$)	125	105
Ranking	1st	2nd

On the basis of the ranking, the optimum plan would have been to produce Seebach first up to its maximum demand level. However, Cara Co has a legally binding obligation to produce a minimum of 2,000 units of Herdorf. The remaining hours after the production of the minimum demand of Herdorf has been completed is (12,000 hours – (2,000 units of Herdorf x 3 hours) = 6,000, which will be used to produce 3,000 units of Seebach (6,000 hours/2 hours).

There are no more hours available to make any more products, so the production volume for Herdorf for month 2 is **2,000 units**.

**23 C**

The shadow price is the contribution earned from having one extra unit of limited resource available and is also the extra, on top of the existing cost for that limited resource, which a company would be willing to pay to acquire that extra resource.

If the shadow price is \$125 per labour hour, it would mean that Cara Co would be willing to pay \$125 of overtime premium per hour for the next 2,000 hours. The maximum hourly rate Cara Co would be willing to pay would be (\$45 + \$125) \$170 for an additional 2,000 hours of temporary staff.

Therefore both statements are correct.

**24 D**

To determine the optimum point from the graph, the iso-contribution line (250S + 315H) must be moved at the same gradient through the feasible region until the last point it leaves the feasible region. This is where the machine hours constraint (3S + 2H = 12,000) and demand constraint for Herdorf (H = 3,000) intersect. Reading from that point across to the y axis shows that H = 3,000 and reading from that point down to the x axis shows that S = 2,000.

Alternatively, the values for H and S can be determined using simultaneous equations:

$$\begin{aligned}
 H &= 3,000 \\
 3S + 2H &= 12,000 \\
 3S + (2 \times 3,000) &= 12,000 \\
 S &= (12,000 - 6,000)/3 = 2,000
 \end{aligned}$$

Maximum contribution (\$250 x 2,000 units) + (\$315 x 3,000 units) =	\$1,445,000
Less fixed costs	(\$300,000)
	<u>\$1,145,000</u>

**25 A**

A slack variable occurs when there are more resources available than are required.

In the graph, the labour line 2S + 3H = 24,000 is well above the feasible region which means that it is not a binding constraint and there are more labour hours than is required. Even if demand increases for both products, labour would still be a slack variable as machine hours are the binding constraint and that is not expected to change. Statement (1) is correct.

If more machine hours became available in month 3, they will be used to make Seebach as the maximum demand of Herdorf (3,000 units) has been satisfied already. Statement (2) is not correct.

Grayshott Co

26 A

The market share variance compares the revised sales volume to the actual sales volume:

Revised sales budget (40,000 units x 90%)	36,000 units
Actual sales	38,000 units
Difference (variance in units)	2,000 favourable
Valued at the standard contribution per unit (\$)*	20·20
Variance (\$)	<b>40,000 favourable</b>

\*Standard contribution = \$65 – (5·2 x \$4) – (2 x \$8) – (2 x \$4) = \$20·20

27 C

The materials price planning variance is calculated by comparing the original standard price to the revised standard price:

Original standard price per kg (\$)	4·00
Revised standard price per kg (\$)	4·24
Difference (\$ per kg)	0·24 adverse
Actual quantity of material used (kg)*	190,000
Variance (\$)	<b>45,600 adverse</b>

\*Actual quantity of materials used = actual material costs/actual price per kg = \$836,000/\$4·40 per kg = 190,000 kg

28 B

Labour rate operational variance is calculated by comparing the revised standard rate per labour hour to the actual rate per labour hour:

Revised standard rate per hour (\$)	8·00
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There is no revision made to the standard rate, as the increase was requested by the production department to meet a large, one-off customer order.

Actual rate per hour (1·25 x \$8) (\$)	10·00
Difference (\$)	2·00 adverse
Number of hours worked*	79,800
Variance (\$)	<b>159,600 adverse</b>

\*Actual hours worked = actual labour cost/actual rate per hour = \$798,000/\$10 = 79,800

29 D

Labour efficiency planning variance will occur when the standard hours have to be revised due to factors which are beyond the control of the operational managers.

All the factors would require the original standard hours to be revised and would therefore cause a labour efficiency planning variance.

Therefore statements (1), (2) and (3) are all correct.

30 C

Both statements are correct and are known issues with the introduction of a system of planning and operating variances.

Section C

31 (a) (i) Hotel

Incremental revenue and contribution

		\$
<b>Room revenue</b>		
Number of rooms	120	
Number of nights	31	
Total room nights	3,720	
Occupancy rate	50%	
Total nights occupied	1,860	
Rate per night	\$70	
Total room revenue		130,200
<b>Extras' contribution</b>		
Total nights occupied	1,860	
Contribution per night	\$12.00	
Total 'extras' contribution		<u>22,320</u>
Total cash inflows		<u>152,520</u>
<b>Incremental running costs</b>		
Staff costs	\$120,000	
Less: manager's salary	(\$2,500)	
Less: chef's salary	(\$2,000)	
	<u>\$115,500</u>	
50% normal hours		57,750
50% at reduced hours x 50/90		32,083
Maintenance costs:		
If open	\$14,600	
If closed	\$4,000	
	<u>10,600</u>	
Incremental cost		10,600
Power costs:		
Electric	\$0	
Gas – fixed charge	\$0	
Gas – variable (\$20,000 – \$10,200) x 1.5		14,700
Security		0
Water		<u>6,450</u>
Total cash outflows		<u>121,583</u>
Total incremental cash flows		<u>30,937</u>

(ii) Water park

Incremental revenue and contribution

		\$
<b>Visitor revenue</b>		
Number of visitors	5,760	
Admission cost	\$16·80	
Admission revenue		96,768
<b>Extras' contribution</b>		
Number of visitors	5,760	
Contribution per visitor	\$7·20	
Total contribution		<u>41,472</u>
Total cash inflows		<u>138,240</u>
<b>Incremental running costs</b>		
Staff costs:		
Manager	\$0	
Other staff (\$75,600 – \$2,000) x 48%		35,328
Maintenance costs:		
If open	\$6,000	
If closed	<u>(\$2,000)</u>	
Incremental cost		4,000
Power costs:		
Electric	\$0	
Gas – fixed charge	\$0	
Gas – variable (\$18,000 – \$8,500) x 1·5		14,250
Security		0
Water		<u>12,100</u>
Total cash outflows		<u>65,678</u>
Total incremental cash flows		<u>72,562</u>

**Conclusion**

Based on these figures, both of them should stay open because the incremental cash flows are both positive.

- (b) As regards the estimates calculated, these have been based on very limited data and should be approached with caution. The calculations are based on the first two months' of opening only and, consequently, it is difficult to say how accurate they are likely to be. In addition, the basis of estimating the revised occupancy rates for the hotel, for example, has not been given. If these estimates are too optimistic, the actual results could be far worse.

The figures suggest that both the water park and the hotel should stay open. Given that this is a new business and therefore it is still building up its customer base, this would seem like a wise decision anyway, even if the calculations had shown that the estimated incremental cash flows were not as positive as this.

Similarly, if Belton Park were to close either the hotel or the water park, they would invariably lose some valuable staff who might seek out other jobs after the closure. These staff might not be available again when the hotel and water park reopened in February.

The interdependency of the two sets of projections has not been taken into account in the calculations either. Since the incremental cash flows suggest that both the hotel and the water park should stay open, it is not a big problem. However, if they had shown, for example, that the water park alone should close, the effect that this could have on the number of hotel visitors would also need to be taken into account. Many visitors may be attracted to the hotel because it has a water park.

**Tutorial note:** *There are many factors which could have been discussed here and would be given credit.*

### 32 Performance for year ended 30 June 20X7

**Gross room revenue** – Best Night's 'gross' room revenue based on standard room rates has increased by 6.6% in 20X7, which reflects the higher occupancy rates (74% v 72%) and the increase in standard room rates (\$140 v \$135 per night).

However, this gives a rather misleading impression of how well the hotels have performed in the year to 20X7.

**Revenue after discounts** – Revenue from room sales, adjusted for discounts or rate reductions offered, has actually only increased 1.8%, and that reflects the significant 45% increase in discounts or reductions offered:

	20X7 \$'000	20X6 \$'000	% change
Standard revenue	111,890	104,976	6.6%
Discounts/reductions	16,783	11,540	45.4%
Room revenue net of discounts	95,107	93,436	1.8%

Faced with the declining number of business customers, and consequently the prospect of lower occupancy rates, managers may have decided to offer lower room rates to try to retain as many of their existing business customers as possible, or to try to attract additional leisure customers.

Although occupancy rates increased by 2.8% (from 72% to 74% which now exceeds the budgeted level), revenue, net of discounts, only increased by 1.8%. This means that revenue per room per night after discounts in 20X7 was lower than in 20X6, despite the standard rate being higher (\$140 v \$135).

In the context of tough market conditions, the decision to increase the standard room rate for 20X7 appears rather optimistic. Although the hotel managers have managed to achieve occupancy rates higher than budget, they have only managed to do so by reducing room rates.

**Additional revenue** – One of the potential benefits of increased occupancy rates, even if guests are paying less per room per night, is that they will generate additional revenue from food and drink sales. This appears to be the case because additional revenues have increased by approximately 5%.

**Total revenue** – In total, revenue (net of discounts) has increased 2.4% in 20X7 v 20X6. Given the tough competitive environment, Best Night Co could view any increase in revenues as positive. Moreover, provided the revenue achieved from selling the room is greater than the variable cost of providing it, then increasing occupancy levels should increase the hotels' contribution to profit.

**Operating profit** – However, despite the increase in revenue, operating profits have fallen by \$0.3m (1.3%) between 20X7 and 20X6, due to a sizeable increase in operating costs.

There is no detail about Best Night Co's operating costs, for example, the split between fixed and variable costs. However, in an increasingly competitive market, cost control is likely to be very important. As such, the \$3 million (3.3%) increase in operating costs between 20X6 and 20X7 is potentially a cause for concern, and the reasons for the increase should be investigated further.

However, when looking to reduce costs, it will be very important to do so in a way which does not compromise customer satisfaction. More generally, Best Night Co needs to avoid cutting expenditure in areas which will have a detrimental impact on customer satisfaction ratings, for example, not replacing mattresses even though they are becoming uncomfortable to sleep on.

**Operating profit margin** – The increase in costs has also led to a fall in operating profit margin from 20.8% to 20.0%.

It is perhaps more instructive to look at the margin based on standard room rates per night, thereby reflecting the impact of the discounts offered as well as the increase in costs. On this basis, the margin falls slightly more: from 18.9% to 17.6%.

	20X7 \$'000	20X6 \$'000
Total revenue	119,377	116,621
Discounts offered	16,783	11,430
Gross revenue	<u>136,160</u>	<u>128,051</u>
Operating profit	23,915	4,242
Operating profit margin	17.6%	18.9%

**ROCE** – This reduced profitability is also reflected in the company's return on capital employed which has fallen slightly from 62% (\$24.2m/\$39.1m) to 60.5% (\$23.9m/\$39.5m). This suggests that the value which Best Night Co is generating from its assets is falling. The decline in ROCE could be a particular concern given the relative lack of capital investment in the hotels recently. Capital investment will increase the cost of Best Night Co's non-current assets, thereby reducing ROCE for any given level of profit.

#### Customer satisfaction scores

Although the reduction in profitability should be a concern for Best Night Co, the reduction in customer satisfaction scores should potentially be seen as a greater cause for concern. The scores suggest that, in the space of one year, Best Night Co hotels have gone from being in the top 10% of hotels to only just being in the top 25%. This is a significant decline in one year, and one which Best Night Co cannot afford to continue.

Best Night Co prides itself on the comfort of its rooms and the level of service it offers its guests. Both of these factors are likely to be important considerations for people when considering whether or not to stay in a Best Night Co hotel. Therefore, falling customer

satisfactions levels could be seen as an indication that fewer existing customers will stay at a Best Night Co hotel in future – thereby threatening occupancy rates, and prices, in future.

Moreover, the scores suggest that the decision to defer the refurbishment programme is likely to have a detrimental impact on future performance.

**Applied Skills, PM  
Performance Management (PM)**

**March/June 2019 Sample Marking Scheme**

**Section B**

*Marks*

Each question is worth 2 marks

**30**

**Section C**

*Maximum marks    Marks awarded*

<b>31 (a) (i)</b>	Hotel revenue	1.5
	Extras contribution	1
	Staff costs	2.5
	Maintenance cost	1
	Gas variable costs	1
	Water not security	0.5
	Net cash flow	0.5
	Conclusion: hotel	0.5
<b>(ii)</b>	Admission revenue	1.5
	Extras contribution	1
	Staff costs	0.5
	Maintenance costs	1
	Gas variable costs	1
	Water not security	0.5
	Net cash flow	0.5
	Conclusion: water park	0.5
		<b><u>15</u></b>

<b>(b)</b>	Discussion	<b><u>5</u></b>
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**20**

<b>32</b>	Calculations	5
	Revenue	4
	Operating profit	2
	ROCE	2
	Cust satisfaction	3
	Other valid points	4
		<b><u>20</u></b>



# PM Examiner's commentary on March/June 2019 sample questions

This commentary has been written to accompany the published sample questions and answers and is written based on the observations of markers. The aim is to provide constructive guidance for future candidates and their tutors, giving insight into what the marking team is looking for, and flagging pitfalls encountered by candidates who sat these questions.

## Question 31

The question is entirely from the decision-making section of the syllabus, focusing on relevant costs. This can be an area which polarises candidates, with many prone to using traditional accounting principles rather than relevant costing methods. This commentary will try to highlight regular mistakes that are made, in order to steer candidates away from them.

Although some repetition of the model answer is inevitable, the focus for this commentary will be exam technique, and how to get the most out of the question in the time available. Some of the methods candidates can use to get the most out of the CBE software will also be covered, as this is a key skill in passing all of the Applied Skills exams now.

### Read the requirements

This advice is frequently published, but is very important – candidates shouldn't waste time reading through the scenario until they know what they're trying to achieve. On longer questions such as this, it is good practice to read the first paragraph of the scenario so that the type of business can be understood then look at the requirements in detail.

The first paragraph, although short, gives some key information – the business is new (opened two months earlier), already successful, and has three areas – a theme park, a hotel and an indoor water park. After determining that, candidates can look at the requirements.

There are two requirements, worth 15 and 5 marks respectively. This is also important to know, as it gives a rough idea of how long to spend on each part. It's also important not to fall into the trap of spending too long on part (a), and not having time to even attempt part (b), which may mean missing out on some easy marks.

As usual, the verbs used in the requirements are key. Requirement (a) is a **Calculate** requirement, which is fairly clear. However, candidates should read the requirements carefully, as often there are further instructions given, as is the case here. Candidates were asked to calculate the incremental cash flows (more on this later) in TWO cases – one if the hotel stays open, and the other if the water park stays open. In addition they are also asked to **state** whether it should remain open or should close – easy to miss or forget this!

Requirement (b) says **Discuss** any other factors Belton Park Resort should consider when making the decision in part (a). The decision is to (open/close the hotel/water park), but candidates should read through the requirement to see if there's any important information. It's perfectly acceptable to attempt part (b) before part (a) – remember you're asked for **other** factors, so the numerical conclusion to part (a) is largely irrelevant.

In terms of the detail of the requirements, part (a) is the more technical of the two – candidates are asked for the **incremental cash flows** if the resort keeps open the hotel and/or water park. Incremental cash flows are key to decision-making when using relevant cash flows. What this means is **the change in cash flows as a result of the decision**. The decision is to close the hotel/water park – so candidates needed to identify the difference in cash flows compared to keeping them open. It is now essential to read the scenario and identify what the cash flows are in each case.

### Read the scenario

As candidates read the scenario, they should start to make notes, and form their answer. As the spreadsheet software is so quick to edit, candidates shouldn't worry about putting something down that they don't need – it can always be deleted later.

The second paragraph of the scenario reiterates the decision – Belton Park Resort must decide whether to close the hotel and/or the water park. Part of the reason for this decision is that the theme park must be closed by law. A common mistake in part (b) was to suggest that Belton Park Resort must close the water park to comply with this law and so more time spent reading the first two paragraphs would have made it clear that only the theme park must be closed. Many candidates did pick up on the fact that closing the theme park might have a knock-on effect on the performance of the other two areas though, which was good to see.

Candidates were then given information about Belton Park Resort's first two months of trading. Again, rushing through this information could lead to missing vital clues for requirement (b) – the fact that there's only two months' data may mean that it is not reliable, and this could be another consideration before making the decision.

On its own, the information isn't much use yet but there is information on room usage/prices in the hotel, and visitor figures for the water park. If Belton Park Resort closes, it will lose out on any revenue.

The scenario then says what the expected performance would be in January – this is absolutely crucial. Remember that the decision is 'to open or not'. So in the example of revenue, if Belton Park Resort closes, it gets zero, if it opens, it gets whatever these figures are suggesting – there is a change in cash flows which needs to be calculated.

Finally, the average monthly costs over the last two months are provided. Again, a common error was to think that these were the total costs and candidates divided by two to get the monthly costs. Spending a little more time reading the scenario really helps to avoid mistakes such as these.

There are five costs given, and then details underneath regarding each one. This provides the information needed to start answering the question – the incremental cash flows will consist of revenue, and the five costs given. Some of them might be zero, but the answer can start to take shape.



**Set up your answer**

Using the information from the scenario the revenue and costs have been included in the spreadsheet. It's easy to edit later if necessary, so don't worry, but this is a good starting point:

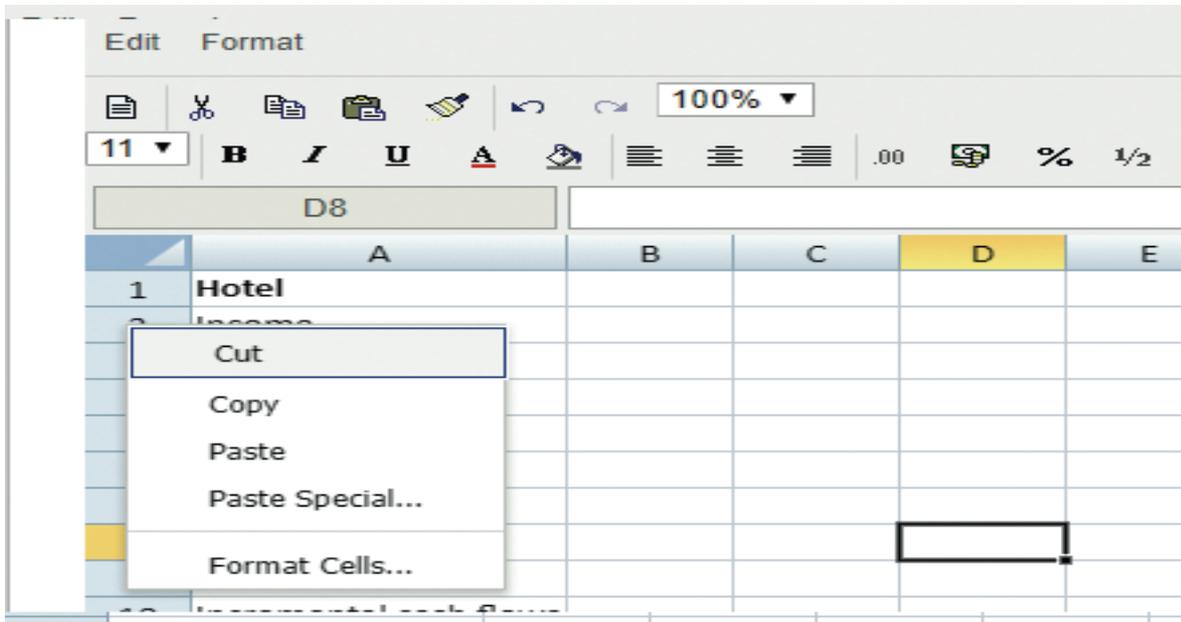
A3		Costs				
	A	B	C	D	E	
1	Hotel					
2	Income					
3	Costs					
4	Staff					
5	Maintenance					
6	Power					
7	Security					
8	Water					
9	Total costs					
10	Incremental cash flows					

**Answer the question**

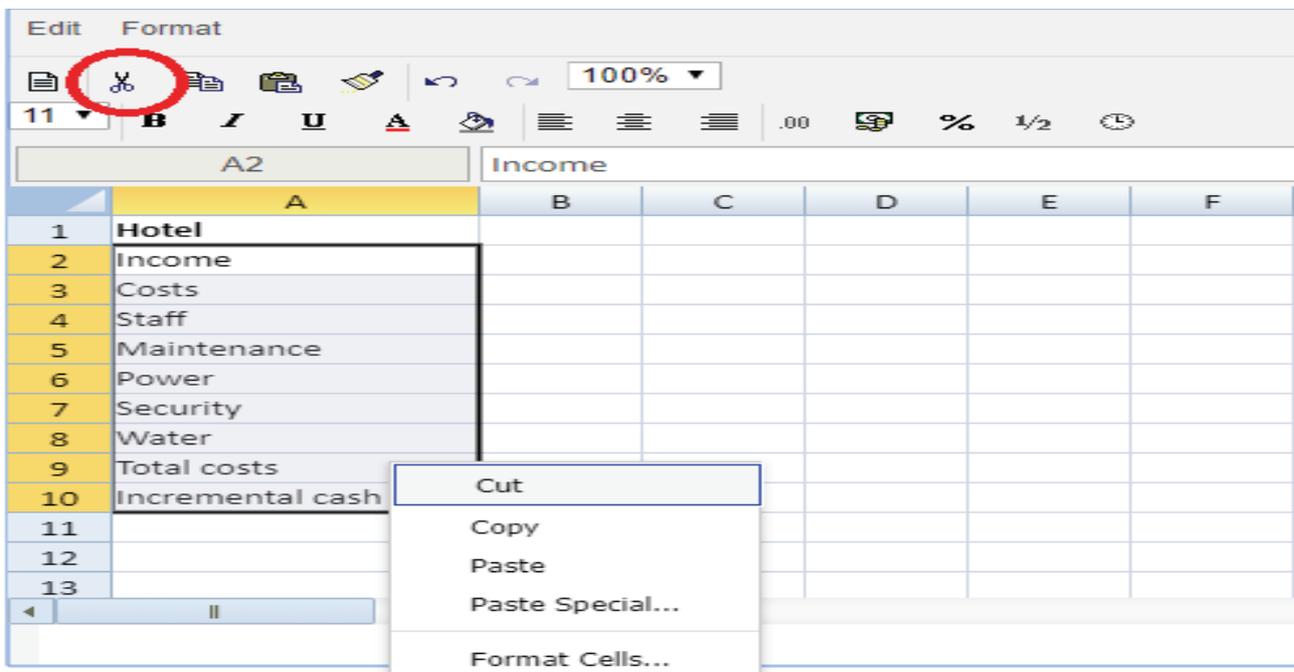
Starting with the Hotel and using the information given to calculate incremental cash flows. This isn't the only way to lay things out, but the above items need to be calculated, so it will give a nice, clear answer. Any workings required can be done underneath, or to the side.

The first item to calculate is revenue. For the Hotel, the resort will gain revenue from room bookings. However, there is also contribution from extras – if a candidate didn't notice this at the time, it doesn't matter – they can either work everything out and include it as one figure, or insert a line to include it. For the sake of demonstration, this commentary will do the latter:

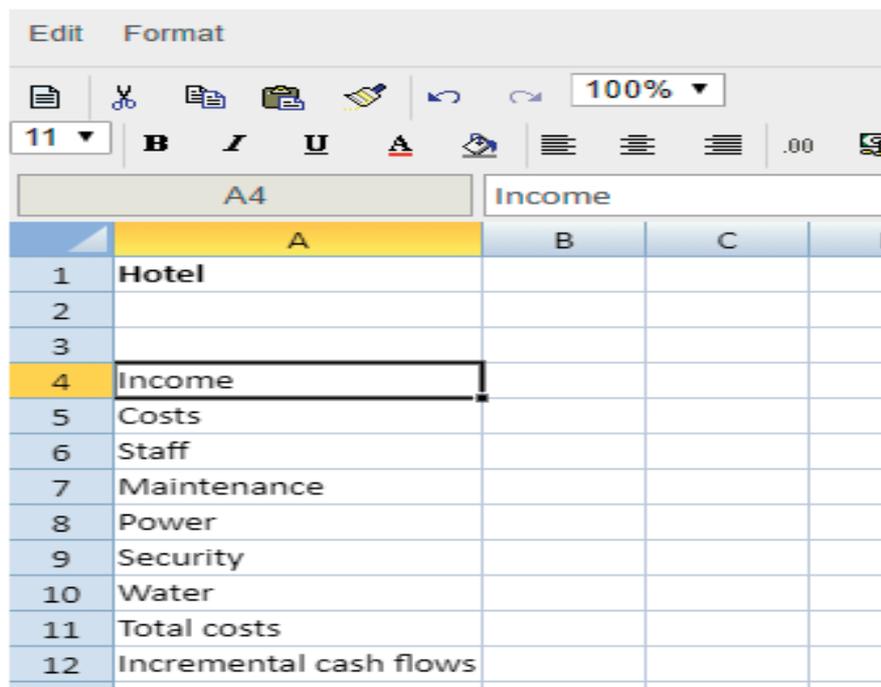
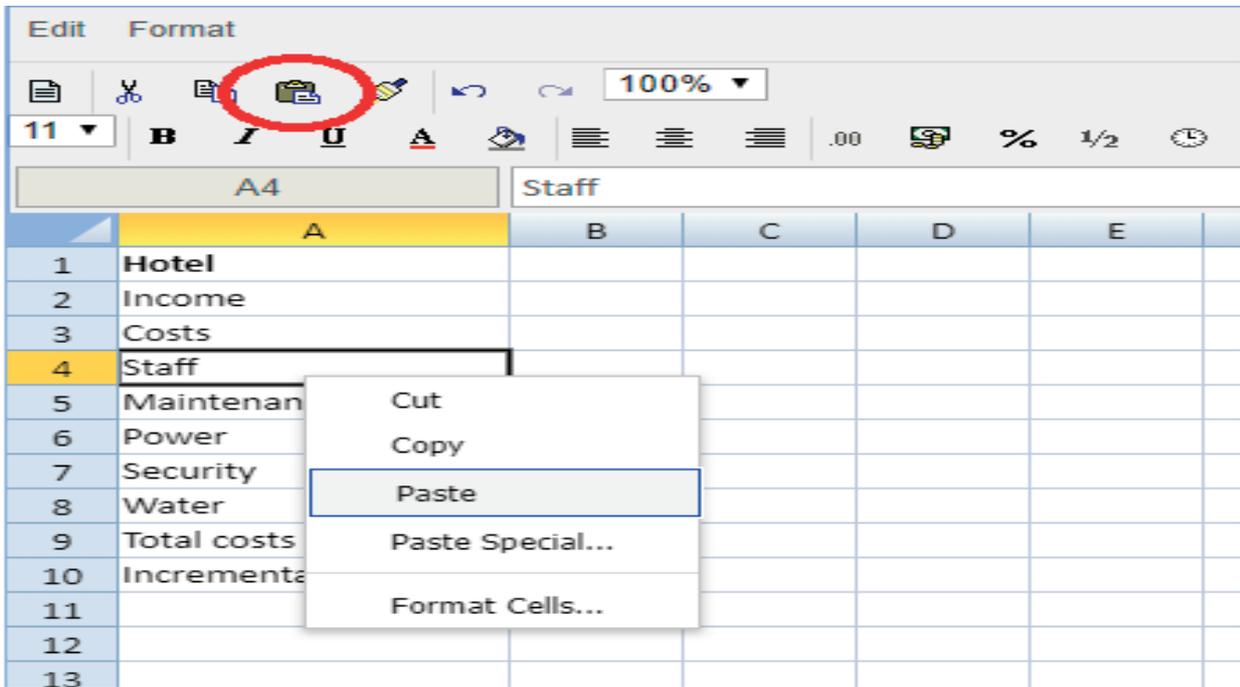
If a candidate is accustomed to using spreadsheets they might try and right click on the row number (2) to insert a line but as can be seen, this does not give the option to insert a row. This highlights the importance of candidates practising using the software so that they're not taken by surprise in the exam.



Instead of inserting rows, candidates can simply cut and paste to move the text around. This can be done by selecting the text to move, right clicking and selecting cut. Candidates could also click on the scissors (circled) to cut.



Select the row to paste into, right click and select Paste, or just click on the circled Paste button.



There are now a couple of extra rows, and the income streams can be separated out.



	A	B	C
1	<b>Hotel</b>		
2	Rooms		
3	Extras		
4	Income		
5	Costs		
6	Staff		
7	Maintenance		
8	Power		
9	Security		
10	Water		
11	Total costs		
12	Incremental cash flows		

Now Rooms and Extras have been added. Candidates might think that's a lot of work (as it's a lot of pictures) and would take too long, but that's why it's so important to practise these questions using the software – in reality the whole exercise took about 15 seconds.

Back to the question – the revenue information for the past two months is given, but the January figures are likely to be lower. Remember that the incremental cash flows of closing the hotel are needed – so a comparison of the revenue if the hotel closes (zero) to the revenue if it stays open – i.e. January's revenue. This can be worked out as follows:

	A	B	C	D	E	F	G	H	I
1	<b>Hotel</b>						Revenue		
2	Rooms						Current	January	
3	Extras					Rooms	120		
4	Income					Rate	100		
5	Costs					Occupancy	90%		
6	Staff					Extras spend	20		
7	Maintenance					Extras contribution	60%		
8	Power								

As can be seen a working has been set up to the right of the main answer. As mentioned earlier, candidates can do this anywhere, but try to make it clear what is being worked out.

Using the **B** button makes the words Hotel and Revenue bold. This isn't essential, but doesn't take much time. It is then useful to copy in current information from the question – again, this may seem like it's using up valuable time, but these numbers are going to be used and it makes it very clear to the marker where they're coming from. Also note that the software understands the percentage symbol, so it's fine to use that.

Now the current figures can be adjusted as necessary (some, for example, the number of rooms available will stay the same). The average room rate will need to decrease by 30% and



this can be the first calculation performed. The software will do the calculations and should be used. There is a risk that if candidates do the calculations separately and type in the answer manually, marks could be lost if a typing error is made.

To perform any calculation in the spreadsheet, click in the cell and type =. Simple calculations can be done – for example typing =5\*4 will give 20 (as seen below in cell C2).

C2		=5*4		
	A	B	C	D
1	Hotel			
2	Rooms		20	
3	Extras			
4	Income			

The answer is shown as 20, but the **Formula Bar** (at the top) shows the calculation. This is so important, as the marker can see how the answer has been arrived at and if a mistake is made the marker is able to award follow-on marks. The marker will be unable to do this if an incorrect answer has simply been typed manually into the cell.

Back to the room rate – this needs to decrease by 30%. There are a few ways to do this calculation – many candidates would just work it out in their heads, but it is recommended that workings are shown, even on something relatively simple like this. =100\*70% or =100\*(1-30%) could be typed into the cell. This would be fine, and would obviously score full marks, but the values in other cells can be referred to in the calculations. The current rate is in cell G4 (see below), so typing =G4\*70%, will give the right answer. The benefits of this are that (again) it makes it clearer to the marker what is being done, and if a candidate realises they have typed the value incorrectly, then changing the value in cell G4 will change the calculation too. This can be very useful when doing several similar calculations as candidates can copy and paste the formulas, and only update the numbers which change each time.

H4		=G4*70%							
	A	B	C	D	E	F	G	H	I
1	Hotel						Revenue		
2	Rooms						Current	January	
3	Extras					Rooms	120		
4	Income					Rate	100	=G4*70%	
5	Costs					Occupancy	90%		
6	Staff					Extras spend	20		
7	Maintenance					Extras contribution	60%		
8	Power								

Note that when typing the formula, instead of typing G4, clicking on cell G4 will achieve the same result (try it!). Once the formula is complete, press **Enter**, and the answer will be shown.



H4		=G4*70%							
	A	B	C	D	E	F	G	H	I
1	Hotel						Revenue		
2	Rooms						Current	January	
3	Extras					Rooms	120		
4	Income					Rate	100	70	
5	Costs					Occupancy	90%		
6	Staff					Extras spend	20		
7	Maintenance					Extras contribution	60%		
8	Power								

The other change is occupancy – down to 50%. This can just be typed in, as there’s no calculation required.

F8									
	A	B	C	D	E	F	G	H	I
1	Hotel						Revenue		
2	Rooms						Current	January	
3	Extras					Rooms	120		
4	Income					Rate	100	70	
5	Costs					Occupancy	90%	50%	
6	Staff					Extras spend	20		
7	Maintenance					Extras contribution	60%		
8	Power								

Now I have the information I need, I can work out my revenue. This will be the number of rooms used per night multiplied by the room rate multiplied by the number of days – this can be set up as follows:

	Revenue		
	Current	January	
Rooms	120		
Rate	100	70	
Occupancy	90%	50%	
Extras spend	20		
Extras contribution	60%		
Rooms used	=G3*H5*31		

So, number of rooms (G3) multiplied January occupancy (H5) will give the average rooms per night, then multiplied by 31 as there are 31 days in January.



	Revenue	
	Current	January
Rooms	120	
Rate	100	70
Occupancy	90%	50%
Extras spend	20	
Extras contribution	60%	
Rooms used		1860
Revenue		=H8*H4

The revenue is then simply the number of rooms (H8) multiplied by the daily rate (H4).

	Revenue	
	Current	January
Rooms	120	
Rate	100	70
Occupancy	90%	50%
Extras spend	20	
Extras contribution	60%	
Rooms used		1860
Revenue		130200

It's easier to explain the point now about showing workings. Many candidates reached this figure, but with no workings – this is fine as long as the answer is right! However, let's say a candidate misreads the number of rooms as 130. That candidate could work out revenue as  $130 \times 70 \times 50\% \times 31$  on their calculator and write 141,050 as their answer:

	B2	141050	
	A	B	C
1	Hotel		
2	Rooms	141050	
3	Extras		
4	Income		
5	Costs		
6	Staff		
7	Maintenance		
8	Power		
9	Security		
10	Water		
11	Total costs		
12	Incremental cash flows		

This would be worth zero. The correct answer is 130,200, so this is wrong. However, using the method of showing workings:



F	G	H
	<b>Revenue</b>	
	Current	January
Rooms	130	
Rate	100	70
Occupancy	90%	50%
Extras spend	20	
Extras contribution	60%	
Rooms used		2015
Revenue		141050

The same mistake has been made, i.e. number of rooms has been input as 130, but a marker can see straight away why the mistake has been made. The new room rate of 70 has been correctly calculated, an occupancy rate of 50% has been applied, but to the wrong figure and then it's been multiplied by 31 to get revenue. The marking scheme for this question says that hotel revenue is worth 1.5 marks – because of this mistake a candidate would score 1 mark – much better than if no workings had been shown.

Finally, the figure can be put in to the main answer. It could be typed in but this runs the risk of typing errors. A formula can be used to say 'use the value in cell H9' (as seen in this illustration).

	A	B	C	D	E	F	G	H
1	<b>Hotel</b>						<b>Revenue</b>	
2	Rooms	=H9					Current	January
3	Extras					Rooms	120	
4	Income					Rate	100	70
5	Costs					Occupancy	90%	50%
6	Staff					Extras spend	20	
7	Maintenance					Extras contribution	60%	
8	Power					Rooms used		1860
9	Security					Revenue		130200
10	Water							
11	Total costs							
12	Incremental cash flows							

Now the contribution from 'Extras' can be calculated – each occupied room spends on average \$20 – but remember Belton Park Resort has to pay for the goods it sells, so if the company make a 60% contribution margin, \$20 of revenue will earn  $20 \times 60\% = \$12$  contribution. The 1,860 rooms predicted to be used in January has been calculated, so the contribution would be  $1,860 \times 12$  but again, workings should be shown:



F	G	H
	<b>Revenue</b>	
	Current	January
Rooms	120	
Rate	100	70
Occupancy	90%	50%
Extras spend	20	
Extras contribution	60%	
Rooms used		1860
Revenue		130200
Extras contribution		=G7*G6

	Revenue	
	Current	January
Rooms	120	
Rate	100	70
Occupancy	90%	50%
Extras spend	20	
Extras contribution	60%	
Rooms used		1860
Revenue		130200
Extras contribution		12
Extras total		=H10*H8

	A	B	C	D	E	F	G	H
1	<b>Hotel</b>						<b>Revenue</b>	
2	Rooms	130200					Current	January
3	Extras	=H11				Rooms	120	
4	Income					Rate	100	70
5	Costs					Occupancy	90%	50%
6	Staff					Extras spend	20	
7	Maintenance					Extras contribution	60%	
8	Power					Rooms used		1860
9	Security					Revenue		130200
10	Water					Extras contribution		12
11	Total costs					Extras total		22320
12	Incremental cash flows							
13								

Finally the total income can be calculated:



B4		=B2+B3	
	A	B	C
1	Hotel		
2	Rooms	130200	
3	Extras	22320	
4	Income	=B2+B3	
5	Costs		
6	Staff		
7	Maintenance		
8	Power		
9	Security		
10	Water		

What this shows is that if the hotel is kept open, \$152,520 is earned – this is the incremental cash inflow, as if the hotel is closed \$0 would be earned, so the change in cash flows from the decision to open would be \$152,520.

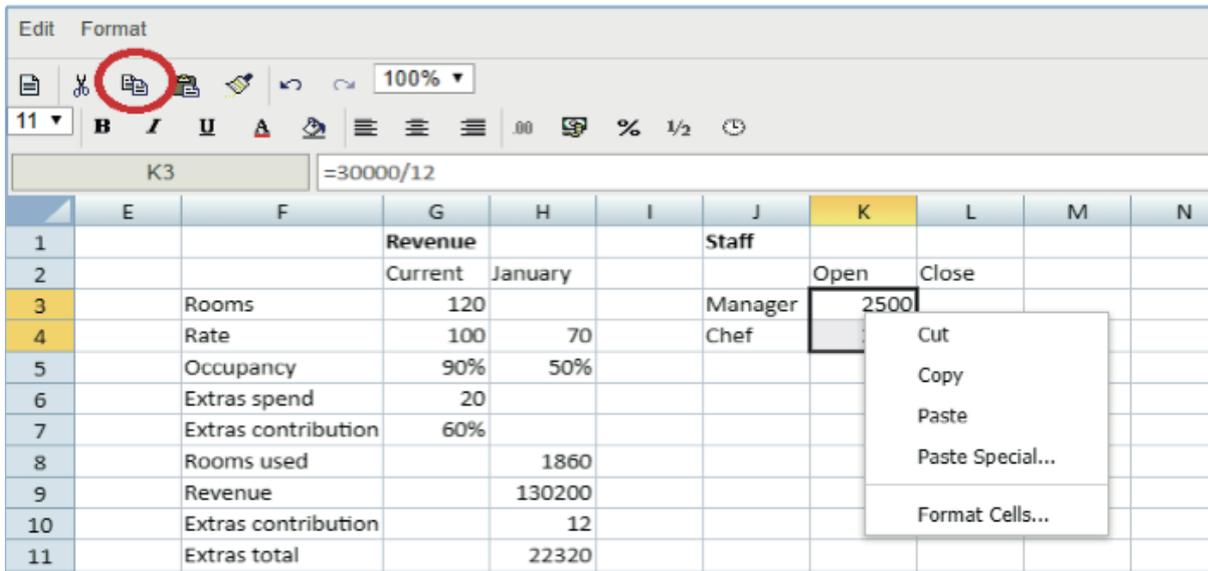
On to the costs now – the information given on each one is crucial in deciding what changes as a result of the decision.

Staff costs are probably the most complicated part of the question. For the hotel, a monthly figure of \$120,000 was given, and then information was provided on both salaried and temporary staff. Remember it is the **incremental** cash flows which need to be calculated, i.e. the change in cash flows if the hotel is open compared to closing it. Often, the easiest way to do this is to look at the cash flows if the decision to open is taken versus the cash flows if it is closed. This commentary does it this way, partly because the model answer does it slightly differently, and this will show that both approaches are valid.

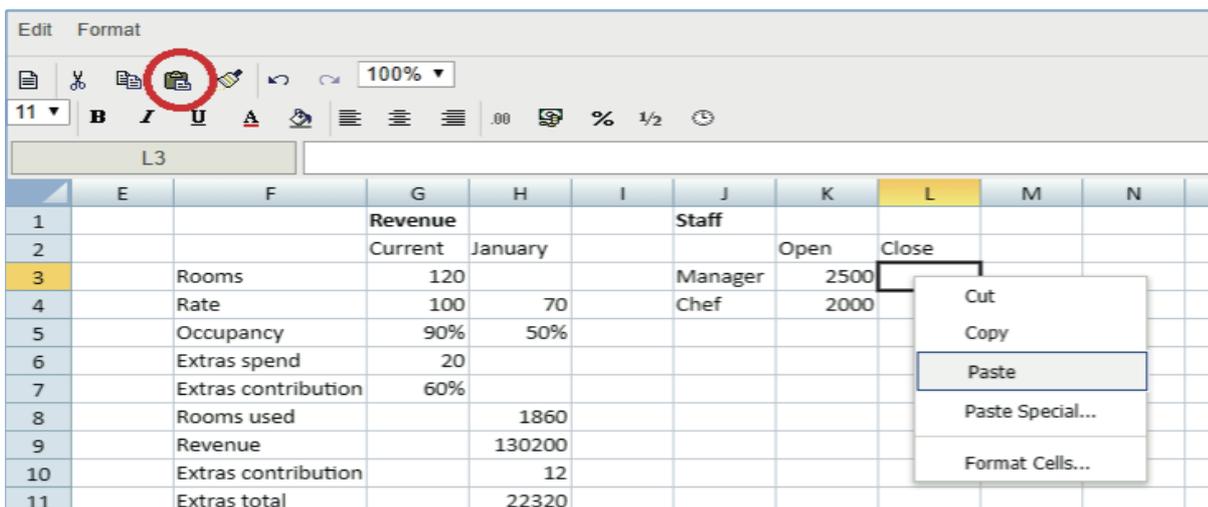
Starting with the salaried staff, the scenario says that they' will be paid whether the hotel is open or not – watch out though, the figures given are their annual salaries, and it is the monthly costs which are needed (see cells K3 and K4 below).

K4		=24000/12						
	E	F	G	H	I	J	K	L
1			Revenue			Staff		
2			Current	January			Open	Close
3		Rooms	120			Manager	2500	
4		Rate	100	70		Chef	2000	
5		Occupancy	90%	50%				
6		Extras spend	70					

As the costs are the same, the figures in cells K3 and K4 can be copied and pasted into L3 and L4.



Select the two cells, right click and select Copy, or click the Copy button (circled).



Select the cell to copy to, then right click and select Paste, or click the Paste button (circled).

The scenario then gives information about temporary staff, which is where it gets a little more complicated. Half of the temporary staff are unaffected, but half are variable with the occupancy rate. So, of the \$120,000 spent on salaries in the previous month, the salaried staff can be discounted (\$4,500), leaving \$115,500 spent on temporary staff. Half of this cost will remain the same (\$57,750), but the remainder will reduce by 50/90 to reflect the fall in occupancy.



Edit Format									
100%									
11 B I U A									
K5 =(120000-K3-K4)/2									
	E	F	G	H	I	J	K	L	M
1			Revenue			Staff			
2			Current	January			Open	Close	
3		Rooms	120			Manager	2500	2500	
4		Rate	100	70		Chef	2000	2000	
5		Occupancy	90%	50%		Unaffected	57750		
6		Extras spend	20						
7		Extras contribution	60%						
8		Rooms used		1860					

It can be seen in the formula bar how the \$57,750 has been calculated – the fixed salary costs have been subtracted from the original figure, then it has been divided by 2 to get the unaffected half.

Finally, the reduction for the other half – multiply by 50/90:

Edit Format									
100%									
11 B I U A									
K6 =K5*50/90									
	E	F	G	H	I	J	K	L	M
1			Revenue			Staff			
2			Current	January			Open	Close	
3		Rooms	120			Manager	2500	2500	
4		Rate	100	70		Chef	2000	2000	
5		Occupancy	90%	50%		Unaffected	57750		
6		Extras spend	20			Reduced	333333		
7		Extras contribution	60%						
8		Rooms used		1860					
9		Revenue		130200					

This brings up a useful point – the answer here looks very odd but this is because it can't fit in the cell. The cell width can be adjusted by clicking at the top of the columns – on the line between each one, and dragging.

	J	K	L	M
Staff				
		Open	Close	
Manager		2500	2500	
Chef		2000	2000	
Unaffected		57750		
Reduced		32083.3333333333		



The problem is due to the number of decimal places being shown. This can be adjusted in a number of ways. Again practise before the exam, but one way is to click on the .00 button in the toolbar and select 0.00 – 2 decimal places. Although this means that this answer is formatted differently to the other numbers, don't worry about it.

K6		=K5*50/90						
	F	G	H	I	J	K	L	M
1		<b>Revenue</b>			<b>Staff</b>			
2		Current	January			Open	Close	
3	Rooms	120			Manager	2500	2500	
4	Rate	100	70		Chef	2000	2000	
5	Occupancy	90%	50%		Unaffected	57750		
6	Extras spend	20			Reduced	32083.33		
7	Extras contribution	60%						
8	Rooms used		1860					
9	Revenue		130200					

Now the figures have been calculated, the incremental cash flow is the difference between opening and closing:

	I	J	K	L	M
1		<b>Staff</b>			
2			Open	Close	
3		Manager	2500	2500	
4		Chef	2000	2000	
5		Unaffected	57750		
6		Reduced	32083.33		
7		<b>Total</b>	<b>94333.33</b>	<b>4500</b>	
8		<b>Different</b>	<b>89833.33</b>		

As mentioned earlier, the model answer approaches this slightly differently, by excluding the fixed salaries, and then working out the temporary amounts, but the effect is the same.

The next cash flow is maintenance. There is much less information here – essentially two numbers; the \$14,600 prior month cost and the \$4,000 flat fee (ignoring the water park for now). Again, it's important to stress that incremental cash flows are the difference between taking the decision to open and not close. If the hotel is open, there's no extra information, so it can be assumed that it will cost \$14,600 again. If it closes, maintenance will cost \$4,000 – therefore the difference if the hotel opens is \$10,600 (\$14,600 – \$4,000), i.e. it only costs an extra \$10,600 to open compared to closing.



B7		=14600-4000			
	A	B	C	D	
1	<b>Hotel</b>				
2	Rooms	130200			
3	Extras	22320			
4	Income	152520			
5	Costs				
6	Staff	89833.33			
7	Maintenance	=14600-4000			
8	Power				
9	Security				
10	Water				
11	Total costs				
12	Incremental cash flows				

There is no need for a separate working for this – the calculation can be input directly on to the answer.

Note that it could be argued that maintenance costs might go down if park activity was reduced – this was a valid point made by some in part (b).

Power costs consist of two charges – electricity and gas. The scenario says that electricity is a fixed charge of \$7,000 – therefore this will be incurred whether the hotel opens or closes, so it is not relevant to the decision and not an incremental cash flow. The gas amount is made up of a fixed amount (which again, is not relevant), and a variable amount which will increase from last month. As a result, the prior month’s charge needs to be split into electricity and gas to allow identify the variable gas amount to be identified then the increase of 50% applied:

O5		=O2-O3-O4		
	M	N	O	P
1			<b>Power</b>	
2		Last month	20000	
3		Fixed Electricity	8000	
4		Fixed gas	2200	
5		Variable gas	=O2-O3-O4	
6				
7				

Identify the variable amount by removing the fixed amounts from the total.

O6		=O5*150%		
	M	N	O	P
1			<b>Power</b>	
2		Last month	20000	
3		Fixed Electricity	8000	
4		Fixed gas	2200	
5		Variable gas	9800	
6		Increase by 50%	14700	
7				



For security costs, it says that no changes would be made if the hotel closes. This means that whatever decision is made, the cash flows would be identical – therefore there are no incremental cash flows.

The last cost is water. Prior month’s costs were \$12,900. If the hotel stays open the cost will be \$6,450, and if it closes it would be zero. As the decision is between the latter two options, the difference in cash flows is \$6,450 – \$0, i.e. \$6,450, so that is the incremental cash flow.

Now all of the individual incremental cash flows have been calculated, the total just needs to be worked through. First, calculate total costs:

B11		=B10+B9+B8+B7+B6		
	A	B	C	D
1	Hotel			
2	Rooms	130200		
3	Extras	22320		
4	Income	152520		
5	Costs			
6	Staff	89833.33		
7	Maintenance	10600		
8	Power	14700		
9	Security	0		
10	Water	6450		
11	Total costs	=B10+B9+B8+B7+B6		
12	Incremental cash flows			

This formula is fine, but it’s starting to get time consuming clicking on all the different cells (and more prone to error). Like all spreadsheet software, the SUM formula can be used to save time. To do this, instead of the above type ‘= SUM(’, then select the cells to be added (left-click and hold, then drag the mouse over the cells) and finally close the bracket:

B11		=SUM(B6:B10)		
	A	B	C	
1	Hotel			
2	Rooms	130200		
3	Extras	22320		
4	Income	152520		
5	Costs			
6	Staff	89833.33		
7	Maintenance	10600		
8	Power	14700		
9	Security	0		
10	Water	6450		
11	Total costs	=SUM(B6:B10)		
12	Incremental cash flows			

B6:B10 means all the cells from B6 to B10.



B12		=B4-B11	
	A	B	C
1	<b>Hotel</b>		
2	Rooms	130200	
3	Extras	22320	
4	Income	152520	
5	Costs		
6	Staff	89833.33	
7	Maintenance	10600	
8	Power	14700	
9	Security	0	
10	Water	6450	
11	Total costs	121583.33	
12	Incremental cash flows	30936.67	
13			

The get the total incremental cash flows deduct costs from income. Note that the total income and total costs figures aren't essential to getting full marks, but they make the calculations easier.

Finally, don't forget to state whether Belton Park Resort should open or close. As the requirement was **state**, no justification is required. If it said **Explain**, then 'The hotel should remain open as the incremental cash flows are positive' would be enough.

C12		Open		
	A	B	C	D
1	<b>Hotel</b>			
2	Rooms	130200		
3	Extras	22320		
4	Income	152520		
5	Costs			
6	Staff	89833.33		
7	Maintenance	10600		
8	Power	14700		
9	Security	0		
10	Water	6450		
11	Total costs	121583.33		
12	Incremental cash flows	30936.67	Open	
13				

Here though, just writing Open is enough.

The requirement is complete for the hotel, but the same has to be done for the water park. This is where the CBE software is so useful – the items are the same, so candidates can copy and paste what they've already done, and tweak it for the differences in the water park. Many candidates also took a columnar approach, which worked very well:

	A	B	C
1		Hotel	Water
2	Rooms	130200	96768
3	Extras	22320	41472
4	Income	152520	138240
5	Costs		
6	Staff	89833.33	35328
7	Maintenance	10600	4000
8	Power	14700	14250
9	Security	0	0
10	Water	6450	12100
11	Total costs	121583.33	65678.00
12	Incremental cash flows	30936.67	72562.00
13		Open	Open

Whichever way is chosen, a little bit of planning while reading the scenario can allow an answer to be presented in an effective way. This commentary won't go through the detail of the water park as there's not much difference between that and the hotel, and the model answer can be reviewed. Just remember to practise using the CBE software as much as possible to become familiar with its capabilities.

Part (b) uses the word processing software. Candidates generally have less trouble using this. A few pointers on this question – the requirement to 'Discuss any factors...' does say how many factors to discuss, which can make it difficult. Candidates often use whatever remaining time they have and if that's not much, answers can be too brief. As a rule of thumb, a well discussed point will usually score 2 marks; a weaker point can score 1. This does vary from question to question, depending on how difficult it is, but for a 5 mark question such as this, it is recommended that candidates aim to make three good points (more if there is time) and at least then if each point only scores 1 mark, then 3 out of 5 means a pass on this requirement.

There are many different points which could be made. The most common mistake here was for candidates to suggest that the resort should look at the costs v benefits and yet this is what was done in part (a).

In terms of layout, try and break the answer up. One paragraph with three points in it is much harder for the marker to separate out than if a candidate has spaced them out into separate paragraphs, or better still used headings. Some of the more common answers have already been mentioned, so a strong answer might start like this:

#### Accuracy of Data

As there are only 2 month's worth of data, the figures may not be accurate, which may lead to an incorrect decision being made. The estimates of the changes to January's figures may also be wrong.

|

Headings are easy to add. Just select the text and click the  button. Click it again to turn off underlining.

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#### Accuracy of Data

As there are only 2 month's worth of data, the figures may not be accurate, which may lead to an incorrect decision being made. The estimates of the changes to January's figures may also be wrong.

#### Local competition

If local resorts are closing down their hotels, Belton may be able to win more business by staying open, which will benefit them in the future. Similarly, if they close, they may lose existing customers to other resorts.

#### Effect on Reputation

If Belton closes their park entirely after only 2 months, people might think that they are struggling, or are unreliable, which may lead to lost business.

As mentioned in the model answer, there are many valid points which could be included, but the clearer the answer is made, the easier it is to award credit. Note that this answer is a lot briefer than the model answer – the PM examining team know candidates are under time pressure, so as long as points are clear and well explained, they will be awarded credit.

## Question 32

Best Night Co belongs to the performance measurement section of the syllabus and the focus of the question was a discussion of the financial and non-financial performance of the business. The scenario included a wide range of numerical information, as well as other details regarding the business, which candidates were expected to use to discuss the performance. This type of question has been tested many times before in the Performance Management (PM) examination and shares many similarities with recent questions published on ACCA's website.

First, from an exam technique point of view, it is important to read the first paragraph (or maybe just couple of lines if it is a long paragraph) to gather insights on the business the question is about. In this question, Best Night Co is a business in the hospitality sector and operates a chain of 30 hotels. It also prides itself on offering comfortable rooms and quality services. This will give candidates an insight into the type of business the question is focused on.

Second, a candidate should read the requirements of the question. This particular question comprised of one 20-mark requirement (see below) which can appear daunting at first but this can be overcome by applying good exam technique. A key skill is the ability to break the requirement down into manageable parts and tackle each in turn.

### Required:

**Using the information provided, discuss Best Night Co's financial and non-financial performance for the year ended 30 June 20X7.**

Note: There are 5 marks available for calculations and 15 marks for discussion.

**(20 marks)**

The first point to note about this requirement is that there is already some guidance about how the 20 marks are broken down – 5 marks for calculations and 15 marks for discussion. In this type of performance measurement question, each correct calculation is worth 0.5 marks so candidates should aim to be performing ten **relevant and correct** calculations to score all of the 5 marks. There were in excess of 30 relevant calculations which could have been performed from the data provided in the scenario, so these 5 calculation marks should have been relatively simple to score.

Unfortunately, some candidates did not perform as well as they could have on this question because they did not perform enough calculations. A number of candidates only produced four or five calculations, which not only means they missed out on calculation marks but it also gave them less to talk about in their subsequent discussion.

The type of calculations required was not difficult. A calculation of the percentage growth or decline in any of the items would have scored 0.5 marks. Candidates are advised to take care to calculate the percentage change of any figure in the correct way by taking the difference

between the two years, dividing it by the earliest year's figure and then multiplying by 100 to arrive at the percentage. The majority of candidates were able to calculate enough correct figures to score well here. It is always worth showing how you have calculated your figures, whether that is in a separate working, or in the body of your discussion.

### Discussion of performance

Once candidates have calculated sufficient relevant figures, it is necessary to discuss them, together with other information supplied in the scenario, which relates to the performance of Best Night Co. Generally in a question of this type, each relevant discussion point is worth 1 mark, although more can be gained with further expansion on that point. Stronger candidates broke down their discussion into headings, which not only provided a clear and easy to follow structure for the marker but it also made it much easier for the candidate to see where they could gather marks. The way to choose appropriate headings is by looking back to the scenario. In this question there was plenty of information about revenue, so that would have been a good first heading. Then some cost and operating profit details and enough information to calculate ROCE were supplied, so these could form the next two headings. For the final heading, looking at the non-financial information, customer satisfaction is extremely important to Best Night Co.

Having broken down the discussion into four distinct headings, a candidate only needed to make an average of two good points under each of them, along with a few correct calculations, to comfortably pass this question. In the CBE, these headings can be directly typed into the response option and the rest of the answer populated underneath. This will ensure the answer remains structured.

As with any exam question, it is recommended candidates consider the requirement carefully: 'Discuss Best Night Co's financial and non-financial performance'. To address this requirement it is necessary to give an answer which is specific to the scenario given, as it is asking about Best Night Co. No marks were awarded for generic points about performance which didn't relate to the scenario. Some candidates discussed some good general points about performance, however because they were not specific to the scenario they did not score.

Additionally, a number of candidates simply took information from the scenario and quoted it in their answer without analysis or reasoning. For example, 'revenue has increased year on year' or 'Best Night Co takes account of competitors' prices'. These statements are true, but don't score any marks as they have been lifted straight from the scenario with nothing added.

So what *should* a candidate do when answering this type of question? There are two key ways of making discussion points which are worthy of marks:

- Making a link between two separate pieces of information given in the scenario; and
- Using information given in the scenario to state why things have changed year on year.

### Linkages

There are many statements in this scenario which can be linked together. For example, it states in the first paragraph of the question that 'Best Night Co prides itself on the comfort of the rooms' but towards the end, the scenario mentions that customers have commented that the beds need new mattresses to improve the level of comfort they provide. These two pieces of information are clearly at odds with one another. Best Night Co appears not to be delivering on one of its key targets. A candidate noticing and discussing this linkage would have been given credit.

### Justification

In the calculations section above, it was discussed how many of the calculation marks could be earned by calculating the percentage growth or decline in any of the items given in the scenario. Further discussion marks were awarded for those candidates who looked carefully through the scenario to see if there were any reasons given for those percentage changes.

The most obvious one to look at was revenue: Room revenue at standard price had increased by 6.6% but why had this happened? Reading through the scenario reveals that the average standard room price per night had gone up from \$135 to \$140, which partially explains the increase in room revenue at standard price. Candidates noticing this reason and stating it in their answer scored 1 mark. Stronger candidates took it a step further and earned more marks by commenting that the increase in standard room prices was only 3.7%, which is lower than the room revenue increase of 6.6%, therefore there must have been something else happening to explain the increase. Another careful read through of the scenario shows us that the occupancy rates of the hotel increased from 72% to 74%, so more people stayed at the hotel. The room revenue at standard price increased not only due to increased standard prices, but also because of more rooms being sold.

Weaker candidates attempted to explain why things had changed but in doing so contradicted the information provided in the scenario. For example, the room discounts or rate reductions had increased hugely between the two years provided. The scenario stated that 'hotel managers have the authority to offer discounts and reduce prices when occupancy rates are expected to be low' and so some candidates concluded that room discounts had gone up because hotel occupancy had fallen. This is clearly not true as the occupancy rate had increased from 72% to 74%.

Finally, the most common error from candidates on this question (and a very easy mistake to make) is to offer advice to the company. Advice does not address the requirement and so it doesn't matter how insightful the piece of advice is, it will not score any marks and it wastes valuable time in the exam.