Source A for Question 1

WJ plc uses activity based costing (ABC). It calculates selling prices by adding a mark-up of 50% to the total of budgeted direct costs and overheads of each product.

The following information is available.

1   Each year the company manufactures and sells 200 units of Product A and 480 units of Product B.

2   Information about the budgeted direct costs of **Product A** is as follows:

direct materials	cost $28 000 per annum, using 7 kilos per unit
direct labour	requires 9 hours per unit, paid at $11 per hour

3   Budgeted overheads per annum for **both** products are as follows:

	$	
quality inspections	12 000	180 inspections for Product A and 320 for Product B
order processing	18 000	240 orders for Product A and 120 for Product B
other overheads	37 400	apportioned on the basis of units produced

1 **Read Source A in the insert.**

(a) Calculate the selling price of **one unit** of Product A.

....

....

....

....

....

....

....

....

....

....

.... [6]

Additional information

The directors are considering ways in which to reduce the costs incurred by **Product A** so that its selling price can be reduced. They are considering two options.

Option 1

The directors think that the number of orders processed for Product A could be reduced by 50% if a larger quantity of material was bought with each order.

Discounts could then be earned reducing the direct material price by 10%.

The reduction in the number of orders processed would also mean that the junior purchasing clerk could be made redundant. This would reduce the total cost of order processing by $4944 per annum.

Option 2

This involves using workers in the factory who are less skilled than those employed at present. They would be paid $2.30 per hour less than the current budgeted rate.

These workers would be allowed to take 10% longer on each unit to compensate for their lower skill level.

There would be an increase of 80 quality inspections each year for Product A. This would increase the total cost of the inspections by $3080 per annum.

Under both options the rate of mark-up would be unchanged. There would be no change to the number of orders processed or inspections undertaken for Product B, and overheads would be apportioned in line with the revised level of each activity.

(b) Calculate the **change** in selling price of **one unit** of Product A which would arise if option 1 was implemented.

....

....

....

....

....

....

....

....

....

....

....

.... [5]

(c) Calculate the **change** in selling price of **one unit** of Product A which would arise if option 2 was implemented.

....

....

....

....

....

....

....

....

....

....

.... [5]

(d) Advise the directors whether or not they should implement either option 1 or option 2. Justify your answer.

....

....

....

....

....

....

....

....

....

....

....

....

....

.... [7]

(e) Suggest **two** reasons why the directors had chosen to use activity based costing (ABC) rather than traditional costing methods in setting the selling prices.

1 ....

....

2 ....

....
[2]

[Total: 25]

Question	Answer	Marks
1(a)	**Calculate the selling price of <u>one unit</u> of product A.**	**6**

	$	
Direct material	140	**(1)**
Direct labour	99	**(1)**
Quality inspections (12 000 × 180/500 × 1/200)	21.60	**(1)**
Order processing (18 000 × 240/360 × 1/200)	60	**(1)**
Other overheads (37400 × 1/680)	<u>55</u>	**(1)**
Cost	375.60	
Mark-up	<u>187.80</u>	
Selling price	<u>563.40</u>	**(1)OF**

OR

	$	
Direct material	28 000	**(1)**
Direct labour	19 800	**(1)**
Quality inspections (12 000 × 180/500)	4320	**(1)**
Order processing (18 000 × 240/360)	12 000	**(1)**
Other overheads (37 400 × 200/680)	<u>11 000</u>	**(1)**
Cost	75 120	
Mark-up	<u>37 560</u>	
Revenue	<u>112 680</u>	
Selling price	<u>56 340</u>	**(1)OF**

Question	Answer	Marks
1(b)	**Calculate the change in selling price of one unit of product A which would arise if option 1 was implemented.**	5

	$		$	
Saving in direct material (140 × 10%)			14	**(1)**
Previous order processing cost	60	**(1)OF**		
New order processing cost **W1**	(32.64)	**(1)**	27.36	
Cost saving			41.36	
Mark-up			20.68	**(1)OF**
Reduction in selling price			62.04	**(1)OF**

OR

	$	
Direct material (140 × 90%)	126	**(1)**
Direct labour	99	
Quality inspections	21.60	
Order processing **W1**	32.64	**(1)**
Other overheads	55	
Cost	334.24	
Mark-up	167.12	**(1)OF**
New selling price	501.36	
Old selling price	(563.40)	**(1)OF**
Reduction in selling price	62.04	**(1OF)**

W1 (18 000 – 4944) × 120/240 × 1/200 = 32.64

Question	Answer	Marks
1(c)	**Calculate the change in selling price of one unit of product A which would arise if option 2 was implemented.**	5

	$		$	
Previous direct labour cost	99			
New direct labour cost (9.9 × 8.70)	(86.13)		12.87	**(1)**
Previous inspection cost	21.60	**(1)OF**		
New inspection cost **W1**	(33.80)	**(1)**	(12.20)	
Cost saving			0.67	
Mark-up			0.33	**(1)OF**
Reduction in selling price			1.00	**(1)OF**

OR

	$	
Direct material	140	
Direct labour (9.9 × 8.70)	86.13	**(1)**
Quality inspections **W1**	33.80	**(1)**
Order processing	60	
Other overheads	55	
Cost	374.93	
Mark-up	187.47	**(1)OF**
New selling price	562.40	
Old selling price	(563.40)	**(1)OF**
Reduction in selling price	1.00	**(1)OF**

W1 (12 000 + 3080) × 260/580 × 1/200 = 33.80

Question	Answer	Marks
1(d)	**Advise the directors whether or not they should implement either option 1 or option 2. Justify your answer.** **Option 1 (max 3)** This would lead to a considerable drop in selling price **(1)** which could stimulate demand and require an increase in production **(1)**. What are competitors charging for this product? **(1)** If larger quantities of materials are bought at any one time, inventories will be larger and there is less chance of a stock-out **(1)**. If larger quantities of material are bought at any one time there might be a need for additional storage facilities with associated costs **(1)**. More cash could be tied up in inventory **(1)**. The decrease in cost would cause a decrease in the mark-up leading to lower profit being earned on product A if sales volume was unchanged **(1)**. The discount would increase the profit **(1)**. Because revised order processing costs are being apportioned across a smaller number of orders there is a knock-on effect on product B where costs and selling price increase by a small amount **(1)**. Losing the junior purchasing clerk means that no-one is being trained up for when the chief purchasing clerk leaves/retires which could be detrimental to the smooth running of the business **(1)**. **Option 2 (max 3)** There is a small reduction in cost and selling price **(1)**. Such a small change is unlikely to make the product more attractive to customers **(1)**. The reputation of the company could be affected by laying off the existing workers **(1)**. The change may cause quality of the product to decline **(1)**. This allows workers to spend longer on each unit which may improve quality **(1)**. There may be training costs for the less skilled workers **(1)**. It may not be easy to find enough replacement workers all at once **(1)**. What is the company's plan if the quality inspections show up a lot of problem units? **(1)** **Decision supported by a comment (1)** **Accept other valid responses.**	7
1(e)	**Suggest two reasons why the directors had chosen to use activity based costing (ABC) rather than traditional costing methods in setting the selling prices.** ABC provides more accurate/realistic information. **(1)** It identifies how overheads have been incurred. **(1)** It identifies cost saving areas **(1)** It helps to identify whether the product should be continued. **(1)** **Accept other valid responses.** **Max 2**	2