# Mock Exam One

## AAT Level 4 Management Accounting

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This practice assessment is one of a set of five AAT mock practice assessments which have been published for this subject. They are produced by our expert team of AAT tutors, giving real AAT exam style and standard tasks, that ensure the very best for exam success. All practice assessments are relevant for the current syllabus.

Our AAT tutors work extensively to produce study material that is first class and absolutely focused on passing your exam. We hope very much that you enjoy this product and wish you the very best for exam success! For feedback please contact our team aatlivelearning@gmail.com or safina@acornlive.com

# Mock Exam One
## AAT Level 4 Management Accounting

### Assessment information:

You have **2 hours** to complete this **Management Accounting** practice assessment.

- This assessment contains **9 tasks** and you should attempt to complete **every** task.
- Each task is independent. You will not need to refer to your answers to previous tasks.
- The total number of marks for this assessment is **100**.
- Read every task carefully to make sure you understand what is required.
- Where the date is relevant, it is given in the task data.
- Both minus signs and brackets can be used to indicate negative numbers **unless** task instructions state otherwise.
- You must use a full stop to indicate a decimal point. For example, write 100.57 **not** 100,57 or 100 57.
- You may use a comma to indicate a number in the thousands, but you don't have to. For example, 10000 and 10,000 are both acceptable.
- You will need to double click to enter values into a gapfill or cell within a table.

**Task 1** (16 marks)

This task is about the budgetary process and the preparation of budgets.

This task contains parts (a) to (c).

You are gathering budgeting data for a company.

**(a) Match each budgeted data item to its correct data source by selecting each box on the left, then one on the right.** (3 marks)

| Budget data | Appropriate source |
|---|---|
| Raw material prices | Competitor websites |
| Advertising costs | Company internet site |
| Selling prices | Marketing agencies |
| | Commodity price index |
| | Cash book |

**(b) Select the most appropriate type of budget for each of the following items.** (5 marks)

| | |
|---|---|
| Purchase of property, plant and equipment for the business | |
| Raw materials that must be purchased to fulfil production | |
| Estimated volume and earnings from selling products | |
| Expected cash receipts and disbursements during the period | |
| Functional budgets and the budgeted financial statements | |

**Picklist:** Activity-based Budget, Sales Revenue Budget, Priority-Based Budget, Material Cost Budget, Capital Expenditure Budget, Fixed Budget, Cash Budget, Master Budget.

**(c) Complete the production budget shown below. Round all figures to the nearest whole number of units, if necessary. Do not use negative figures.**

(8 marks)

- Closing inventory should be 10% of the following week's sales volume.
- 2% of all production will fail quality control checks and will be rejected.

| Production (units) | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 |
|---|---|---|---|---|---|
| Opening inventory | 2500 | | | | |
| Good production | | | | | |
| Sales volume | 14000 | 12500 | 8900 | 10100 | 11300 |
| Closing inventory | | | | | |
| Rejected production | | | | | |
| Total manufactured units | | | | | |

**End of Task**

**Task 2** (9 marks)

This task is about forecasting where constraints exist.

This task contains parts (a) to (b).

An ice cream manufacturer relies on milk as its primary ingredient and uses time series analysis to forecast monthly milk prices per 100 litres.

**(a)(i) Complete the table for the last quarter of 20X4 by entering any missing figures. Use a minus sign only to indicate a negative value for any seasonal variation. Round your answers to two decimal places.** (3 marks)

| 20X4 Price per 100 litres | October £ | November £ | December £ |
|---|---|---|---|
| Underlying price per 100 litres | | 26.00 | 29.00 |
| Seasonal Variation | 3.50 | | 2.50 |
| Seasonally adjusted price per 100 litres | 26.50 | 20.50 | |

Assuming the trend and seasonal variations continue in part (a)(i) above.

**(a)(ii) Complete the table for the last quarter of 20X5 by entering any missing figures. Use a minus sign only to indicate a negative value for any seasonal variation. Round your answers to two decimal places.** (3 marks)

| 20X5 Price per 100 litres | October £ | November £ | December £ |
|---|---|---|---|
| Underlying price per 100 litres | | | |
| Seasonal Variation | | | |
| Seasonally adjusted price per 100 litres | | | |

A company is forecasting its vehicle costs for the year. Driving 250,000 miles will cost £102,500, if 200,000 miles are driven then costs will be reduced by £12,500.

Vehicle costs can be predicted using the linear regression equation y = a + bx.

Where:
x = number of miles driven, and
y = total vehicle costs for the number of miles driven

**(b)(i) Calculate the value of a and b. Round your answers to two decimal places.** (2 marks)

**Value of a:** £ ____

**Value of b:** £ ____

**(b)(ii) Using the information from (b)(i). Calculate a forecast for vehicle costs, based on 180,000 miles driven.** (1 mark)

£ ____

**End of Task**

**Task 3** (12 marks)

This task is about flexed budgets.

A manufacturing company uses flexible budgeting.

**Budget information:**

- Sales, raw materials and components are variable.
- Production wages are a stepped cost and rise by £2,500 every 1000 units.
- Budgeted energy cost for 15,000 units amounts to £16,750.
- Depreciation is a stepped cost and rises by £750 every 5,000 units.

**(a) Complete the flexed budget. Use a minus sign only to indicate an adverse variance. Round all your answers to the nearest whole pound (£).** (12 marks)

| | Original Budget | Flexed Budget | Actual | Variance |
|---|---|---|---|---|
| Manufactured units | 16000 | 21500 | 21500 | |
| | **£** | **£** | **£** | **£** |
| Sales income | 200,000 | | 220,000 | |
| | | | | |
| Raw material and components | 53,600 | | 72,090 | |
| Production wages | 90,000 | | 93,920 | |
| Energy | 17,400 | | 28,450 | |
| Depreciation | 22,250 | | 23,000 | |
| **Total costs** | **183,250** | | **217,460** | |
| | | | | |
| Operating profit | 16,750 | | 2,540 | |

**End of Task**

**Task 4** (11 marks)

This task is about standard costing.

A company makes prepacked sandwiches.

Budgeted information:

| | Budget | Actual |
|---|---|---|
| Production - sandwiches | 5000 | 4500 |
| Ingredients - £ | 2500 | 2376 |
| Ingredients - kilograms (kg) | 1000 | 990 |
| Direct labour - hours | 500 | 360 |
| Direct labour - £ | 4250 | 3060 |

**(a)(i) Calculate each variance and state if each variance is adverse, favourable, or no variance. Enter your answers to the nearest whole pound (£). Enter zero, if there is no variance. Do not use minus signs or brackets.**

(8 marks)

| | £ | Adverse/Favourable/ No variance |
|---|---|---|
| Ingredients price variance | | |
| Ingredients usage variance | | |
| Direct labour rate variance | | |
| Direct labour efficiency variance | | |

**Picklist:** Adverse, Favourable, No variance.

Using your answers from (a)(i).

**(a)(ii) Identify the most likely cause of each variance.** (3 marks)

A potential reason for the ingredient price variance could be due to

**Picklist:** a seasonal change in demand for sandwiches, an unexpected price rise for sandwich ingredients, an industry wide shortage for sandwich ingredients, a lower quality of sandwich ingredients purchased.

A potential reason for the ingredients usage variance could be due to

**Picklist:** highly skilled production workers used to make sandwiches, an inferior quality of ingredients used to make sandwiches, an unexpected pay rise given to production workers, an industry wide shortage for sandwich ingredients.

A potential reason for the direct labour efficiency variance could be due to

**Picklist:** unreliable machinery and equipment used to make sandwiches, an unexpected pay rise given to production workers, highly skilled production workers used to make sandwiches, a shortage of production workers in the industry.

**End of Task**

**Task 5** (12 marks)

This task is about management accounting techniques.

A company manufactures two products: the Elf and the Reindeer.

Budgeted production overheads:

- Materials handling (warehouse) overheads £400,000.
- Energy consumption overheads £300,000.

| | Elf | Reindeer |
|---|---|---|
| Direct materials (£ per unit) | £7.50 | £8.00 |
| Direct labour (£ per unit) | £15.00 | £35.00 |
| Direct labour (hours per unit) | 3.00 | 5.00 |
| Total number of material requisitions | 600 | 200 |
| Total kilowatts of energy consumed (Kw) | 100,000 | 50,000 |
| Total budgeted production (units) | 50,000 | 30,000 |

The company currently applies traditional absorption costing (AC) to assign production overheads to product costs, budgeted production overheads are absorbed on a direct labour hour basis. The management are considering whether activity based costing (ABC) might be a more suitable approach.

**(a)(i) Complete the statement using an activity-based costing (ABC) approach.**
(4 marks)

| | £ | Elf £ | Reindeer £ | Total overheads £ |
|---|---|---|---|---|
| Cost driver per material requisition | | | | |
| Cost driver per Kw | | | | |
| Total materials handling cost £ | | | | £400,000 |
| Total energy cost £ | | | | £300,000 |

**(a)(ii) Calculate the production overhead for each unit of product manufactured, using an activity based costing (ABC) approach. Round your answers to 2 decimal places.** (4 marks)

| | Elf £ | Reindeer £ |
|---|---|---|
| Total production overhead per unit | | |

**(a)(iii) Calculate the production overhead for each unit of product manufactured, using an absorption costing approach. Round your answers to 2 decimal places.**

(4 marks)

| | Elf<br>£ | Reindeer<br>£ |
|---|---|---|
| Total production overhead per unit | | |

**End of Task**

**Task 6** (10 marks)

This task is about comparing short-term and long-term decision making, and relevant costing.

This task contains parts (a) to (c).

**(a) Identify if the following statements are true or false.** (3 marks)

| | True | False |
|---|---|---|
| Key differences between short-term and long-term decision making include the time frame and level of capital investment. | ☐ | ☐ |
| Long-term decisions usually span several years, have less uncertainty and low levels of risk. | ☐ | ☐ |
| A six-month marketing campaign would be considered a short-term decision. | ☐ | ☐ |

**(b) Identify THREE non-relevant costs.** (3 marks)

| | |
|---|---|
| Specific fixed costs | ☐ |
| Depreciation | ☐ |
| Notional costs | ☐ |
| Future cashflows | ☐ |
| Opportunity cost | ☐ |
| Common costs | ☐ |

A printing company is preparing a quotation for a job that requires 250 rolls of paper.

Although this type of paper is not normally used by the company, it still has 100 rolls remaining in inventory from a previous job. These rolls were originally purchased last year at a cost of £15 per roll and could currently be sold for a resale value of £10 per roll on the second-hand market.

The current market price to purchase new rolls of this paper is £26 per roll.

**(c)(i) Calculate the relevant cost of using the 100 rolls remaining in inventory for the printing job. Do not use a minus sign or brackets.** (2 marks)

£ [ ]

**(c)(ii) Calculate the total relevant cost of using 250 rolls of paper for the printing job. Do not use a minus sign or brackets.** (2 marks)

£ [ ]

**End of Task**

**Task 7** (10 marks)

This task is about long-term decision making.

A property development company is considering a project to construct and sell 500 houses on a plot of land over the next three years. The cost of acquiring the land (£10 million) and the initial site preparation costs (£1.5 million), both payable immediately, have already been incorporated into the NPV analysis presented below.

Additional details relating to the project are as follows:

| **Sales Volume** | **Year 1** | **Year 2** | **Year 3** |
|---|---|---|---|
| Houses sold | 50 | 250 | 200 |

- Each house is expected to be sold at an average price of £250,000.
- The estimated direct construction cost per house, including direct materials and direct labour, is £90,000.
- The project will also incur specific fixed overhead costs of £8 million per annum.
- New projects use a required rate of return (cost of capital) of 14% and a maximum payback period of two years.

**Discount factors:**

| | **10%** | **12%** | **14%** |
|---|---|---|---|
| Year 0 | 1.000 | 1.000 | 1.000 |
| Year 1 | 0.909 | 0.893 | 0.877 |
| Year 2 | 0.826 | 0.797 | 0.769 |
| Year 3 | 0.751 | 0.712 | 0.675 |
| Year 4 | 0.683 | 0.636 | 0.592 |

**(a)(i) Calculate the annual net cash flows and discounted cash flows for the proposed project. Negative values, including cash outflows, net cash outflows, and discounted cash outflows, should be shown using either minus signs or brackets for each year.** (6 marks)

| NPV Forecast | Year 0 £000 | Year 1 £000 | Year 2 £000 | Year 3 £000 |
|---|---|---|---|---|
| Purchase of land | -10000 | | | |
| Site preparation | -1500 | | | |
| Income from sale of houses | | | | |
| Direct material and labour | | | | |
| Specific fixed overhead | | | | |
| Net cash inflows/(cash outflows) | | | | |
| Discount factor 14% | | | | |
| Discounted cash inflows/(cash outflows) | | | | |

**(a)(ii) Calculate the net present value (NPV) of the proposed project in £ millions. Your final answer should be rounded to one decimal place.** (1 mark)

£ [ ] million.

**(a)(iii) Calculate the undiscounted payback period for the proposed project. Your answer should be rounded to the nearest whole month.** (2 marks)

[ ] year(s) and [ ] month(s).

**(a)(iv) Complete the following sentence.** (1 mark)

The new housing construction project [ ▼ ] proceed.

**Picklist:** should, should not.

**End of Task**

**Task 8** (12 marks)

This task is about managing liquidity.

This task contains parts (a) to (d).

**(a) Identify if the following statements are true or false.** (3 marks)

| | True | False |
|---|---|---|
| Overcapitalisation is more likely to occur when a business expands its sales rapidly without having sufficient working capital to sustain the growth. | ☐ | ☐ |
| Non-liquid assets are assets that can be converted into cash easily or quickly. | ☐ | ☐ |
| Cash budgeting enables a business to ensure that enough cash is available to meet short-term obligations as they fall due. | ☐ | ☐ |

**(b) Identify the most suitable financing option for each of the following business circumstances.** (3 marks)

| | |
|---|---|
| A business requires short-term finance to manage day-to-day cash flow. | |
| A business needs funding to buy business premises. | |
| A business wants to obtain significant long-term finance for growth and expansion without taking on additional debt. | |

**Picklist:** mortgage, overdraft, shares.

The following financial information for the year is available for a company:

| **Trading account (summary)** | **£** |
|---|---|
| Sales revenue | 198,298 |
| Cost of sales | 57,506 |
| Gross profit | 140,792 |

| **Financial position (summary)** | **£** |
|---|---|
| Inventory | 6,500 |
| Trade receivables | 36,801 |
| Trade payables | 11,032 |

**(c) Complete the table below by calculating the working capital cycle (in days) using the information provided above. Enter all answers rounded to the nearest whole number. Do not use minus signs or brackets.** (4 marks)

| Working capital cycle | Days |
|---|---|
| Inventory holding period | |
| Receivables collection period | |
| Trade payables payment period | |
| Working capital cycle | |

**(d) Identify TWO actions a company could take to improve its trade receivables collection period.** (2 marks)

| | |
|---|---|
| Analyse receivable aging reports weekly rather than monthly. | ☐ |
| Abolishing late fee penalties for slow paying customers. | ☐ |
| Make it easier for customers to pay via electronic methods. | ☐ |
| Selling products to customers with poor credit history. | ☐ |

**End of Task**

**Task 9** (8 marks)

This task is about calculating and identifying appropriate financing and investment options.

This task contains parts (a) to (b).

A company is evaluating the purchase of a bond as an investment opportunity.

- Coupon rate 8%.
- Nominal (face value) £10,000.
- Quoted market price £9,500.

**(a)(i) Calculate the annual interest earned from the bond. Give your answer to two decimal places.** (1 mark)

£ [ ]

**(a)(ii) Calculate the annual yield on the bond. Give your answer to two decimal places.** (1 mark)

[ ] %

**(a)(iii) Complete the following sentence.** (1 mark)

If the market price of the bond were to rise, the annual interest yield would [ ].

**Picklist:** rise, fall, stay the same.

A company is considering taking out a £50,000 bank loan to finance the purchase of new office equipment and is currently comparing the terms and conditions of two different loan options. Under both loan agreements, the arrangement fees will be added to the total amount borrowed.

| | **Loan A** | **Loan B** |
|---|---|---|
| Arrangement fee | £2,000 | 3% of amount borrowed |
| Flat rate interest | 5.75% | 6.50% |
| Loan term | 4 years | 5 years |

**(b)(i) Calculate the annual interest payable for Loan A and Loan B. Give your answer to two decimal places.** (2 marks)

Loan A £ ☐

Loan B £ ☐

**(b)(ii) Calculate the monthly repayments for Loan A and Loan B. Give your answer to two decimal places.** (2 marks)

Loan A £ ☐

Loan B £ ☐

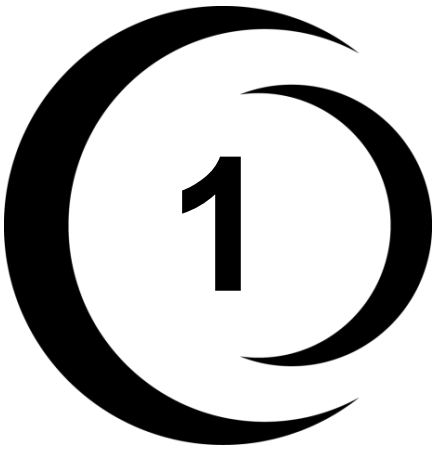
**(b)(iii) Complete the following sentence.** (1 mark)

If only monthly repayments are considered, the most affordable option is:

☐ .

**Picklist:** Loan A, Loan B.

**End of Task**

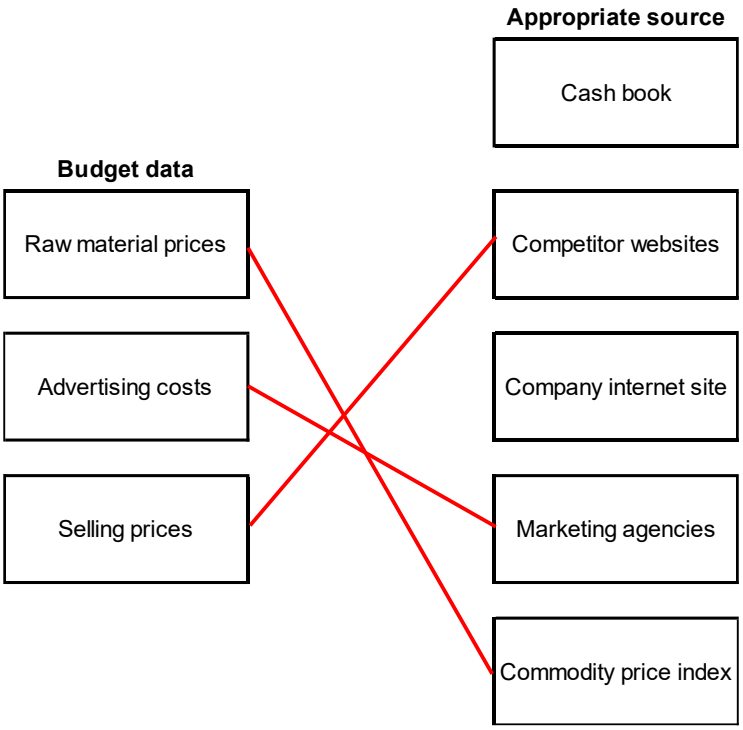


# Mock Exam One - Solutions

## AAT Level 4 Management Accounting

**Task 1 - Solutions** (16 marks)

**(a) Match each budgeted data item to its correct data source by selecting each box on the left, then one on the right.** (3 marks)




**(b) Select the most appropriate type of budget for each of the following items.** (5 marks)

| | |
|---|---|
| Purchase of property, plant and equipment for the business | **Capital Expenditure Budget** |
| Raw materials that must be purchased to fulfil production | **Material Cost Budget** |
| Estimated volume and earnings from selling products | **Sales Revenue Budget** |
| Expected cash receipts and disbursements during the period | **Cash Budget** |
| Functional budgets and the budgeted financial statements | **Master Budget** |

**(c) Complete the production budget shown below. Round all figures to the nearest whole number of units, if necessary. Do not use negative figures.**

(8 marks)

- Closing inventory should be 10% of the following week's sales volume.
- 2% of all production will fail quality control checks and will be rejected.

| Production (units) | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 |
|---|---|---|---|---|---|
| Opening inventory | 2500 | 1250 | 890 | 1010 | |
| Good production | 12750 | 12140 | 9020 | 10220 | |
| Sales volume | 14000 | 12500 | 8900 | 10100 | 11300 |
| Closing inventory | 1250 | 890 | 1010 | 1130 | |
| | | | | | |
| Rejected production | 260 | 248 | 184 | 209 | |
| Total manufactured units | 13010 | 12388 | 9204 | 10429 | |

**Workings:**

1. First, calculate closing inventory.

- Week 1 – 10% of next week's sales (week 2) sales 12500 ÷ 100% x 10% = 1250.
- Week 2 – 10% of next week's sales (week 3) sales 8900 ÷ 100% x 10% = 890.
- Week 3 – 10% of next week's sales (week 4) sales 10100 ÷ 100% x 10% = 1010.
- Week 4 – 10% of next week's sales (week 5) sales 11300 ÷ 100% x 10% = 1130.

2. Second, complete the cells for opening inventory.

Closing inventory in the previous week (calculated in step 2) will become opening inventory in the following week.

3. Third, calculate the production level (units) after rejects (good production).

The sales, opening and closing inventory figures can now be used to calculate the missing figure for 'good production'. Good production = Closing inventory + Sales - Opening inventory.

- Week 1 – Good Production 12750 = Closing inventory 1250 + Sales 14000 - Opening inventory 2500.
- Week 2 – Good Production 12140 = Closing inventory 890 + Sales 12500 - Opening inventory 1250.
- Week 3 – Good Production 9020 = Closing inventory 1010 + Sales 8900 - Opening inventory 890.
- Week 4 – Good Production 10220 = Closing inventory 1130 + Sales 10100 - Opening inventory 1010.

Good production is the number of units required to meet sales demand. Good production is only 98% of total production (after 2% of total production has failed quality control checks).

4. Fourth, work out the number of rejected units which is 2% of total production (100%).

- Week 1 – Good Production 12750 ÷ 98% of total production x 2% rejected = 260.
- Week 2 – Good Production 12140 ÷ 98% of total production x 2% rejected = 248.
- Week 3 – Good Production 9020 ÷ 98% of total production x 2% rejected = 184.
- Week 4 – Good Production 10220 ÷ 98% of total production x 2% rejected = 209.

5. Last step, work out the 'total manufactured units', which is 100% of total production.

- Week 1 – Good Production (98%) 12750 + Rejected production (2%) 260 = 13010 total manufactured units.
- Week 2 – Good Production (98%) 12140 + Rejected production (2%) 248 = 12388 total manufactured units.
- Week 3 – Good Production (98%) 9020 + Rejected production (2%) 184 = 9204 total manufactured units.
- Week 4 – Good Production (98%) 10220 + Rejected production (2%) 209 = 10429 total manufactured units.

To prove the logic, based on week 1 total production is 13010 units. 2% would be rejected (2% x 13010 = 260 units) which would leave 98% remaining (13010 - 260 = 12750 units) to satisfy sales demand.

**Task 2 - Solutions** (9 marks)

**(a)(i) Complete the table for the last quarter of 20X4 by entering any missing figures. Use a minus sign only to indicate a negative value for any seasonal variation. Round your answers to two decimal places.** (3 marks)

| 20X4 Price per 100 litres | October £ | November £ | December £ |
|---|---|---|---|
| Underlying price per 100 litres | **23.00** | 26.00 | 29.00 |
| Seasonal Variation | 3.50 | **-5.50** | 2.50 |
| Seasonally adjusted price per 100 litres | 26.50 | 20.50 | **31.50** |

**Workings:**

The underlying price would be the trend (T) which represents the long-term movement of the price upwards (or downwards). The seasonal variation (SV) adjusts the trend (T) to forecast a more accurate price which is the time series (TS). This adjustment is because the 'long-term price trend' is volatile, due to 'short-term seasonal effects' e.g. summer and winter.

The time series (forecast) uses the additive model (TS = T + SV):

**Learn these formula:**

Additive model

TS = T + SV

Multiplicative model

TS = T x SV (decimal, percentage or indice)

**Additive model**

**TS = T + SV**

**October**

26.50 = T + 3.50

26.50 - 3.50 = **23.00**

**November**

20.50 = 26.00 + SV

20.50 - 26.00 = **-5.50**

**December**

TS = 29.00 + 2.50

TS = **31.50**

**(a)(ii) Complete the table for the last quarter of 20X5 by entering any missing figures. Use a minus sign only to indicate a negative value for any seasonal variation. Round your answers to two decimal places.** (3 marks)

| 20X5 Price per 100 litres | October £ | November £ | December £ |
|---|---|---|---|
| Underlying price per 100 litres | **59.00** | **62.00** | **65.00** |
| Seasonal Variation | **3.50** | **-5.50** | **2.50** |
| Seasonally adjusted price per 100 litres | **62.50** | **56.50** | **67.50** |

**Workings**

Start by identifying the price trend for October 20X5.

- In the 20X4 time series data, the price trend moved from £23 to £29 over two months (October 20X4 to December 20X4). £29 - £23 = £6.00 increase in prices over two monthly movements.
- The long-term increase (trend) of this monthly movement is £6.00 ÷ 2 movements = £3.00 each month.
- In the 20X4 time series data, the last price trend calculated was in December 20X4 (£29.00). So, for October 20X5, we are predicting 10 months ahead.
- Last price trend £29.00 (Dec 20X4) + £3.00 increase every month x 10 months (Jan 20X5 to Oct 20X5) = £59.00 price trend for October 20X5.
- November 20X5 will be £59.00 (Oct 20X5) + £3.00 = £62.00.
- December 20X5 will be £62.00 (Nov 20X5) + £3.00 = £65.00.

The values for seasonal variations are included in the 20X4 time series data, which matches the same quarter for 20X5 (October to December). Therefore the same values can be used in the 20X5 time series.

The time series (forecast) uses the additive model (TS = T + SV):

**October 20X5**
TS = 59.00 + 3.50.
TS = 62.50.

**November 20X5**
TS = 62.00 - 5.50.
TS = 56.50.

**December 20X5**
TS = 65.00 + 2.50.
TS = 67.50.

**(b)(i) Calculate the value of a and b. Round your answers to two decimal places.** (2 marks)

Value of a: **£40000.00**.

Value of b: **£0.25**.

The regression equation uses historical data to determine a trend line, or line of best fit, when depicted graphically. Although the regression equation generally provides greater accuracy than the high-low method, if only two pairs of cost and mileage data are provided, then both methods will yield identical results for any variable or fixed cost.

A forecast trend can be represented by the equation Y = a + bX. The high low method is used to work out 'a' the fixed cost (constant regardless of miles driven) and 'b' the variable cost (which will rise or fall, as miles driven rise or fall).

- Y = Total Cost.
- X = Miles driven.
- a = Fixed Cost.
- b = Variable cost per mile driven.

Driving 250,000 miles will cost £102,500, if 200,000 miles are driven then costs will be reduced by £12,500.

**High low method to solve a and b:**

| **Miles (X)** | **Total Cost (Y)** | |
|---|---|---|
| 250,000 | 102,500 | |
| 200,000 | 90,000 | (costs decrease by £12,500 at 200,000 miles) |
| 50,000 | 12,500 | |

The above working identifies that total cost or variable cost 'b' has increased by £12,500 when miles driven increased by 50,000. The variable cost per mile is £12,500 ÷ 50,000 miles = £0.25 per mile. This relationship can be predicted since a rise in miles driven will cause only variable cost (not fixed cost) to change.

The fixed cost 'a' (the constant) is calculated as a balancing figure, take either of the two pairs of data above (200,000 miles or 250,000 miles) and work it out.

250,000 miles has been chosen (Y = £102,500, X = 250,000 miles, b = £0.25 per mile).

- £102,500 = a + (£0.25 x 250,000 miles).
- £102,500 = a + £62,500.
- a = £102,500 - £62,500.
- a = £40,000.

A regression equation can now be used to forecast any cost (Y = 40000 + 0.25X).

**(b)(ii) Using the information from (b)(i). Calculate a forecast for vehicle costs, based on 180,000 miles driven.** (1 mark)

**£85000**

The regression equation to forecast cost is Y = 40000 + 0.25X.

For 180000 miles driven:

- Y = 40000 + (0.25 x 180000).
- Y = 40000 + 45000.
- Y = 85000.

**Task 3 - Solutions** (12 marks)

**(a) Complete the flexed budget. Use a minus sign only to indicate an adverse variance. Round all your answers to the nearest whole pound (£).** (12 marks)

| | Original Budget | Flexed Budget | Actual | Variance |
|---|---|---|---|---|
| Units manufactured | 16000 | 21500 | 21500 | |
| | £ | £ | £ | £ |
| Sales income | 200,000 | 268,750 | 220,000 | -48,750 |
| | | | | |
| Raw material and components | 53,600 | 72,025 | 72,090 | -65 |
| Production wages | 90,000 | 102,500 | 93,920 | 8,580 |
| Energy | 17,400 | 20,975 | 28,450 | -7,475 |
| Depreciation | 22,250 | 23,000 | 23,000 | 0 |
| **Total costs** | **183,250** | 218,500 | **217,460** | 1,040 |
| | | | | |
| Operating profit | 16,750 | 50,250 | 2,540 | -47,710 |

A flexed budget adjusts the original budgeted plan for the actual production level achieved, this provides a more precise evaluation for variance analysis.

**Workings:**

**Sales (variable)**

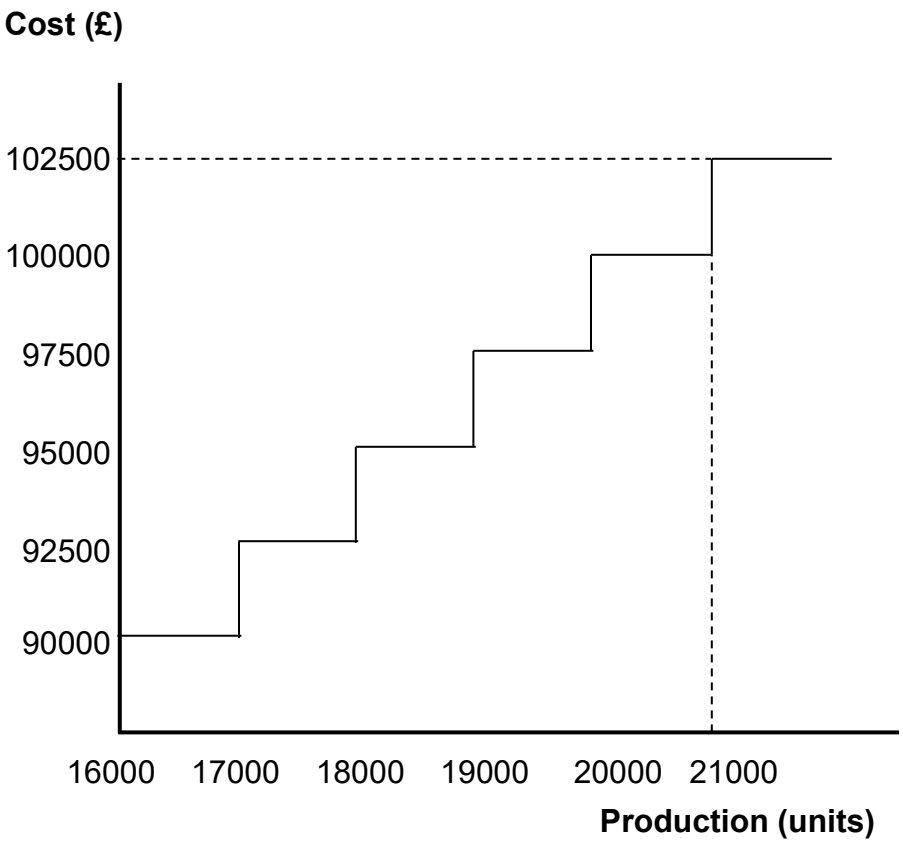
Based on the original budget the forecast sales price is £200,000 ÷ 16000 units = £12.50 per unit. The flexed budget is for 21500 units, so the forecast sales income would be £12.50 x 21500 units = £268,750.

**Raw material and components (variable)**

Based on the original budget the forecast variable cost is £53,600 ÷ 16000 units = £3.35 per unit. The flexed budget is for 21500 units, so the forecast variable cost would be £3.35 x 21500 units = £72,025.

**Production wages (stepped cost)**

Production wages rise by £2,500 every 1000 units. Based on the original budget the forecast cost is £90,000 at 16000 units. The flexed budget is for 21500 units, so there would be a further increase in cost of £2,500 at 17000, 18000, 19000, 20000 and 21000 units, so the forecast cost would be £90,000 + (£2,500 x 5 movements) = £102,500. The graph below illustrates the stepped cost behaviour.




**Energy (semi variable cost)**

- The energy budget for 15000 units is £16,750.
- The energy budget for 16000 units is £17,400.

**High low method to solve fixed and variable cost:**

| Units (X) | Total Cost (Y) |
|---|---|
| 16000 | 17,400 |
| 15000 | 16,750 |
| 1000 | 650 |

The above working identifies that total cost or variable cost has increased by £650 when production increased by 1000 units. The variable cost per unit is £650 ÷ 1000 units = £0.65 per unit. This relationship can be predicted since a rise in units manufactured will cause only variable cost (not fixed cost) to change.

The fixed cost (the constant) is calculated as a balancing figure, take either of the two pairs of data above (16000 units or 15000 units) and work it out.

16000 units has been chosen:

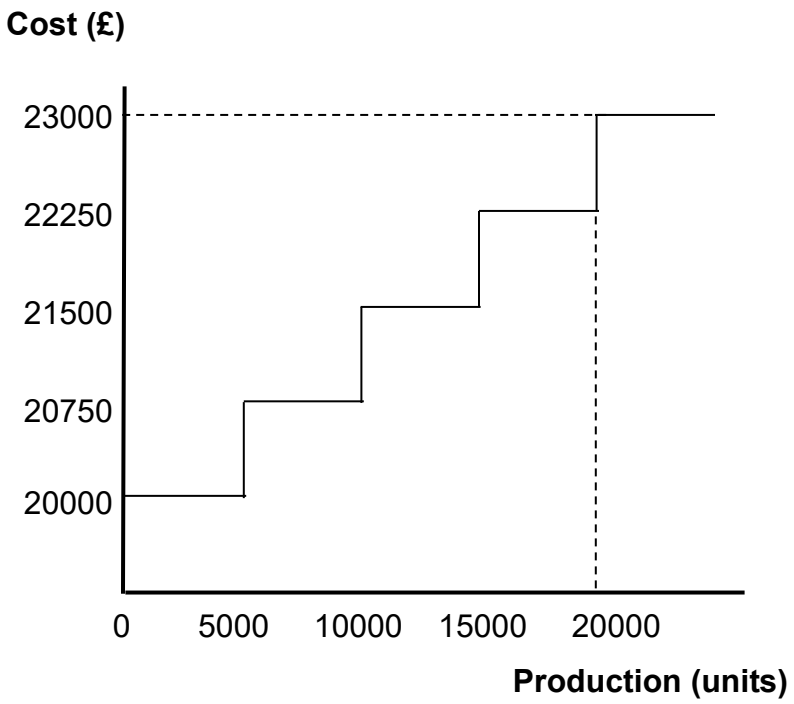
- £17,400 = Fixed Cost + (£0.65 x 16000 units).
- £17,400 = Fixed Cost + £10,400.

- Fixed Cost = £17,400 - £10,400.
- Fixed Cost = £7,000.

The variable cost is £0.65 per unit and the fixed cost is £7,000. The flexed budget is for 21500 units, so the forecast cost would be £7,000 + (£0.65 x 21500 units) = £20,975.

**Depreciation (stepped cost)**

Depreciation rises by £750 every 5000 units. Based on the original budget the forecast cost is £22,250 at 16000 units. The flexed budget is for 21500 units, so there would be a further increase in cost of £750 at 20000 units, so the forecast cost would be £22,250 + (£750 x 1 movement) = £23,000. The graph below illustrates the stepped cost behaviour.



**Task 4 - Solutions** (11 marks)

**(a)(i) Calculate each variance and state if each variance is adverse, favourable, or no variance. Enter your answers to the nearest whole pound (£). Enter zero, if there is no variance. Do not use minus signs or brackets.**

(8 marks)

| | £ | Adverse/Favourable/ No variance |
|---|---|---|
| Ingredients price variance | **99** | **Favourable** |
| Ingredients usage variance | **225** | **Adverse** |
| Direct labour rate variance | **0** | **No variance** |
| Direct labour efficiency variance | **765** | **Favourable** |

**Workings:**

Establishing the standard cost for each sandwich is useful before you calculate any variances.

**Standard costs:**

| | | |
|---|---|---|
| Material price (£2,500 ÷ 1000 kgs) | £2.50 | per kg |
| Material usage (1000 kgs ÷ 5000 sandwiches) | 0.2 | kgs per unit |
| 0.2 kgs @ £2.50 per kg (standard cost) | £0.50 | per unit |
| | | |
| Labour rate (£4,250 ÷ 500 hours) | £8.50 | per hour |
| Labour efficiency (500 hours ÷ 5000 sandwiches) | 0.1 | hours per unit |
| 0.1 hours @ £8.50 per hour (standard cost | £0.85 | per unit |

**Material (ingredient) price variance**

| | | |
|---|---|---|
| 990 kgs did cost | £2,376 | |
| 990 kgs should cost (x £2.50 per kg) | £2,475 | |
| | £99 | **Favourable** |

**Material (ingredient) usage variance**

| | | |
|---|---|---|
| 4500 sandwiches did use | 990 | kgs |
| 4500 sandwiches should use (x 0.2 kgs per sandwich) | 900 | kgs |
| | 90 | kgs |
| x Standard cost per kg | £2.50 | per kg |
| | £225 | **Adverse** |

**Proof:**

| | | |
|---|---|---|
| Flexed material cost (£0.50 x 4500 sandwiches) | £2,250 | |
| Material (ingredient) price variance | £99 | Favourable |
| Material (ingredient) usage variance | £225 | Adverse |
| Actual material cost | £2,376 | |

**Labour rate variance**

| | | |
|---|---|---|
| 360 hours did cost | £3,060 | |
| 360 hours should cost (x £8.50 per hour) | £3,060 | |
| | £0 | **No variance** |

**Labour efficiency variance**

| | | |
|---|---|---|
| 4500 sandwiches did take | 360 | hours |
| 4500 sandwiches should take (x 0.1 hours per sandwich) | 450 | hours |
| | 90 | hours |
| x Standard cost per hour | £8.50 | per hour |
| | £765 | **Favourable** |

**Proof:**

| | | |
|---|---|---|
| Flexed labour cost (£0.85 x 4500 sandwiches) | £3,825 | |
| Labour rate variance | £0 | No variance |
| Labour efficiency variance | £765 | Favourable |
| Actual labour cost | £3,060 | |

**(a)(ii) Identify the most likely cause of each variance.** (3 marks)

A potential reason for the ingredient price variance could be due to **a lower quality of sandwich ingredients purchased**.

The materials price variance is favourable which would suggest a lower quality of ingredients purchased, more inferior ingredients are often cheaper. Any seasonal changes in demand for sandwiches, is more likely to effect the sales volume variance. An unexpected price rise for sandwich ingredients, is more likely to cause the price of ingredients to rise, causing an adverse (not favourable) materials price variance. An industry wide shortage for sandwich ingredients, is more likely to cause the price of ingredients to rise, causing an adverse (not favourable) materials price variance.

A potential reason for the ingredients usage variance could be due to **an inferior quality of ingredients used to make sandwiches**.

The materials usage variance is adverse. A more inferior quality of ingredients used can create more wastage, which may account for the adverse materials usage variance. Highly skilled production workers used to make sandwiches, is more likely to reduce wastage levels for ingredients used and cause a favourable (not adverse) materials usage variance. An unexpected pay rise given to production workers, is more likely to effect the direct labour rate variance (not materials usage variance). An industry wide shortage for sandwich ingredients is not likely to explain an adverse materials usage variance, however it may cause the price of ingredients to rise, causing an adverse materials price variance.

A potential reason for the direct labour efficiency variance could be due to **highly skilled production workers used to make sandwiches**.

The direct labour efficiency variance is favourable. Highly skilled production workers used to make sandwiches, is more likely to reduce the time needed to make sandwiches and cause a favourable labour efficiency variance. Unreliable machinery and equipment to make sandwiches, is more likely to cause an adverse labour efficiency variance or an adverse materials usage variance, as workers can take longer and more ingredients can be wasted if machinery is unreliable. An unexpected pay rise given to production workers, is more likely to cause an adverse labour rate variance (not labour efficiency variance). A shortage of production workers in the industry, is likely to cause wage rates to increase and cause an adverse labour rate variance (not labour efficiency variance).

**Task 5 - Solutions** (12 marks)

**(a)(i) Complete the statement using an activity-based costing (ABC) approach.**
(4 marks)

| | £ | Elf £ | Reindeer £ | Total overheads £ |
|---|---|---|---|---|
| Cost driver per material requisition | 500 | | | |
| Cost driver per Kw | 2 | | | |
| Total materials handling cost £ | | 300000 | 100000 | £400,000 |
| Total energy cost £ | | 200000 | 100000 | £300,000 |

**Workings:**

**Cost driver per material requisition**

Two products: the Elf (600 material requisitions) and the Reindeer (200 material requisitions) = 800 total budgeted material requisitions. Budgeted materials handling (warehouse) overheads £400,000 ÷ 800 total budgeted material requisitions = £500 per material requisition.

**Total materials handling cost (£)**

Two products: the Elf (£500 per material requisition x 600 material requisitions) = £300,000 and the Reindeer (£500 per material requisition x 200 material requisitions) = £100,000.

**Cost driver per Kw**

Two products: the Elf (100000 Kw) and the Reindeer (50000 Kw) = 150000 total budgeted kilowatts (Kw). Budgeted energy consumption overheads £300,000 ÷ 150000 total budgeted kilowatts (Kw) = £2.00 per Kw.

**Total energy cost**

Two products: the Elf (£2.00 per Kw x 100000 Kw consumed) = £200,000 and the Reindeer (£2.00 per Kw x 50000 Kw consumed) = £100,000.

**(a)(ii) Calculate the production overhead for each unit of product manufactured, using an activity based costing (ABC) approach. Round your answers to 2 decimal places.**
(4 marks)

| | Elf £ | Reindeer £ |
|---|---|---|
| Total production overhead per unit | 10.00 | 6.67 |

**Budgeted overhead costs for each product:**

- **Elf:** Total budgeted production overhead allocated (materials handling and energy cost) £500,000 ÷ budgeted production 50000 units = £10.00 per unit.
- **Reindeer:** Total budgeted production overhead allocated (materials handling and energy cost) £200,000 ÷ budgeted production 30000 units = £6.67 per unit (rounded to 2 decimal places).

**(a)(iii) Calculate the production overhead for each unit of product manufactured, using an absorption costing approach. Round your answers to 2 decimal places.**

(4 marks)

| | Elf<br>£ | Reindeer<br>£ |
|---|---|---|
| Total production overhead per unit | **7.00** | **11.67** |

**Workings:**

- One unit of an Elf requires 3 hours of direct labour time x 50000 budgeted units = 150000 budgeted hours of direct labour time.
- One unit of a Reindeer requires 5 hours of direct labour time x 30000 budgeted units = 150000 budgeted hours of direct labour time.
- Total budgeted direct labour hours are 300000 for both products (150000 hours for each product).
- Total budgeted overheads are £700,000, which must be shared equally between both products, since they consume equal amounts of budgeted labour time. £700,000 ÷ 2 = £350,000 budgeted overheads allocated to each product.

**Budgeted overhead costs for each product:**

- **Elf:** Total budgeted production overhead allocated (materials handling and energy cost) £350,000 ÷ budgeted production 50000 units = £7.00 per unit.
- **Reindeer:** Total budgeted production overhead allocated (materials handling and energy cost) £350,000 ÷ budgeted production 30000 units = £11.67 per unit (rounded to 2 decimal places).

**Task 6 - Solutions** (10 marks)

**(a) Identify if the following statements are true or false.** (3 marks)

| | True | False |
|---|---|---|
| Key differences between short-term and long-term decision making include the time frame and level of capital investment. | ☑ | ☐ |
| Long-term decisions usually span several years, have less uncertainty and low levels of risk. | ☐ | ☑ |
| A six-month marketing campaign would be considered a short-term decision. | ☑ | ☐ |

- Key differences between short-term and long-term decision making include the time frame and level of capital investment. **This statement is true.** Another key difference is the degree of risk involved.
- Long-term decisions usually span several years, have less uncertainty and low levels of risk. **This statement is false.** Long-term decisions do usually span several years, but are often linked to greater uncertainty (not less uncertainty) and higher levels of risk (not low levels of risk).
- A six-month marketing campaign would be considered a short-term decision. **This statement is true.** Short-term decisions involve immediate actions, usually within a period of 12 months or less, and are generally associated with a high degree of certainty and relatively low risk.

**(b) Identify THREE non-relevant costs.** (3 marks)

| | |
|---|---|
| Specific fixed costs | ☐ |
| Depreciation | ☑ |
| Notional costs | ☑ |
| Future cashflows | ☐ |
| Opportunity cost | ☐ |
| Common costs | ☑ |

A relevant cost is a future cash outflow that occurs as a direct result of a decision. Future cash flows and opportunity costs are examples of relevant costs. Specific fixed costs, unlike general fixed costs, are usually considered relevant because they can often be avoided if a particular activity is discontinued, such as stopping the production of a product.

Costs that are not considered relevant include sunk costs, historical costs, committed costs, notional costs, and common costs. For example, depreciation is a notional cost because it is an accounting allocation rather than an actual cash payment. Common costs refer to shared overhead expenses, which are incurred across multiple products produced through the same production process.

**(c)(i) Calculate the relevant cost of using the 100 rolls remaining in inventory for the printing job. Do not use a minus sign or brackets.** (2 marks)

£**1000**.

**(c)(ii) Calculate the total relevant cost of using 250 rolls of paper for the printing job. Do not use a minus sign or brackets.** (2 marks)

£**4900**.

The relevant cost of the 250 rolls of paper for the printing job is calculated using the opportunity cost and replacement cost principles.

The 100 rolls already held in inventory will not be replaced and has no further use. The 100 rolls could be sold for £10 each, so using them in the job means sacrificing resale proceeds (an opportunity cost) of:

- 100 rolls x £10 each = £1,000.

The remaining 150 rolls must be purchased at the current market price (replacement cost) of £26 each:

- 150 rolls x £26 each = £3,900.

Therefore, the total relevant cost of the paper for the job is:

- £1,000 + £3,900 = £4,900.

**Task 7 - Solutions** (10 marks)

**(a)(i) Calculate the annual net cash flows and discounted cash flows for the proposed project. Negative values, including cash outflows, net cash outflows, and discounted cash outflows, should be shown using either minus signs or brackets for each year.** (6 marks)

| NPV Forecast | Year 0 £000 | Year 1 £000 | Year 2 £000 | Year 3 £000 | Total £ |
|---|---|---|---|---|---|
| Purchase of land | -10000 | | | | |
| Site preparation | -1500 | | | | |
| Income from sale of houses | | 12500 | 62500 | 50000 | |
| Direct material and labour | | -4500 | -22500 | -18000 | |
| Specific fixed overhead | | -8000 | -8000 | -8000 | |
| Net cash inflows/(cash outflows) | -11500 | 0 | 32000 | 24000 | 44500 |
| Discount factor 14% | 1.000 | 0.877 | 0.769 | 0.675 | |
| Discounted cash inflows/(cash outflows) | -11500 | 0 | 24608 | 16200 | 29308 |

**Workings:**

**Income from sale of houses**

- Year 1: 50 houses x £250,000 (average price) = £12,500,000.
- Year 2: 250 houses x £250,000 (average price) = £62,500,000.
- Year 3: 200 houses x £250,000 (average price) = £50,000,000.

**Direct material and labour**

- Year 1: 50 houses x £90,000 (average price) = £4,500,000.
- Year 2: 250 houses x £90,000 (average price) = £22,500,000.
- Year 3: 200 houses x £90,000 (average price) = £18,000,000.

**(a)(ii) Calculate the net present value (NPV) of the proposed project in £ millions. Your final answer should be rounded to one decimal place.** (1 mark)

£**29.3** million.

The total net present value (sum of the present value of cash flows) is £29,308,000. When rounded to the nearest £1 million and expressed to one decimal place, this is equivalent to £29.3 million.

**(a)(iii) Calculate the undiscounted payback period for the proposed project. Your answer should be rounded to the nearest whole month.** (2 marks)

**1** year(s) and **4** month(s).

**Workings:**

| | Annual cash-flows (undiscounted) | Cumulative cash-flows (undiscounted) |
|---|---|---|
| Year 0 | -11500 | -11500 |
| Year 1 | 0 | -11500 |
| Year 2 | 32000 | 20500 |
| Year 3 | 24000 | 44500 |

The payback period occurs between years 1 and 2, as cumulative cash flows move from a negative to a positive position during this period. At the end of year 1, the project has an overdraft balance of -11,500. By the end of year 2, this has shifted to a surplus of +20,500.

Annual cash flows in year 2 are 32,000. In order to achieve payback, the project must recover the remaining cash deficit of -11,500 during this year. Therefore, the time required is calculated as 11,500 ÷ 32,000 x 12 months = 4 months (to recover the shortfall within the 12-month period). The total payback period is therefore 1 year and 4 months.

**(a)(iv) Complete the following sentence.** (1 mark)

The new housing construction project **should** proceed.

The company evaluates investment projects using a 14% cost of capital and a maximum payback period of two years. The proposed project has achieved both appraisal criteria, generating a positive NPV at the 14% discount rate and a payback period of 1 year and 4 months.

**Task 8 - Solutions** (12 marks)

**(a) Identify if the following statements are true or false.** (3 marks)

| | True | False |
|---|---|---|
| Overcapitalisation is more likely to occur when a business expands its sales rapidly without having sufficient working capital to sustain the growth. | ☐ | ☑ |
| Non-liquid assets are assets that can be converted into cash easily or quickly. | ☐ | ☑ |
| Cash budgeting enables a business to ensure that enough cash is available to meet short-term obligations as they fall due. | ☑ | ☐ |

Overcapitalisation is more likely to occur when a business expands its sales rapidly without having sufficient working capital to sustain the growth. **This statement is false.** This is a description of overtrading not overcapitalisation. Overtrading (also called "undercapitalisation") happens when a business grows sales too quickly without enough working capital to support that growth. Common signs of overtrading include: rapid increase in sales revenue without enough cash flow, persistent cash shortages despite strong sales, heavy reliance on overdrafts, short-term loans, or supplier credit, delaying supplier payments, difficulty paying wages, taxes, rent, or suppliers on time. Its main cause is business expansion not supported by adequate long-term financing.

Non-liquid assets are assets that can be converted into cash easily or quickly. **This statement is false.** This is a description of liquid assets not non-liquid assets. The difference between liquid and non-liquid assets is based on how quickly the asset can be converted into cash without losing significant value:

| Liquid Assets | Non-Liquid Assets |
|---|---|
| Easily converted to cash | Difficult to convert to cash |
| Short-term use | Long-term use |
| High liquidity | Low liquidity |
| Examples: cash, receivables, short-term investments etc. | Examples: land, buildings, machinery, vehicles etc. |

Cash budgeting enables a business to ensure that enough cash is available to meet short-term obligations as they fall due. **This statement is true.** Cash budgeting is important in the management of liquidity because it helps a business forecast and control its cash inflows and outflows over a specific period. This helps identify potential cash shortages in advance, maintain sufficient liquidity to pay suppliers, employees, and other expenses on time, and avoid unnecessary borrowing and overdraft costs

**(b) Identify the most suitable financing option for each of the following business circumstances.** (3 marks)

| | |
|---|---|
| A business requires short-term finance to manage day-to-day cash flow. | **overdraft** |
| A business needs funding to buy business premises. | **mortgage** |
| A business wants to obtain significant long-term finance for growth and expansion without taking on additional debt. | **shares** |

The most appropriate financing option depends on what the company needs the money for and the circumstances of the business:

- A business requires short-term finance to manage day-to-day cash flow. Overdrafts are typically used for short-term or temporary cash flow needs, such as covering day-to-day expenses or unexpected costs. They provide flexible borrowing, but usually carry relatively high interest rates.
- A business needs funding to buy business premises. Mortgages are typically used to finance long-term assets such as land or property. Repayments are spread over an extended period, making large purchases more affordable and manageable.
- A business wants to obtain significant long-term finance for growth and expansion without taking on additional debt. Shares are typically used to raise substantial long-term finance for business growth and expansion without increasing debt. Investors provide capital in exchange for ownership (equity) in the company. Unlike directors' loans, bank loans, overdrafts, and mortgages, issuing shares can reduce gearing, which is the relationship between a company's debt and its equity.

**(c) Complete the table below by calculating the working capital cycle (in days) using the information provided above. Enter all answers rounded to the nearest whole number. Do not use minus signs or brackets.** (4 marks)

| Working capital cycle | Days |
|---|---|
| Inventory holding period | **41** |
| Receivables collection period | **68** |
| Trade payables payment period | **70** |
| Working capital cycle | **39** |

**Workings:**

**Inventory holding period**

- Inventory holding period = (Inventories / Cost of sales) x 365 days.
- (6,500 ÷ 57,506) x 365 = 41 days.
- Inventory is held for an average of 41 days before being sold to customers.

**Receivables collection period**

- Receivables collection period = (Trade receivables / Revenue) x 365 days.
- (36,801 ÷ 198,298) x 365 = 68 days.
- Customers take an average of 68 days to pay their invoices.

**Trade payables payment period**

- Trade payables payment period = (Trade payables / Cost of sales) x 365 days.
- (11,032 ÷ 57,506) x 365 = 70 days.
- The business takes an average of 70 days to pay its suppliers.

**Working capital cycle**

- Working capital cycle = 41 + 68 - 70 = 39 days.
- On average, it takes the business 39 days from paying suppliers for raw materials to receiving cash from customers for finished goods sold.

**(d) Identify TWO actions a company could take to improve its trade receivables collection period.** (2 marks)

| | |
|---|---|
| Analyse receivable aging reports weekly rather than monthly. | ☑ |
| Abolishing late fee penalties for slow paying customers. | ☐ |
| Make it easier for customers to pay via electronic methods. | ☑ |
| Selling products to customers with poor credit history. | ☐ |

**Analyse receivable aging reports weekly rather than monthly**
This can help improve the speed of customer payments, as weekly monitoring allows the company to identify overdue accounts earlier and take quicker collection action.

**Abolishing late fee penalties for slow paying customers**
Failing to charge penalties for late payments may encourage customers to delay settling invoices, as there is less incentive to pay on time.

**Make it easier for customers to pay via electronic methods**
Offering electronic payment methods can reduce collection times by avoiding delays associated with paper cheques and postal systems.

**Selling products to customers with poor credit history**
Extending credit to customers with weak credit records, or failing to carry out proper credit checks, increases the risk of late payments and bad debts.

**Task 9 - Solutions** (8 marks)

**(a)(i) Calculate the annual interest earned from the bond. Give your answer to two decimal places.** (1 mark)

£**800.00**.

The coupon (interest) payment on a bond is based on the nominal value (also called par or face value), not the quoted market price. An 8% bond with a nominal value of £10,000, would pay annual interest of 8% x £10,000 nominal value = £800. The nominal value is relevant for the coupon calculation and the amount repaid at maturity.

**(a)(ii) Calculate the annual yield on the bond. Give your answer to two decimal places.** (1 mark)

**8.42**%.

The yield on debt generally refers to the return earned by the lender or investor. It is calculated based on the bond's current market price (the quoted price paid today), rather than its original nominal or face value at issuance. Therefore, the investor's actual return depends on the price at which the bond is purchased in the market today.

- Yield (%) = Annual Interest Income ÷ Amount Invested x 100.
- Yield (%) = £800 ÷ £9,500 x 100.
- Yield = 8.42% (rounded to two decimal places).

**(a)(iii) Complete the following sentence.** (1 mark)

If the market price of the bond were to rise, the annual interest yield would **fall**.

This is because the coupon payment remains fixed, while the price paid to purchase the bond rises, causing the overall return, or yield, to decrease (fall).

**(b)(i) Calculate the annual interest payable for Loan A and Loan B. Give your answer to two decimal places.** (2 marks)

Loan A £**2990.00**.

Loan B £**3347.50**.

A flat rate of interest is usually quoted as an annual interest rate unless stated otherwise:

- Loan A: £50,000 borrowed + £2,000 arrangement fee added to the total amount borrowed = £52,000 x 5.75% = £2,990.00.
- Loan B £50,000 borrowed + 3% arrangement fee added to the total amount borrowed (3% x £50,000 = £1,500) = £51,500 x 6.5% = £3,347.50.

**(b)(ii) Calculate the monthly repayments for Loan A and Loan B. Give your answer to two decimal places.** (2 marks)

Loan A £**1322.50**.

Loan B £**1137.29**.

**Workings**

| | **Loan A** | **Loan B** |
|---|---|---|
| Amount borrowed (1) | £50,000 | £50,000 |
| Arrangement fee added to the amount borrowed (2) | £2,000 | 3% of amount borrowed x £50,000 = £1,500 |
| Flat rate interest over the loan term (3) | £2,990.00 x 4 years = £11,960.00 | £3,347.50 x 5 years = £16,737.50 |
| Total cost of financing (2) + (3) | £13,960.00 | £18,237.50 |
| Total amount repayable over the loan term (1) + (2) + (3) | £63,960.00 | £68,237.50 |
| Loan term | 4 years x 12 months = 48 months | 5 years x 12 months = 60 months |
| **Monthly repayment (total repayable ÷ number of months)** | **£1,332.50** | **£1,137.29** |

**(b)(iii) Complete the following sentence.** (1 mark)

If only monthly repayments are considered, the most affordable option is: **Loan B**.

This is because loan B has the lowest monthly repayment.