Chapter 18  Marginal costing for decision making

Questions

1. Von Berg & Sons Limited is a manufacturer of china plates. Its costs include the following:
   (i) Payments to plate painters. The painters each receive a basic wage and then are paid a fixed sum for each completed plate that passes the firm’s quality checks
   (ii) Managing director’s salary
   (iii) Cost of china clay used in production
   (iv) Royalty payable to designer. The designer receives £30 for production runs of up to 1000, £60 for production runs of up to 2000, and so on
   (v) Depreciation of delivery vehicle

Classify each of these costs as:
   • variable
   • fixed
   • stepped
   • semi-variable

2. Wyman and Wallberger Limited produces golf bags which sell for £107 each. The direct materials cost per bag is £21.50 and direct labour costs per bag are £13.50. In February 20X4 the company has budgeted to sell 270 golf bags. Fixed production overheads for the month are expected to total £16 270.

Calculate the company’s
   (a) budgeted contribution for February 20X4
   (b) budgeted net profit for February 20X4.

3. Arnhem Alliss Limited manufactures de-luxe juicing machines. Each machine has a wholesale price of £225. Variable costs of manufacture are £56 per machine. Because of increased competition, the sales director has reduced the level of sales that the company can realistically expect to make. The actual sales level in 20X5 was 3561 machines, but the budget for 20X6 is only 3250 machines. Fixed costs for the year are budgeted at £560 000.

   (a) Calculate the total contribution that can be expected at a sales level of 3250 machines
(b) Calculate the break-even point in units (to nearest whole unit)

(c) Calculate the break-even point in units if the selling price were to be increased by 10% (to nearest whole unit)

(d) Advise the company’s directors on whether or not they should increase the selling price.

4. Bonneville Caravan Supplies Limited manufactures specialist sink units for fitting to caravans and camper vans. The selling price of a sink unit is £107.20, and variable costs per unit are £45.60. The company’s directors have met to discuss sales plans for the following year, 20X7. There is stiff competition in the caravan fittings industry and they feel that it will be difficult to match the sales performance of 3150 units for the year just ended, 20X6. Also, fixed costs have recently risen substantially because of the implementation of new European law (The Caravan Sinks Order 20X6). The company expects to incur fixed costs of £215 000 in 20X7, and the directors would like the company to achieve a target profit of £85 000.

You are required to calculate, to the nearest whole unit:

(i) break-even point (in units)

(ii) the margin of safety (in units) if the company can equal the 20X6 sales performance of 3150 units

(iii) the number of units the company must sell to achieve its target profit

(iv) the number of units the company must sell to achieve its target profit if it were able to make savings on fixed costs of £15 000 in 20X7.

5. Carstairs Optical Products Limited manufactures highly specialised optical equipment for surveillance purposes. There is a high demand for their products but the company operates under the constraint of a shortage of specialist labour. The production team is currently formulating a production plan for the company’s two principal products, G and H, for 20X2 and wishes to determine the optimal product mix.

Details of the two products are as follows:

<table>
<thead>
<tr>
<th>Product</th>
<th>Product G</th>
<th>Product H</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selling price</td>
<td>£1 570</td>
<td>£2 060</td>
</tr>
<tr>
<td>Variable cost of metals, lenses etc</td>
<td>£462</td>
<td>£772</td>
</tr>
</tbody>
</table>
Specialist labour costs 4 hours/ 5 hours @ £20.00
Other variable labour costs

Annual demand

The supply of specialist labour that will be available in 20X2 is limited to 700 hours.

Required:
(a) Calculate the contribution per unit of limiting factor for products G and H
(b) Advise the production team on the plan they should follow for 20X2.

6. In the context of marginal costing explain the meaning of the following terms:
   (a) marginal cost
   (b) contribution
   (c) stepped cost
   (d) cost-volume-profit analysis
   (e) limiting factors.

7. Marginal costing can provide useful information for decision-making. However, there are limitations to its usefulness. Identify and briefly explain three of the limitations.