

Standard costing

1) A company uses standard costing. This year the standard labour cost of a product is \$180.60 per unit. The standard labour rate is \$86.00 per hour. Last month 2,200 hours were worked and there was an adverse labour efficiency variance of \$8,600. This variance was caused entirely by new working practices introduced by the company. The full effect of the new working practices is to be incorporated into the new standard cost of the product for next year. In addition, a labour rate increase of 10% is to be built into the new standard cost.

What is the standard cost per unit of the product for next year?

- \$189.20
- \$198.66
- \$207.26
- \$208.12

Correct Answer

\$208.12

This year:

Standard labour hours = 2,100 (2,200 - (8,600 / 86))

Standard labour hours per unit = 2.1 (180.60 / 86)

Standard number of units produced = 1,000 (2,100 / 2.1)

Next year:

Standard labour hours = 2,200

Standard number of units produced = 1,000

Standard labour hours per unit = 2.2 (2,200 / 1,000)

Standard cost per unit = \$208.12 ((86 + 10%) x 2.2)

2) Last month a company which uses standard costing purchased a larger quantity of materials than was budgeted. The supplier gave the company a discount on the company's standard purchase price for materials. The company used highly skilled labour paid at a rate above the standard wage rate to process all the materials purchased last month. The workforce took less time than the standard time allowed but used more material than standard in the production.

Were the direct materials variances for last month adverse or favourable?

| | Adverse | Favourable |
|----------------|----------------------------------|----------------------------------|
| Usage variance | <input type="radio"/> | <input checked="" type="radio"/> |
| Price variance | <input checked="" type="radio"/> | <input type="radio"/> |

Correct Answer

| | |
|----------------|------------|
| Price variance | Favourable |
| Usage variance | Adverse |

The direct material price variance is the difference between what the materials should have cost and what they actually cost. Due to the discount provided by the supplier the materials cost less than what they were expected to and therefore this variance is favourable.

The direct materials usage variance is the difference between how much material should have been used and how much was actually used. As more material was used than what was expected this variance is adverse.

3) A company uses standard marginal costing. Last month when all sales were at the standard price, the standard contribution from actual sales was \$50,000 and the following variances arose:

| | \$ | |
|------------------------------------|-------|-----|
| Total variable costs variance | 3,500 | Adv |
| Total fixed costs variance | 1,000 | Fav |
| Sales volume contribution variance | 2,000 | Fav |

What was the actual contribution for last month?

\$

Correct Answer

\$46,500

Actual contribution = Actual sales revenue - Actual variable cost

The \$50,000 already reflects actual sales revenue so there is no need to adjust for the sales volume contribution variance. The total fixed cost variance is not relevant to a calculation of contribution.

We do need to adjust the standard contribution to reflect the variable cost variance. Therefore:

Actual contribution = \$46,500 (50,000 - 3,500)

4) A company uses a standard absorption costing system. Last month the actual profit was \$500,000. The only variances recorded for the month were as follows.

| | \$000 |
|---|---------------|
| Sales volume profit variance | 10 adverse |
| Fixed production overhead capacity variance | 30 favourable |
| Fixed production overhead efficiency variance | 40 adverse |
| Fixed production overhead volume variance | 10 adverse |
| Fixed production overhead expenditure | 50 favourable |
| Direct labour efficiency variance | 15 adverse |

What was the budget profit for last month?

- \$515,000
- \$505,000
- \$495,000
- \$485,000

Correct Answer

\$485,000

| | \$000 |
|---|--------------|
| Actual profit | 500 |
| Sales volume profit variance | 10 |
| Fixed production overhead volume variance | 10 |
| Fixed production overhead expenditure | (50) |
| Direct labour efficiency variance | 15 |
| Budgeted profit | 485 |

The efficiency and capacity variances for fixed overheads are not included in the reconciliation as they are the sub-variances of the fixed overhead volume variance which has been accounted for.

5) Product A is one of the products that are manufactured by a company. The following direct cost standards were set, for each batch of 50 units of Product A, for the period just ended:

Materials: 10 kg of Material X at \$17.50 per kg

5 litres of Material Y at \$9.20 per litre

Labour: 20 hours at \$12.50 per hour

Variable production overheads were absorbed at a standard rate of \$3.70 per direct labour hour.

Fixed production overheads were absorbed at a standard rate per machine hour using the following budgeted data for the factory:

| | |
|-------------------------------------|----------|
| Budgeted fixed production overheads | \$51,000 |
|-------------------------------------|----------|

| | |
|------------------------|-------|
| Budgeted machine hours | 1,700 |
|------------------------|-------|

Each batch of Product A requires 8 machine hours.

40 batches of Product A were manufactured in the period just ended and the following direct resources were used:

| | |
|------------|--------|
| Material X | 416 kg |
|------------|--------|

| | |
|------------|------------|
| Material Y | 195 litres |
|------------|------------|

| | |
|--------|-----------|
| Labour | 838 hours |
|--------|-----------|

Task 1

0 of 6 marks

What was the standard total variable production cost per unit of Product A (to two decimal places)?

\$

What was the standard fixed production overhead cost per unit of Product A (to two decimal places)?

\$

What was the labour efficiency variance?

\$

Correct Answer

| | | Notes |
|---|----------------|-------|
| What was the standard total variable production cost per unit of Product A (to two decimal places)? | \$ 10.90 | (1) |
| What was the standard fixed production overhead cost per unit of Product A (to two decimal places)? | \$ 4.80 | (2) |
| What was the labour efficiency variance? | \$ 475 Adverse | (3) |

Notes:

(1) Standard variable production costs per unit of Product A:

| | \$ per batch |
|--------------------------------|--------------|
| Materials: | |
| X: 10 kg × \$17.50 per kg | 175 |
| Y: 5 litres × \$9.20 per litre | 46 |
| Labour: | |
| 20 hours × \$12.50 per hour | 250 |
| Overhead: | |
| 20 hours × \$3.70 per hour | 74 |
| Total | 545 |

Cost per unit of Product A = \$10.90 (\$545 per batch / 50 units per batch)

(2) Standard fixed production overhead cost per unit of Product A:

Standard fixed production overhead absorption rate = $\$51,000 / 1,700$ machine hours = $\$30$ per machine hour

$\times 8$ machine hours per batch = $\$240$ per batch

$/ 50$ units = $\$4.80$ per unit

(3) Labour efficiency variance = (actual labour hours – standard labour hours for the actual output) \times standard labour rate per hour.

$[838 \text{ hours} - (40 \text{ batches} \times 20 \text{ hours per batch})] \times \12.50 per hour = $\$475$

Or:

Labour efficiency variance = [actual batches – (standard batches from actual labour hours)] \times standard labour cost per batch.

$[40 \text{ batches} - (838 \text{ hours} / 20 \text{ hours per batch})] \times \250 per batch = $\$475$

The labour efficiency variance is ADVERSE because actual hours worked were greater than standard (or batches produced were less than standard).

Task 2

1.5 of 2 marks

Do each of the following fixed production overhead variances occur in a standard marginal costing system?

| | Yes | No |
|-------------|-----------------------|----------------------------------|
| Capacity | <input type="radio"/> | <input checked="" type="radio"/> |
| Expenditure | <input type="radio"/> | <input checked="" type="radio"/> |
| Efficiency | <input type="radio"/> | <input checked="" type="radio"/> |
| Volume | <input type="radio"/> | <input checked="" type="radio"/> |

Correct Answer

| | Yes | No |
|-------------|-----|----|
| Capacity | | x |
| Volume | | x |
| Expenditure | x | |
| Efficiency | | x |

The only fixed production overhead variance that occurs in a marginal costing system is the expenditure variance. All of the other fixed production overhead variances (volume, capacity and efficiency) result from the absorption of fixed production overheads into product costs which is only a feature of absorption costing.

Which of the following variances is/are required in order to reconcile the budgeted profit for a period with the standard profit on actual sales for the same period?

- (1) Sales volume revenue variance
- (2) Selling price variance
- (3) Sales volume profit variance
- (4) Total cost variance

- 1, 2 and 4
- 1 only
- 3 only
- 2, 3 and 4

Correct Answer

3 only

The standard profit on actual sales differs from the budgeted profit due only to a variance in the volume of activity. The two (budgeted and standard profit) are reconciled via the sales volume profit variance. NB the sales volume revenue variance reconciles the budgeted sales revenue with the standard sales revenue.

6) A publishing company is researching the reading habits of the United Kingdom's population. It randomly selects a number of locations from around the United Kingdom and then interviews everyone who lives in these locations.

What is this approach to sampling known as?

- Stratified sampling
- Quota sampling
- Systematic sampling
- Cluster sampling

Correct Answer

Cluster sampling

Selecting a definable subsection of a population (such as a location in a country) is used in cluster sampling.

7) The following statements refer to qualities of good information:

- (1) It should be clear and unambiguous to the recipient
- (2) It should be relevant to the needs of the recipient
- (3) It must be 100% accurate before the recipient uses it

Which of the above statements are correct?

- 1 and 3 only
- 1 and 2 only
- 1, 2 and 3
- 2 and 3 only

Correct Answer

1 and 2 only

Good information should be clear, unambiguous and relevant to the needs of the recipient.

It only needs to be as accurate as necessary to achieve its purpose. However it should not go into pointless detail for accuracy especially if this affects timeliness.

8) The following statements are about the gradient of a straight line:

- (1) The gradient of a straight line is the point at which the line crosses the y-axis
- (2) On a graph which shows a semi-variable cost the variable cost per unit can be determined using the gradient of the line

Are the statements true or false?

- Both statements are false
- Both statements are true
- Statement 1 is false and statement 2 is true
- Statement 1 is true and statement 2 is false

Correct Answer

Statement 1 is false and statement 2 is true

Statement 1 is false. The point at which the line crosses the y-axis is the intercept. Statement 2 is true. On a graph of a semi-variable cost the intercept shows the fixed element and the gradient gives the variable cost per unit.

9) Is each of the following statements about scatter diagrams true or false?

| | True | False |
|---|----------------------------------|----------------------------------|
| Scatter diagrams are graphs which show equations | <input type="radio"/> | <input checked="" type="radio"/> |
| The x axis on a scatter diagram is used to represent the independent variable | <input checked="" type="radio"/> | <input type="radio"/> |

Correct Answer

| | |
|--|--------------|
| Scatter diagrams are graphs which show equations | False |
| The x axis on a scatter diagram is used to represent the independent variable | True |

Scatter diagrams are graphs which are used to exhibit data (rather than equations). They compare the way that two variables vary with each other. There may not be any correlation between the two variables. If there is no correlation then there is no equation.

The x axis on a scatter diagram represents the independent variable and the y axis represents the dependent variable.

10) Is each of the following statements about aspects of budget administration true or false?

| | True | False |
|--|----------------------------------|-----------------------|
| A budget manual is a set of instructions governing aspects of the preparation of budgets | <input checked="" type="radio"/> | <input type="radio"/> |

One of the responsibilities of the budget committee is to prepare the annual budgets



Correct Answer

| | |
|--|-------|
| A budget manual is a set of instructions governing aspects of the preparation of budgets | True |
| One of the responsibilities of the budget committee is to prepare the annual budgets | False |

A budget manual is a set of instructions governing the preparation of budgets.

Whilst a budget committee is involved co-ordinating and administering the budget process it is not involved in the preparation of the actual budgets. This function would usually be undertaken by management accountants or the finance department.

11) A firm has used linear regression analysis to establish the relationship between total cost and activity in units.

What does the gradient of the regression line represent?

- The variable cost per unit
- The fixed cost per unit
- Total variable costs
- The average cost per unit

Correct Answer

The variable cost per unit

When analysing the relationship between total cost and activity level the gradient of the regression line represents variable cost per unit. This is because variable cost is the main relationship between total cost and activity level.

12) A company rents its factory for \$90,000 per annum. This year 60,000 units have been manufactured in the factory utilising 75% of its total capacity. Next year the plan is to manufacture 100,000 units by using the existing factory at full capacity and by renting just sufficient additional capacity. The additional capacity is available at the same rental cost per square metre as the existing factory.

What is the budgeted total rental cost for next year?

\$

Correct Answer

\$112,500

The company produces 60,000 units at 75% capacity. Therefore it would produce 80,000 units at 100% capacity (60,000 / 0.75).

Rent per unit of output at 100% capacity = \$1.125 (90,000 / 80,000)

Total rent cost at 100,000 units of output = \$112,500 (1.125 x 100,000)

13) An organisation is using regression analysis to establish the relationship between two variables (x and y). It is using six pairs of data for the analysis. The linear equation for the relationship is of the form:

$$y = a + 0.69x$$

Preliminary calculations have established that $x = 90$ and $y = 180$.

What is the value of a in the equation?

- 15.000
- 40.350
- 9.825
- 19.650

Correct Answer

19.650

Using the least squares method the value of a equals:

$$\left(\frac{y}{\text{Number of pairs of data}} \right) - (b \times \left(\frac{x}{\text{Number of pairs of data}} \right))$$

In the question there are six pairs of data and $b = 0.69$

Therefore:

$$a = 19.650 (180 / 6) - (0.69 \times (90 / 6))$$

14) Is each of the following statements about fixed and flexible budgets true or false?

| | True | False |
|--|----------------------------------|----------------------------------|
| The main purpose of a fixed budget is at the planning stage of the budget period | <input checked="" type="radio"/> | <input type="radio"/> |
| Flexible budgets can be used at the planning stage of the budget period | <input type="radio"/> | <input checked="" type="radio"/> |

Correct Answer

| | |
|---|-------------|
| Flexible budgets can be used at the planning stage of the budget period | True |
| The main purpose of a fixed budget is at the planning stage of the budget period | True |

Flexible budgets can be used both at the planning stage and retrospectively. For example at the planning stage a business may expect sales units to be 20,000 but suggest that they may be as low as 17,000 or as high as 22,000. Preparing flexible budgets for 17,000 and 22,000 units helps management plan for a sales shortfall or a boost in sales.

The fixed budget is prepared at the planning stage when it seeks to define the objectives of the organisation. There is little benefit in comparing a fixed budget with actual sales for a different level of activity

15) Flexed budgets for the cost of cleaning in a hotel depend on the number of beds occupied. The following information is available for different levels of occupancy:

| | | |
|---------------------------------|----|----|
| Proportion of beds occupied (%) | 73 | 85 |
|---------------------------------|----|----|

| | | |
|---------------------|--------|--------|
| Cleaning costs (\$) | 28,241 | 28,445 |
|---------------------|--------|--------|

In June 76% of beds were occupied.

What should the cleaning costs be for June?

- \$25,433
- \$29,402
- \$28,292
- \$28,343

Correct Answer

\$28,292

Using the high low method:

| \$ | % |
|--------|----|
| 28,445 | 85 |
| 28,241 | 73 |
| 204 | 12 |

The variable cost = $\$204 / 12\% = \17 per 1%

Fixed element = $\$28,445 - (85 \times \$17) = \$27,000$

Costs at 76% occupancy = $\$27,000 + (\$17 \times 76) = \$28,292$

Note: In this case it was not necessary to indicate that cleaning costs have both fixed and variable elements. If it was only variable the cost values would have been different from the ones specified in the question at the given different levels of activity.

16)

Background

Dancer Co wishes to buy a new packaging machine. Two alternatives are available; Machine A and Machine B. Both

have an expected life of three years. Dancer Co's management accountant has begun to prepare the following spreadsheet to evaluate the two machines but he has not yet completed it. The data entered to date is correct.

Machine B has a purchase cost of \$10,000 and an expected scrap value in three years time of \$4,000. It will generate a contribution of \$7,000 per annum before incurring production overheads (including straight line depreciation) of \$3,000 per year. In addition maintenance costs of \$1,200 per year will be payable each year in advance. All costs and revenues, apart from the purchase cost and maintenance costs may be assumed to occur at the end of the year.

Dancer Co's cost of capital is 10% per year. In the spreadsheet, t0 represents the date of the initial investment, t1 represents the first anniversary of this date etc.

| | |
|---------------|---------------------|
| Task 1 | 1 of 6 marks |
|---------------|---------------------|

| | | | |
|--|----|--------------------------------|-------|
| What is the net present value (NPV) of Machine A (to the nearest \$)? | \$ | <input type="text"/> | |
| What is the non-discounted payback period of Machine A (to the nearest one decimal place)? | | <input type="text" value="3"/> | Years |
| What value should be entered in cell C10? | \$ | <input type="text"/> | |
| What value should be entered in cell B11? | \$ | <input type="text"/> | |

Correct Answer

| | | | Notes |
|--|----|-----------|-------|
| What is the net present value (NPV) of Machine A (to the nearest \$)? | \$ | 2,425 | (1) |
| What is the non-discounted payback period of Machine A (to the nearest one decimal place)? | | 2.1 Years | (2) |
| What value should be entered in cell C10? | \$ | 1,000 | (3) |
| What value should be entered in cell B11? | \$ | 1,200 | (4) |

Notes:

(1) NPV of Machine A:

Using the cumulative present value (annuity) table and selecting the Period 3 factor at 10% (the cost of capital):

$$\$12,000 - (\$5,800 \times 2.487) = \$2,425$$

Or:

Using the present value table and selecting each of the discount factors for Periods 1, 2 and 3 at 10% (the cost of capital):

$$\$12,000 - [\$5,800 \times (0.909 + 0.826 + 0.751)] = \$2,418$$

NB: There is, at times, a slight difference between the cumulative discount factor in the annuity table and the sum of the factors from the present value table. This is allowed for in the answers that are acceptable in such questions.

(2) Non-discounted payback period of Machine A:

Assuming that cash inflows occur evenly during each year:

$$\$12,000 \div \$5,800 = 2.1 \text{ years}$$

Or:

Assuming that cash inflows occur at each year end (which is assumed for convenience in the calculation of NPV) the payback period of Machine A will be 3.0 years

NB These alternative answers are both acceptable unless clear instructions, as to which approach should be taken, are given in the question.

(3) Value in cell C10:

Production overheads of Machine B in Year 1 (cell C10):

$$\$3,000 - \$2,000 [\text{depreciation of Machine B } (\$10,000 - \$4,000)/3 \text{ years}] = \$1,000$$

(4) Value in cell B11:

Maintenance costs of Machine B in Year 0 (cell B11) are \$1,200 because they are payable in advance.

Machine B will look like this after filling in the above costs:

Does each of the following advantages apply to the NPV method, the non-discounted payback method, both of these methods or neither of these methods?

| | NPV | Non-discounted payback | Both methods | Neither method |
|--|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| It takes into account the time value of money | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| It is cash flow based | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| It considers the effect on reported profits | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> |
| It selects projects that quickly recoup their initial investment | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> |

Correct Answer

| | NPV | Non-discounted payback | Both methods | Neither method |
|--|-----|------------------------|--------------|----------------|
| It takes into account the time value of money | x | | | |
| It is cash flow based | | | x | |
| It considers the effect on reported profits | | | | x |
| It selects projects that quickly recoup their initial investment | | x | | |

Only NPV takes the time value of money into account.

Only non-discounted payback ranks projects according to how quickly they recoup their initial investment.

Both NPV and non-discounted payback are cash flow based.

Neither NPV nor non-discounted payback consider the effect on reported profits.

17) Which of the following statements about motivation are correct?

- (1) All employees are motivated by money
- (2) All employees should be motivated by the employer to work towards the mission of the organisation

- Both statements
- Statement 1 only
- Statement 2 only
- Neither statement

Correct Answer

Statement 2 only

Not all employees are motivated by money. Many are motivated by spending time with their families or a desire to do a good job.

It is important that goals for all employees are aligned with the organisation's overall mission. Employers must motivate employees to achieve these goals. This is vital for the future success of the business.

18) The following information is available for two projects. Only one project can be undertaken.

Project A

Project B

| | | |
|-------------------------------|-----------|-----------|
| Internal rate of return (IRR) | 16% | 17% |
| Discounted payback period | 3.6 years | 4.1 years |
| Net present value (NPV) | \$18,300 | \$16,900 |

Which TWO of the following statements are true?

- Ranking the projects based on discounted payback period would make project B seem more favourable

- Project B should be accepted because it has the higher IRR

- Project A should be accepted because it has the higher NPV

- At a cost of capital of 17% project B would have a zero NPV

Correct Answer

Project A should be accepted because it has the higher NPV

At a cost of capital of 17% project B would have a zero NPV

The NPV method is superior to all other criteria for investment appraisal. Therefore statement about accepting project A for its higher NPV is true and the statement about accepting project B for its higher IRR is false.

Moreover IRR is the cost of capital which gives a zero NPV and so the statement about cost of capital is 17% is also true.

A discounted payback period of 3.6 years is more favourable than 4.1 years because a shorter payback is considered to be less risky.

19) Which TWO of the following statements about responsibility centres are true?

- There are only two types of responsibility centre

- Managers of cost centres should be accountable for controllable costs only
- The performance of a profit centre is measured by its return on capital
- A cost which is not controllable by a junior manager may be controllable by a senior manager

Correct Answer

Managers of cost centres should be accountable for controllable costs only

A cost which is not controllable by a junior manager may be controllable by a senior manager

There are more than two types of responsibility centres, namely, cost, profit, revenue and investment.

It is important both from a motivational point of view and a control point of view that managers are only judged on areas over which they have control.

A profit centre's performance is usually based on profit, rather than its return on capital. An investment centre is measured by its return on capital.

Costs that are not controllable by a junior manager may be controllable by a senior manager. For example high direct labour costs in a department may be caused by excessive overtime. A junior manager may be obliged to continue meeting production schedules but senior managers may be able to reduce costs by deciding to hire extra full-time staff.

20) What are the purposes of having strategic, tactical and operational objectives?

- (1) To comply with government legislation
 - (2) To ensure goal congruence
 - (3) To ensure that the objectives arising from the mission statement are quantified and fed down to the entire business
- 1 and 3 only
 - 1 and 2 only
 - 2 and 3 only
 - 1, 2 and 3

Correct Answer

2 and 3 only

The purpose of these objectives is to ensure that all areas of the business are working towards the same goals (goal congruence). The goals arise as a result of the mission statement.

21) The following details have been extracted from the accounts of B Co for the quarter ended 30 June.

1 April - 30 June

\$'000

| | |
|--------------------|-----|
| Net profit | 35 |
| Non-current assets | 150 |
| Inventory | 12 |
| Receivables | 22 |
| Payables | 15 |
| Cash at bank | 14 |

What is the quick ratio for the quarter ended 30 June?

- 10
- 3.2
- 12.4
- 2.4

Correct Answer

2.4

Quick ratio = Current assets less inventories / Current liabilities
 = (Receivables + Cash at bank) / Payables
 = (22 + 14) / 15
 = 2.4

22) Z Co has long-term loan liabilities of \$324,000 and shareholders' funds of \$402,000.

What is Z Co's capital gearing ratio?

- 19.4%
- 44.6%
- 124.1%
- 55.4%

Correct Answer

44.6%

$$\text{Gearing} = \frac{\text{Prior charge capital (long-term debt)}}{\text{Prior charge capital} + \text{Shareholders equity}}$$

$$\text{Gearing} = \frac{324,000}{324,000 + 402,000} = 44.6\%$$

Note that capital gearing can also be given by the formula which is 80.6%, but this is not one of the options here

$$\frac{\text{Prior charge capital}}{\text{Shareholders' equity}}$$

23) Donner Co operates for 365 days per year and makes all of its sales on credit. A summary of its current financial information is given below.

| Summarised statement of profit or loss | \$'000 |
|--|---------|
| Revenue | 150,000 |

| | |
|---|---------------|
| Cost of sales | 60,000 |
| Operating expenses | 50,000 |
| Operating profit | 40,000 |
| Finance charges | 12,000 |
| Profit before tax | 28,000 |
| Summarised statement of financial position | |
| \$'000 | |
| Non current assets | 60,000 |
| Current assets (all receivables) | 35,000 |
| | 95,000 |
| Ordinary share capital | 15,000 |
| Reserves | 30,000 |
| | 45,000 |
| Long term liabilities (5% bank loan) | 30,000 |
| Current liabilities | 20,000 |
| | 95,000 |

Calculate the following based upon Donner Co's summarised financial information. All figures should be to one decimal place.

Return on capital employed (ROCE)

%

Asset turnover ratio (based upon capital employed)

times

Receivables days

days

Capital gearing (debt to equity)

%

Interest cover ratio

times

Correct Answer

| | | Notes |
|--|-----------|-------|
| Return on capital employed (ROCE) | 53.3 % | (1) |
| Asset turnover ratio (based upon capital employed) | 2.0 times | (2) |
| Receivables days | 85.2 days | (3) |
| Capital gearing (debt to equity) | 66.7 % | (4) |
| Interest cover ratio | 3.3 times | (5) |

Notes:

(1) Return on capital employed = (operating profit / capital employed) × 100%

(\$40,000 / \$75,000) × 100% = 53.3%

(2) Asset turnover = revenue / capital employed

\$150,000 / \$75,000 = 2.0 times

(3) Receivables days = (receivables / revenue) × 365

(\$35,000 / \$150,000) × 365 = 85.2 days

(4) Capital gearing (debt to equity) = [long term liabilities / (ordinary share capital + reserves)] × 100%

(\$30,000 / \$45,000) × 100% = 66.7%

(5) Interest cover = operating profit / interest

\$40,000 / \$12,000 = 3.3 times

The performance of Donner Co's closest rival, Competitor A, together with the industry average in their sector is given below.

| | Competitor A | Industry Average |
|--|--------------|------------------|
| ROCE (%) | 35.0 | 40.0 |
| Asset turnover ratio based upon capital employed | 2.0 | 3.0 |
| Receivables (days) | 70 | 65 |
| Capital gearing (debt to equity) (%) | 75.0 | 50.0 |
| Interest cover ratio | 2.0 | 5.0 |
| Current ratio | 1.5 | 2.0 |

Based on the figures above, are the statements about Competitor A true or false?

| | True | False |
|--|----------------------------------|----------------------------------|
| It has a smaller operating profit margin than the industry average | <input type="radio"/> | <input checked="" type="radio"/> |
| Its capital gearing is riskier than the industry average | <input type="radio"/> | <input checked="" type="radio"/> |
| Its liquidity position is worse than the industry average | <input checked="" type="radio"/> | <input type="radio"/> |
| If its operating profit were 30% lower it would make a net loss | <input checked="" type="radio"/> | <input type="radio"/> |

Correct Answer

| | True | False |
|--|------|-------|
| Its capital gearing is riskier than the industry average | x | |
| It has a smaller operating profit margin than the industry average | | x |
| Its liquidity position is worse than the industry average | x | |
| If its operating profit were 30% lower it would make a net loss | | x |

The capital gearing of Competitor A is higher than the industry average so this would be regarded as riskier, so this statement is TRUE; because fixed interest commitments from profit are higher.

The current ratio of Competitor A is lower than the industry average so its liquidity position would be judged to be worse, so this statement is TRUE.

The operating profit margin (%) can be calculated as ROCE / asset turnover. Thus:

Competitor A 35.0% / 2.0 times = 17.5% operating profit margin

Industry average 40.0% / 3.0 times = 13.3% operating profit margin

Competitor A thus has a larger (not smaller) operating profit margin than the industry average, so this statement is FALSE.

Competitor A would not make a net loss after interest if its operating profit was 30% lower. With interest cover of 2.0 times the operating profit would have to reduce by over 50% for it to make a net loss after interest and so this statement is FALSE

24) Which TWO of the following statements about cost control and cost reduction are true?

- Cost control is concerned with regulating the costs of operating a business
- Cost control starts with the assumption that current cost levels are too high
- Cost reduction aims to reduce costs to budget level
- Cost reduction is a planned approach to reducing expenditure

Correct Answer

Cost control is concerned with regulating the costs of operating a business

Cost reduction is a planned approach to reducing expenditure

It is easy to confuse cost control and cost reduction but the statements about regulating costs and a planned approach to reducing expenditure are true.

The assumption that current cost levels are too high refers to cost reduction, not cost control. Reducing costs to budget level refers to cost control, not cost reduction.

25) The operating statement used by an organisation to measure the performance of its divisions is structured as follows:

| | \$ | \$ | \$ |
|---------------------------------|-----|----|----|
| External sales | | X | |
| Internal transfers | | X | |
| Variable cost of sales | (X) | | |
| Other variable divisional costs | (X) | | |

| | | | |
|---|-----|-----|---|
| | | (X) | |
| Contribution | | X | |
| Depreciation on controllable non current assets | (X) | | |
| Other controllable fixed costs | (X) | | |
| | | (X) | |
| Controllable operating profit | | | X |
| Depreciation on other divisional non current assets | (X) | | |
| Other traceable divisional costs | (X) | | |
| | | (X) | |
| Traceable divisional profit | | X | |
| Apportioned head office cost | | (X) | |
| Divisional net profit | | | X |

Which of the following would provide the best basis for measuring the performance of a manager of an investment centre?

- Traceable divisional profit
- Controllable operating profit
- Contribution
- Divisional net profit

Correct Answer

Controllable operating profit

Controllable operating profit should be used because it includes the total of all costs and revenues that can be attributable to the performance of a manager of an investment centre.

Contribution is not suitable as it does not reflect controllable fixed costs. Traceable divisional profit and divisional net profit are not suitable as they include costs that are outside the control of the investment centre manager.

26) Which of the following statements about non-financial measures are true?

- (1) Non-financial measures can be useful for indicating future financial performance
- (2) Non-financial measures may help to prevent short termism
- Both statements are true
- Statement 1 is false and statement 2 is true
- Statement 1 is true and statement 2 is false
- Both statements are false

Correct Answer

Both statements are true

Statement 1 is true. For example the non-financial measure of poor customer satisfaction indicates that the financial measure of future sales may change.

Statement 2 is true. Financial performance measures used alone may provide managers with shorter term incentives which could be detrimental to the business in the long term. For example price increases applied in the short term may meet financial targets but damage customer relations in the longer term.

27) A hotel has 120 identical bedrooms. It uses labour efficiency percentages to compare the performance of four groups of workers (A, B, C and D) employed to clean the bedrooms. The standard time to clean a bedroom is 40 minutes.

The following data for last week are available:

| Group | A | B | C | D |
|-----------------------------------|----------|----------|----------|----------|
| Actual hours worked | 128 | 140 | 124 | 108 |
| Actual number of bedrooms cleaned | 198 | 207 | 186 | 165 |

Which group of workers was the most efficient last week?

- Group A
- Group B
- Group D
- Group C

Correct Answer

Group A

Total number of bedrooms cleaned per hour:

- (1) Group A: 1.55 (198 / 128)
- (2) Group B: 1.48 (207 / 140)
- (3) Group C: 1.50 (186 / 124)
- (4) Group D: 1.53 (165 / 108)

Group A cleaned more bedrooms per hour than the other groups and is therefore the most efficient.

28) A company uses an overhead absorption rate of \$24 per machine hour which was calculated using 80,000 budgeted machine hours for the period. During the same period actual total overhead expenditure was \$2,100,000 and 84,000 machine hours were recorded on actual production.

By how much was the total overhead under or over absorbed in the period?

- \$80,000 over absorbed
- \$96,000 over absorbed
- \$180,000 under absorbed
- \$84,000 under absorbed

Correct Answer

\$84,000 under absorbed

Total overhead absorbed = \$2,016,000 (24 x 84,000)

Actual total overhead = \$2,100,000

Under absorbed overhead = \$84,000 (2,016,000 - 2,100,000)

29) A company operates a process in which no losses are incurred. It uses the weighted average valuation method. The process account for last month was as follows:

| Process Account | | | |
|---|----------------|---|----------------|
| | \$ | | \$ |
| Opening work-in-progress (7,000 units: 66% complete) | 55,000 | Finished output (14,600 units) | 335,800 |
| Input | 380,160 | Closing work-in-progress (8,000 units) | 99,360 |
| | <u>435,160</u> | | <u>435,160</u> |

What was the degree of completion of the 8,000 units in the closing work-in-progress?

- 40%
- 60%
- 46%
- 54%

Correct Answer

54%

Finished units are 100% complete in terms of cost. Work-in-progress is incomplete in terms of cost. Therefore the degree of completion can be calculated by comparing the cost per unit of work-in-progress with cost per unit of the finished output.

Cost per completed unit of output = \$23 (335,800 / 14,600)

Cost per unit of closing work-in-progress = \$12.42 (99,360 / 8,000)

Degree of completion work-in-progress = 54% ((12.42 / 23) x 100)

30) Which of the following methods of costing describes target costing?

- A method that sets a target price by adding a desired profit margin to actual cost
- A method that sets a target cost by subtracting a desired profit margin from a competitive market price

- A method that targets selected business departments and aims to minimise their costs
- A method whose target is to reduce unit cost without impairing value to the customer

Correct Answer

A method that sets a target cost by subtracting a desired profit margin from a competitive market price

Target costing involves deciding on a competitive price for a product and then deducting a desired profit margin from it. The balance is the target cost.

31) company uses absorption costing with a predetermined hourly fixed overhead absorption rate. The following situations arose last month:

- (1) Actual hours worked were less than the budgeted hours used to set the predetermined absorption rate
- (2) Actual overhead expenditure exceeded budgeted expenditure

Which of the following statements is correct?

- Situation 1 would cause the overheads to be over absorbed and situation 2 would cause the overheads to be under absorbed
- Both situations would cause the overheads to be over absorbed
- Situation 1 would cause the overheads to be under absorbed and situation 2 would cause the overheads to be over absorbed
- Both situations would cause the overheads to be under absorbed

Correct Answer

Both situations would cause the overheads to be under absorbed

Overheads will be under absorbed if the actual activity is less than what was budgeted because there is not enough activity when multiplied by the absorption rate to cover the overheads.

Actual overheads will also be under absorbed if they exceed budgeted levels. This is because the absorption rate is not high enough to cover the increased overhead.

32) A factory consists of two production cost centres (T and V) and one service cost centre (W). The total allocated and apportioned overhead for each centre is as follows:

| T (\$) | V (\$) | W (\$) |
|--------|--------|--------|
| 22,000 | 54,000 | 80,000 |

The service cost centre overhead is reapportioned to the production cost centres based on the number of employees. The number of employees in each cost centre is as follows:

| T | V | W |
|----|----|----|
| 50 | 30 | 20 |

After the reapportionment of service cost centre overhead what is the total overhead for production cost centre T?

\$

Correct Answer

\$72,000

Total employees at profit centres T and V = 80 (50 + 30)

Profit centre T's proportion of employees = 62.5% (50 / 80)

Profit centre W's overheads allocated to profit centre T = \$50,000 (80,000 x 0.625)

Profit centre T's total overhead = \$72,000 (22,000 + 50,000)

33) A process operates with a normal loss of 20% of input. All losses have a net realisable value of \$5.60 per litre. Last month 150,000 litres were input into the process and the output of good production was 130,000 litres. Costs arising last month were \$924,000.

What was the valuation of the 130,000 litres of output in the process account?

\$

Correct Answer

\$819,000

The value of a unit of output from a process is calculated as:

(Cost of process - Scrap value of normal loss) / Expected output.

Number of units input = 150,000

Normal loss = 30,000 (20% x 150,000)

Expected output = 120,000 (150,000 - 30,000)

Scrap value of normal loss = \$168,000 (30,000 x 5.6)

Cost per expected unit = \$6.3 ((924,000 - 168,000) / 120,000)

Value of output = \$819,000 (130,000 x 6.3)

34) A company manufactures and sells a single product. Next year the budgeted total fixed production costs are \$300,000, the budgeted sales are 100,000 units and the budgeted production is 120,000 units. The budgeted profit for next year using absorption costing principles is \$80,000.

What is the budgeted profit for next year using marginal costing principles?

\$30,000

\$130,000

\$20,000

\$140,000

Correct Answer

\$30,000

The difference between profits calculated under absorption costing and marginal costing principles is due to the treatment of fixed costs.

In absorption costing fixed costs are allocated to units produced. Therefore fixed costs will move from one financial period to another where not all units are sold, but are carried forward as inventory.

In marginal costing all fixed costs are set off against revenue in the period they are incurred. No fixed costs are carried forward.

Fixed cost per unit of production = \$2.5 (300,000 / 120,000)

Closing inventory = 20,000 (120,000 - 100,000)

Fixed cost held in closing inventory = \$50,000 (2.5 x 20,000)

As the \$50,000 of fixed cost would have been written off in the period under marginal costing, but carried forward under absorption costing, the absorption costing profit will be higher than under marginal costing principles by \$50,000.

Therefore the profit using marginal costing principles is \$30,000 (80,000 - 50,000).

35) Last month the opening inventory of a company was 2,000 units and the closing inventory was 4,500 units. Using absorption costing this closing inventory was valued at \$29,250. Using marginal costing last month's profit was \$25,000 and using absorption costing it was \$34,000.

What was the variable production cost per unit last month?

- \$3.60
- \$2.90
- \$2.00
- \$4.50

Correct Answer

\$2.90

Variable cost per unit = Total cost per unit - Fixed cost per unit

Total cost per unit = \$6.50 (29,250 / 4,500)

Fixed cost per unit = \$3.60 ((34,000 - 25,000) / (4,500 - 2,000))

Variable production cost per unit = \$2.90 (6.50 - 3.60)

36) Which TWO of the following are most likely to use batch costing?

- A film making company
- An oil refinery
- A footwear manufacturer
- A bakery

Correct Answer

A footwear manufacturer

A bakery

Batch costing would be used in industries that produce similar, separately identifiable products (such as in footwear manufacturing and baking).

It would not be used where the products are not similar (such as in film making) or where process costing is more appropriate (such as in oil refining).

37) An organisation operates a process that creates two joint products (T and V). Product T has a selling price of \$20 per litre and product V has a selling price of \$60 per litre. Last month joint costs of \$600,000 were incurred and the completed production was as follows:

| Product | Litres |
|---------|--------|
| T | 18,000 |
| V | 9,000 |

The organisation uses the sales value method of apportioning joint costs.

How much of the joint costs were apportioned to product V last month?

- \$200,000
- \$240,000
- \$360,000
- \$450,000

Correct Answer

\$360,000

Sales value of product T = \$360,000 (18,000 x 20)

Sales value of product V = \$540,000 (9,000 x 60)

Total sales = \$900,000 (360,000 + 540,000)

Product V proportion of sales = 60% (540,000 / 900,000)

Product V proportion of joint costs = \$360,000 (600,000 x 60%)