Finance and accounting : Quantitative Worksheet

Exercise 1. Read the following extract

Joe Sharma started his taxi business with one car. He purchased this vehicle with his own savings. Initially, he was a sole trader. After two years of operation he took on a partner, who invested additional capital. This was used to purchase more vehicles and a small garage to service the cars. The business expanded further, financed by bank loans. Joe and his partner decided to convert it into a private limited company. Shares were sold to business associates, family and employees. This share capital was used to start a small commercial transport department with two vans. As the fleet of vehicles was growing, substantial inventories of spare parts were held, increasing the working capital needed. Regular business clients of the firm were offered credit terms of up to two months.

Joe found out about another taxi business being sold by the owners. It had a fleet of prestige cars and substantial premises. The directors of Joe's limited company agreed to make an offer to buy this business. They agreed that it should be financed by converting the business to a public limited company with a sale of shares on the Stock Exchange. The alternative would have been a long-term loan of $10 million at an annual interest rate of 8%. However, the directors worried about the level of existing debts. They preferred the share issue plus finance from retained earnings to pay for buying the other business. The takeover bid for the other taxi business was successful.

Another recent development was the decision to update ST's computer facilities at the head office by leasing new computers. This led to an update of the accounting and invoicing system. This allowed quicker billing of customers and more effective management of trade receivables.

Questions

Calculate the **annual interest** on the $10 million loan if this had been taken out.

Solutions

$0.8 \times 10\text{m} = \$800\ 000$

Exercise 2. Read the following extract

Shares in SJ, a large low-cost airline, performed strongly on its first day of trading as a public limited company. The price rose 10% to $3.42. The offering was priced at $3.10 a share. The issue of 63 million shares raised $195 million. The public issue of shares represented about 25% of the share capital. The stake held by Stavros, the founder and chairman of the company, is now valued at

about $328 million. Stavros and his brother and sister still control a stake of about 75% in SJ.

Investment bankers said the sale of shares attracted strong interest. The performance of the shares was partly because of the strong rise in the share price of other low-cost airlines. This encouraged investors to buy into SJ.

Most of the new share capital will be used to purchase new aircraft as part of the airline's plans for a rapid expansion during the next four years. This includes the addition of 32 new Boeing 787s. Some of the capital raised will be used to pay back some of SJ's debenture holders.

Questions

Calculate the **share price** on the second day of trading if it increased by a further 15%.

Solutions

$\$3.42 \times 1.15 = \$3.93$

Exercise 3.

in $000	Jan	Feb	Mar	Apr
CASH INFLOWS				
Owner's capital injection	6	0	0	0
Cash sales	3	4	6	6
Payments by trade receivables (customers who were given credit)	0	2	2	3
Total cash in	9	6	8	9
CASH OUTFLOWS				
Lease	8	0	0	0
Rent	1	1	1	1
Payments to trade payables (suppliers giving credit period for materials)	0.5	1	3	2
Labour	1	2	3	3
Other costs	0.5	1	0.5	1.5
Total cash out	11	5	7.5	7.5
NET CASH FLOW	(2)	1	0.5	1.5
Opening balance	0	(2)	(1)	(0.5)
Closing balance	(2)	(1)	(0.5)	1

Questions

Draw up the revised cash flow forecast for April, assuming: - cash sales are forecast to be $1 000 higher - payments to trade payables are forecast to be $500 higher - other costs are forecast to be $1 000 higher.

Recalculate the closing cash balance for April.

Solutions

in $000	Apr	Revised Apr
CASH INFLOWS		
Owner's capital injection	0	0
Cash sales	6	7
Payments by trade receivables (customers who were given credit)	3	3
Total cash in	9	10
CASH OUTFLOWS		
Lease	0	0
Rent	1	1
Payments to trade payables (suppliers giving credit period for materials)	2	2.5
Labour	3	3
Other costs	1.5	2.5
Total cash out	7,5	9
NET CASH FLOW	1.5	1
Opening balance	(0.5)	(0.5)
Closing balance	1	0.5

Exercise 4. Read the following extract

'I stood outside some of these fashion shops for hours counting the number of people coming out with their carrier bags and I am sure my sales forecasts are OK,' Sayuri said to her business partner, Korede. They were completing a business plan for an exclusive top-brand fashion shop in the city. Sayuri's primary research was not the only evidence they used to prepare sales and cash inflow forecasts. Her secondary research on the internet showed a rapid growth in high-income consumers spending increasing amounts on expensive clothing.

Sayuri and Korede based their cash outflow forecasts on estimates of electricity and telephone usage. Korede had found a suitable shop, so they knew how much the rent would be. They would each pay themselves a salary of $2 000 a month. Other labour costs were less certain. Should they employ full-time salaried staff or part-time hourly wage employees? The monthly payments to suppliers of the clothes were also uncertain. How much credit would the shop be given? What would happen to cash flow forecasts if inventory was left unsold and price reductions had to be advertised? Whatever the uncertainties, both Sayuri and Korede understood why they had to construct a cash flow forecast for their business plan. The almost completed forecast is shown in Table

in $000	Apr	May	Jun	Jul
CASH INFLOWS				
Owner's capital injection	28	0	0	0
Cash sales	6	8	12	9
Payments by trade receivables (customers who were given credit)	0	2	2	3
Total cash in	34	10	14	12
CASH OUTFLOWS				
Lease	18	0	0	0
Rent	2	2	2	2
Payments to trade payables (suppliers giving credit period for materials)	6	4	3	4
Labour	3	3	4	3
Other costs	6.5	2	2.5	1.5
Total cash out	35.5	11	11.5	y
NET CASH FLOW	x	(1)	2.5	z
Opening balance	0	(1.5)	(2.5)	0
Closing balance	(1.5)	(2.5)	0	1.5

Questions

1. Complete the cash flow forecast by inserting values for x, y and z.
2. The first three months of actual trading were poor and July's actual opening balance was ($2000). Draw up a new cash flow forecast for July, assuming 20% lower cash sales, 20% lower payments to clothes suppliers and all other factors remaining unchanged.

Solutions

1. x = (1.5), y = 10.5 and z = 1.5
2.

in $000	Jul	Revised Jul
CASH INFLOWS		
Owner's capital injection	0	0
Cash sales	9	7.2
Payments by trade receivables (customers who were given credit)	3	3
Total cash in	12	10.2
CASH OUTFLOWS		
Lease	0	0
Rent	2	2

in $000	Jul	Revised Jul
Payments to trade payables (suppliers giving credit period for materials)	4	3.2
Labour	3	3
Other costs	1.5	2.5
Total cash out	10.5	9.7
NET CASH FLOW	1.5	0.5
Opening balance	0	(2)
Closing balance	1.5	(1.5)

Exercise 5. Read the following extract

Asif Iqbal is disappointed to hear that the Central Bank has announced an unexpected increase in interest rates. He has just submitted his business plan to the bank manager for approval. He wants a business start-up loan and overdraft arrangement to set up his new building business. Asif aims to specialise in building house extensions. Asif read that the Central Bank took the decision to raise interest rates to prevent average prices rising rapidly. Asif's business plan contains a cash flow forecast for the first six months of trading.

in $	Mar	Apr	May	Jun	Jul	Aug
CASH RECEIPTS						
Capital injection	5 000	0	0	0	0	0
Start-up loan	15 000	0	0	0	0	0
Cash sales	1 000	3 000	5 000	5 000	16 000	19 000
Payments from trade receivables	0	12 000	10 000	10 000	12 000	13 000
Total cash in	21 000	15 000	15 000	15 000	28 000	32 000
CASH PAYMENTS						
Capital expenditure	10 000	0	0	0	0	0
Labour	2 000	6 000	7 000	7 000	7 000	7 000
Payments to trade payables (for materials)	5 000	10 000	8 000	8 000	10 000	12 000
Overheads inc. interest	5 000	7 000	7 000	7 000	9 000	9 000
Total cash out	22 000	23 000	22 000	22 000	26 000	28 000
NET CASH FLOW	(1 000)	(8 000)	(7 000)	(7 000)	2 000	4 000

in $	Mar	Apr	May	Jun	Jul	Aug
Opening balance	0	(1 000)	(9 000)	(16 000)	(23 000)	(21 000)
Closing balance	(1 000)	(9 000)	(16 000)	(23 000)	(21 000)	(17 000)

Questions

Calculate the new closing balance for March if interest payments increase by $500 and cash sales are 10% lower than forecast.

Solutions

Cash sales will be $100 lower. Overheads will now be $5 500. So, closing balance = ($1 600).

Exercise 6. Read the following extract

The bank manager has just telephoned Gita. The bank is not paying a cheque she wrote to her main supplier. 'Did you know that your overdraft has reached its limit of $15 000?' the bank manager asked. 'We will only continue with your overdraft if you come into the office tomorrow with a cash flow forecast for the next three months.'

Gita never worried too much about finance because this was always looked after by her business partner. He recently left the dressmaking business, taking his share of the capital with him. Gita used her savings to pay him for his share of the business. She has no idea how the business has reached such a poor cash position. She cannot put any more money in herself.

That evening she looks over the recent accounting records of the business. She manages to work out what the business could expect over the next three months in terms of cash payments and receipts. Sales are likely to be $12 000 for the next two months (starting in July) and 50% lower than this in the third month. Half of these sales will be for cash. Half will be on one month's credit. She has sold $8 000 on credit in June.

She estimates all overhead expenses, including interest payments to the bank, to be $6 000 per month. Labour is likely to be $3 000 per month. Materials, paid for one month after delivery, are always one-half of each month's sales. They are delivered in the same month in which the dresses they are used to make are sold. Opening cash balance is negative by the amount of the existing overdraft ($15 000).

Questions

Calculate the forecasted closing cash balance for July.

Solutions

All figuresin $000	Jul
CASH INFLOWS	
Cash sales	6
Paments by debtors	8
Total cash in	14
CASH OUTFLOWS	
Materials	8
Labour	3
Overheads	6
Total cash out	17
NET CASH FLOW	(3)
Opening balance	(15)
Closing balance	(18)

Exercise 7. Read the following extract

HT produces two products: a pump for central heating systems and an extractor fan. Both products pass through two process cost centres during their manufacture. Different equipment is used for each product. The direct labour and material costs have been identified and allocated to the two products.

The management accountant has been asked to calculate the full cost of both products. This will allow the unit cost to be calculated as a basis for pricing decisions. In 2021, 50 000 pumps and 40 000 fans were produced.

	Pump ($000)	Fan ($000)
Machining and assembling department:		
Direct materials	100	130
Direct labour	170	50
Testing department:		
Direct labour	30	20
Total overheads of the business in 2021 ($000):		
Rent	60	
Electricity	20	
Administration	80	
Depreciation	40	
Total overheads	200	

Questions

1. Calculate the average direct cost of producing each product.

2. Allocate total overhead costs in proportion to the direct costs incurred.
3. Calculate the average (unit) full cost of each product.

Solutions

1. Average direct cost = (direct labour cost + direct material cost) ÷ output Pump = 300 000 ÷ 50 000 = $6 Fan = 200 000 ÷ 40 000 = $5
2. Total direct costs = $500 000, of which pump = $300 000 and fan = $200 000 Pump: allocated overhead cost = 3/5 × 200 000 = $120 000 Fan: allocated overhead cost = 2/5 × 200 000 = $80 000

3. Full cost for pump = 420 000 ÷ 50 000 = $8.40 Full cost for the fan = 280 000 ÷ 40 000 = $7.00

Exercise 8. Read the following extract

The direct cost of each hotel guest at the Seaview hotel is $15 per night. The room price is $50 per night. The total indirect cost per week is $1 000. On average, 100 guests stay each week.

Questions

1. What is the contribution per guest per night?
2. Calculate the weekly contribution from 100 guests.
3. Calculate the profit made in one week with 100 guest nights.
4. A group of 50 people have asked to spend one night at the hotel during a week when only 30 other guests are booked. The group has offered to pay a price of $20 each. Discuss whether the manager should accept this offer.

Solutions

1. Contribution per guest = price - variable cost = 50 - 15 = $35
2. 100 × 35 = $3 500
3. Profit = total contribution - indirect costs 3 500 - 1 000 = $2 500
4. If the hotel refuses the offer, assuming that just 30 guests stay at a price of $50, profit = 1 500 - (1 000 + 450) = $50. Accepting the offer makes a contribution of $5 per guest and a total contribution of $250. Therefore, profit = 250 + 50 = $300.
    - hotel should accept the offer
    - this depends on whether the hotel could sell more rooms at above $20 per night during the same week
    - if it can it would earn a higher contribution from selling more room nights at a price above $20.

Exercise 9. Read the following extract

Direct labour costs	X	Y	Z
Direct labour cost	5	7	9
Direct materials costs	4	12	10
Price per unit	20	30	21
Current annual output (units)	500	1000	400

Total overhead costs are $10 000. The company currently uses full costing and each product is allocated a proportion of overheads on the basis of floor space taken up: X = 30%, Y = 50%, Z = 20%.

Questions

1. Calculate the *unit contribution* of each product.
2. If annual output is all sold, calculate the *total contribution* of each product.
3. Calculate the profit or loss made by each product using full costing at the current output level.
4. Calculate the impact on the total profit of the business if production of Product Z is stopped. (Remember: Overhead costs allocated to Z will still have to be paid as they are fixed costs.)

Solutions

1. Unit contribution = price less unit variable cost X = $20 - $9 = $11 Y = 30 - 19 = $11 Z = 21 - 19 = $2
2. Total contribution = unit contribution x sales X = 500 × $11 = $5 500 Y = 11 × 1 000 = $11 000 Z = 2 × 400 = $800
3. X: Total contribution = $5 500. Allocated overheads = 30% of $10 000 = $3 000 Total profit on Product X is $5 500 - $3 000 = $2 500 Y: total contribution = $11 000. Allocated overheads = 50% of $10 000 = $5 000 Total profit on Y = 11 000 – 5 000 = $6 000 Z: total contribution = $800. Allocated overheads = 20% of $10 000 = $2 000 Total profit on Z = 800 – 2 000 = - $1 200
4. Total profit if Z is produced is 2 500 + 6 000 – 1 200 = $7 300 If Z is dropped, the total profit, assuming no change in sales of X and Y, is: Total contribution of X and Y less total overheads = 5 500 + 11 000 – 10 000 = $6 500 Stopping production of Z causes a drop in profit of $800 as the contribution made by Product Z is lost but in the short term there will be no change in overheads.

Exercise 19. Read the following extract

The marketing director was determined to gain a large order for computer desks from a major local authority. There was spare capacity on the production line as a recent contract had just been cancelled. The buyer wanted to purchase 1 000 desks at a price of $70 each. BOS's marketing director knew this price was

lower than that paid by most customers. The order was being discussed at a board meeting and the production manager presented the following cost data:

Computer desks: full unit cost statement	
Direct labour	$25
Direct materials	$30
Apportioned overheads	$30
Full unit cost	$85

The production manager was surprised that the marketing department was willing to sell the desks for $70 each. 'How can you justify selling these desks at a total loss of $15 000?' he asked.

Who has the better case? Is the marketing director right to try to capture this order? Is the production manager right to be concerned at the apparent loss the order will make? The appropriate answer depends on the following factors: - Does the order make a contribution to overheads by the price exceeding direct costs? - Is there spare capacity? - Can the order be accepted without further expenditure, for example, a special machine needed just to make goods for this order? - Are other orders likely at this low price? - Is there another customer who is prepared to pay a higher price for these goods? - Will the price of the order become known to other customers?

Questions

1. Calculate, using the contribution costing approach, whether the new order will add to the profits of the business or not.
2. Recommend to the BOS board whether this new order for 1 000 desks should be accepted. Justify your recommendation.

Solutions

1. Unit contribution = selling price – direct costs = 70 - (25 + 30) = $15
   Total contribution = unit contribution × sales = 15 × 1 000 = $15 000
   Thus, the local authority order will make a total contribution of $15 000. This will add to the $15 000 of profit, assuming that there is no increase in overheads or knock-on effect on other sales.
2. **For accepting the order**:

- There is a positive contribution of $15 000. This will increase profits by $15 000, other things being equal.
- There is spare capacity on the production line.
- Accepting the order will increase capacity utilisation. This will help control average costs of production.
- There will be more effective use of fixed assets.
- There may be subsequent orders from the local authority.

- Accepting the order will increase market share.

Against accepting the order: - It may be possible to gain other, more profitable, orders. Once the local authority order is accepted, the business may have to reject other orders from new and existing customers. - If other customers find out that the local authority has secured a low price, they will try to negotiate lower prices as well. - Is there sufficient capacity to fulfil the order? If not, it may cause disruption to other customers. This will depend on the time period given to fulfil the order. - Does the order increase overheads?

Exercise 20. Read the following extract

The managing director of Onyx Garages is worried about the profitability of the business. She asked for cost and revenue details of the three divisions of the business: repairs, petrol sales and spare parts. She asked for overheads to be allocated on the basis of full cost according to labour cost. The information in Table 31.8 was provided.

When the managing director saw the information, she said, 'If we close down our repair division, then total annual profit will rise.'

As a trainee accountant working with this company, you have been asked for your opinion on the figures.

2021 ($000)	Repairs	Petrol	Parts
Revenue	27	300	68
Direct labour cost	15	25	10
Direct materials	9	190	40
Allocated indirect costs (total $60 000)	18	30	12
Total cost	42	245	62
Profit/(Loss)	(15)	55	6

Questions

Use the contribution costing method to produce a new costing statement.

Solutions

	Repairs	Petrol	Parts	Total
Sales revenue	24 000	215 000	50 000	289 000
()|27000|300000|68000|395000||*Directcosts*()				
Contribution				60 000
()|3000|85000|18000|106000||*Overheads*()				
Profit ($)				46 000

Exercise 21.

The following data relate to a single-product business: - direct labour per unit $12 - direct materials per unit $23 - fixed costs $200 000 - selling price $45 - maximum capacity of the factory is 30 000 units.

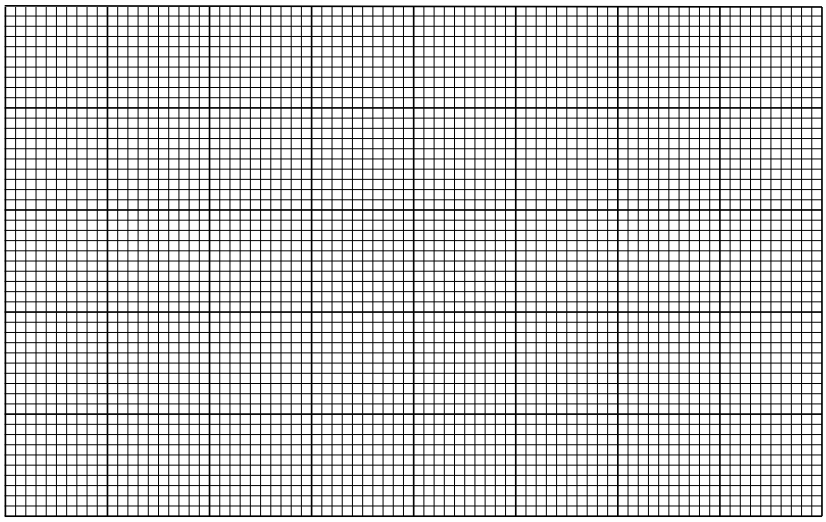

Figure 1: millimeterpapier

Questions

1. Draw a break-even chart using this data.
2. Show the break-even point and identify the break-even level of output.
3. From the graph, identify the profit expected at maximum capacity.
4. What is the margin of safety at an output level of 25 000 units?

Solutions

1. Break-even chart, showing the break-even point and the break-even level of output of 20 000 units
2.
3. Profit = revenue less costs = 1 350 000 – 1 250 000 = $100 000
4. 25 000 – 20 000 = 5 000 units

Exercise 22.

The following data has been collected about two possible locations for a business:

	Fixed costs	Direct costs per unit	Forecast price per unit	Maximum capacity
Site A	$60 000	$3	$6	40 000 units
Site B	$80 000	$2.50	$6	50 000 units

Questions

Use the data above to calculate, for each site: - the break-even level of output - the margin of safety - the total maximum profit assuming all units are sold.

Solutions

	Break-even	Safety margin	Maximum profit
Site A	$60 000/(6-3)=20 000 units)	40 000 - 20 000 = 20 000	240 000 - 180 000 = $60 000
Site B	$80 000/(6-2.50)=22 858 units	50 000 - 22 858 = 27 142	300 000 - 205 000 = $95 000

- break-even = fixed cost / unit contribution
- safety margin = current output - break-even output
- maximum profit = total revenue - total cost

Exercice 23. Read the following extract

AMC makes exclusively designed mobile (cell) phone covers. The sole owner of AMC needs to expand output as a result of increasing demand from mobile phone accessory shops. Current output capacity has been reached at 5 000 units per year. Each cover is sold to the retailers for $40. Production costs are: - direct labour $10 - direct materials $12 - fixed costs $54 000

The owner is considering two options for expansion:

Option 1: Extend the existing premises, but keep the same method of production. This would increase fixed costs by $27 000 per year. Direct costs would remain unchanged. Capacity would be doubled.

Option 2: Purchase new machinery, which will speed up the production process and cut down on wasted materials. Fixed costs would rise by $6 000 per year. Direct costs would fall by $2 per unit. Output capacity would increase by 50%.

Drawing the two break-even charts for these options would assist the owner in making this decision, but other issues may have to be considered as well.

Questions

1. Construct break-even charts for these two options. Identify the break-even point for each.

2. What is the maximum profit obtainable in each case?
3. If demand next year is expected to be 7 000 units, what would be the margin of safety in both cases?
4. The owner of AMC discovers that the fixed costs for Option 1 will be 20% greater than planned. Use a break-even chart to determine the new break-even point and then use the equation to verify it.
5. In Option 2 the increase in fixed costs is now planned to be $8 000 and the direct costs fall by $2.50 per unit. Determine the new break-even point.

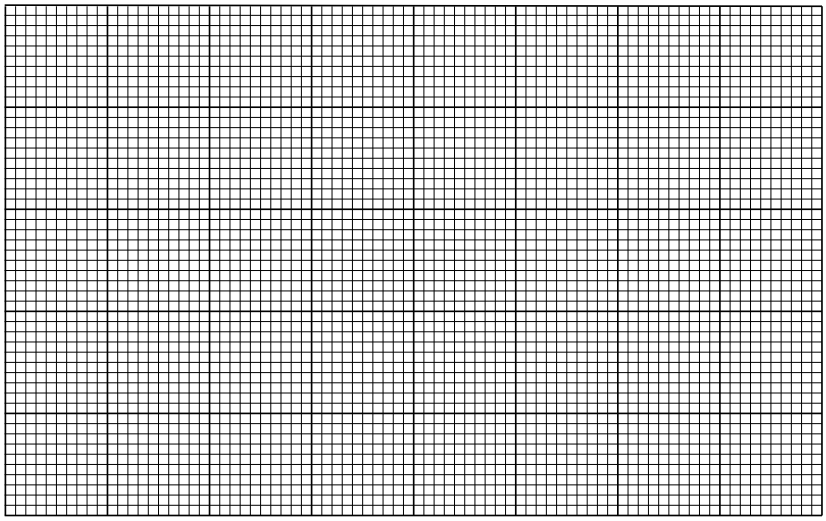

Figure 2: millimeterpapier

Solutions

1. Break-even chart showing Option 1 break-even point: The break-even level of output = 4 500 units Break-even chart showing Option 2 break-even point: The break-even level of output = 3 000 units
2. Option 1: $99 000 Option 2: $90 000
3. Option 1: 2 500 Option 2: 4 000
4. Break-even chart showing new Option 1 break-even point: The break-even level of output = 97 200 ÷ (40 - 22) = 5 400 units
5. 62 000 ÷ (40 - 19.50) = 3 180 units

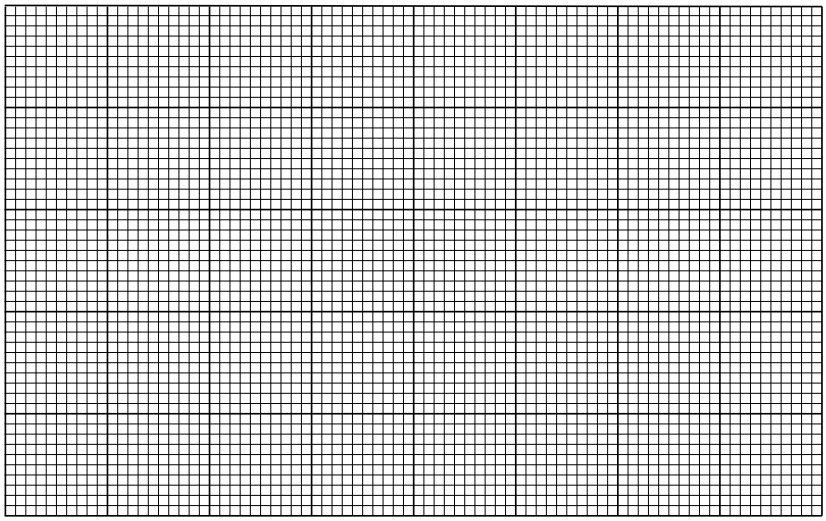

Figure 3: millimeterpapier

Exercise 24. Read the following extract

'We would be mad to accept this special order. It is priced at $1 850 below our normal price and $500 below the cost of providing the conference facilities and equipment hire.'

Rajesh, the hotel manager, was worried that Sheila, the conference manager of the Imperial Hotel, was considering accepting a booking request. The Friends of General Hospital wanted to book the conference suite for their annual general meeting involving 100 people. Sheila was asked for a price to organise the Friends' AGM. She used the normal hotel practice of adding 50% to the total cost of the event. This price was too high for the charity. It requested a reduction and suggested a lower figure of $2 200. As the AGM was planned for the end of February, a quiet time for all hotels, Sheila wanted to accept this special order. She sent details of it to Rajesh. She knew that many of the Friends were quite influential people with business interests. She believed that this could be to the hotel's long-term advantage.

The costing statement for the conference suite is as follows: - Direct cost per delegate, including food, three drinks and waiting staff $15 - Hotel overhead allocation per conference $1 000 - In addition, the Friends had requested some special audio-visual equipment, which the hotel would have to hire in for the day at a cost of $200.

Questions

1. Calculate the price that the hotel would normally charge for a conference of this size with the equipment requested
2. Calculate the contribution to the hotel's overheads and profit if the conference suite were let out for $2 200.

Solutions

1. Full cost = variable cost + additional cost of audio-visual equipment + allocated overhead = 15 × 100 + 200 + 1 000 = $2 700 $2 700 + 50% = 2 700 × 1.5 = $4 050
2. Contribution = revenue - additional cost of providing the conference = 2 200 – 1 700 = $500

Exercise 25. Read the following extract

Cosmic Cases manufactures a range of suitcases. There are four sizes of case, ranging from a small vanity case to a large luggage case with wheels for mobility. The cases are sold mainly online, either as a complete set or, more frequently, as individual items. The latest six-monthly costing statement (see Table 31.10) and revenue forecasts have just been prepared. Jill Grealey, the managing director, is concerned about the performance of the medium-sized case. She wants to discuss the data with the finance director.

	Vanity case	Small suitcase	Medium suitcase	Large suitcase
Total direct costs	$30 000	$35 000	$12 000	$20 000
Allocated indirect costs	$15 000	$12 500	$10 000	$10 000
Total costs	$45 000	$47 500	$22 000	$30 000
Total output	5 000	4 000	1 000	1 500

Questions

Calculate the total profit or loss made by each size of case.

Solutions

Profit = revenue - total costs: vanity case = 75 000 - 45 000 = $30 000; small suitcase = 72 000 – 47 500 = $24 500; medium suitcase = 20 000 – 22 000 = ($2 000); large suitcase = 37 500 - 30 000 = $7 500

Exercise 26. Read the following extract

A pottery business sells clay pots for $3 each. It expects to produce and sell 5 000 pots this year, although there is a total production capacity of 7 500. Fixed costs are $4 000 per year. The variable costs of production are $1.50 per pot. Gowri is considering two options in an effort to increase profits:

Option 1: Purchase a new energy-efficient kiln. This would raise fixed costs by $1 000 per year but reduce variable costs to $1.20 per pot. Output would remain unchanged.

Option 2: Reduce the price by 10%. Market research indicates that this could raise sales by 20%.

Questions

Draw a break-even graph to represent this data, identifying the break-even level of production and the margin of safety.

Solutions

Break-even level of output is 2 667 units. Margin of safety = 5 000 – 2 667 = 2 333 units.

Exercise 27. Read the following extract

Abbey Restaurant has a good local reputation for excellent meals but at high prices. It has a weekly capacity for 1 000 customers. It has a loyal customer base but Phil, the manager, is concerned about the low number of new customers.

Total revenue has fallen over the past few months. Phil believes that this is partly due to local unemployment caused by the closure of the nearby head office of an insurance company.

Phil is considering introducing a new menu that would offer less variety and less complicated dishes. He thinks that the new items on the menu would be cheaper and easier to produce. This means he would not have to replace one of the skilled chefs, who has just decided to leave. Phil estimates that the number of customers could increase by 20% per night on average as he has noticed that a recently opened medium-price café is full every night.

Phil has shown the following financial data to the restaurant's accountant, who has started to do some calculations. 'I need to calculate the break-even level of output and the margin of safety before I can advise you on what to do,' he told Phil.

Current menu option: Revenue per week (600 customers @ average of $20) $12 000 Average variable cost per meal $5 Overhead costs per week (including salaries of kitchen staff) $7 000

Proposed new menu: Average meal price $14 Average variable cost per meal $4 Overheads per week (including salaries of kitchen staff) $6 000

Questions

Calculate the forecast average monthly profit figures for the two menu options.

Solutions

Profit = total revenue - total cost Current menu: sales turnover = $12 000; variable cost = 5 × 600 = $3 000; overheads = $7 000; profit = 12 000 - 10 000 = $2 000 New menu: sales turnover = 14 × 600 × 1.2 = $10 080; variable cost = 4 × 720 = $2 880; overheads = $6 000; profit = 10 080 – 8 880 = $1 200