

Manufacturing accounts: A Level Accounting notes and worked example

Cambridge International AS and A Level Accounting 9706. These notes cover the manufacturing account from first principles: why it is needed, how costs are classified, the full layout, the transfer of finished goods at a mark-up, the provision for unrealised profit, and the links to the income statement and the statement of financial position. A complete worked example is followed by six practice questions with full answers. All figures are in dollars (\$), as in Cambridge papers.

Why a manufacturing business needs a manufacturing account

A trader buys finished goods and sells them. Its cost of sales is simply opening inventory plus purchases less closing inventory. A manufacturer does not buy the goods it sells: it buys raw materials, pays workers to convert them and runs a factory to do so. The cost of the goods it makes must therefore be calculated before the trading section of the income statement can be prepared.

The manufacturing account is the statement that does this calculation. It collects every cost of running the factory for the period and arrives at the **cost of production** of the goods completed in that period. That figure takes the place of "purchases" in the trading section of the income statement.

Preparing a separate manufacturing account also gives the owner useful information:

- it shows the prime cost and the factory overheads separately, so changes in either can be investigated;
- it shows the cost of production, which can be compared with the price an outside supplier would charge for the same goods (a make-or-buy decision);
- when goods are transferred at a mark-up, it shows the profit earned by the factory separately from the profit earned by selling.

Direct and indirect costs, prime cost, factory overheads and cost of production

Direct costs are costs that can be traced directly to the units of product being made. The three direct costs are direct materials, direct labour and direct expenses.

Indirect costs (factory overheads) are costs of running the factory that cannot be traced to particular units of product, such as factory rent, factory power, supervisors' salaries and depreciation of factory machinery.

Prime cost is the total of all direct costs: direct materials consumed + direct labour + direct expenses.

Cost of production is the cost of the goods completed in the period: prime cost + factory overheads + opening work in progress, less closing work in progress.

Work in progress is inventory of partly finished goods, valued at the cost incurred on it so far.



Direct materials

The figure needed is the cost of raw materials *consumed*, not the cost of raw materials bought. It is found in the same way as cost of sales in a trading account:

Opening inventory of raw materials + purchases of raw materials + carriage inwards on raw materials, less returns outwards of raw materials, less closing inventory of raw materials.

Carriage inwards is part of the cost of getting materials to the factory, so it is added to purchases. Returns outwards reduce purchases.

Direct labour

Direct wages are the wages of the workers who actually make the product (machine operators, assemblers). The wages of the factory supervisor, cleaners and maintenance staff are indirect and go under factory overheads. Any accrued direct wages at the year end must be added in.

Direct expenses

These are expenses that vary with the number of units made and are traceable to them. The usual examples are royalties paid per unit produced and the hire of a specific machine for a specific job. There are often none at all.

Factory overheads

Every other cost of running the factory: indirect wages, factory rent and rates, factory insurance, light, heat and power, repairs to plant, depreciation of factory buildings and machinery. Expenses shared between the factory and the office (rent, insurance, electricity) are apportioned on the basis given in the question, and only the factory share enters the manufacturing account. The office share is an expense in the income statement.

Exam tip. Read every adjustment note twice. Accruals and prepayments must be applied before a cost is entered, and shared costs must be split in the proportion stated. A single unadjusted figure carries through to prime cost, cost of production and profit, so one careless entry can cost several marks.

The layout of a manufacturing account

The pro-forma below shows every heading you may need. The column headings are the usual two money columns: workings in the first, sub-totals in the second. Items in brackets are deducted.

Name of business: Manufacturing account for the year ended 31 December 20X5	\$	\$
Opening inventory of raw materials	X	
Add purchases of raw materials	X	
Less returns outwards	(X)	
Add carriage inwards	X	
	X	
Less closing inventory of raw materials	(X)	

Cost of raw materials consumed		X
Direct wages		X
Direct expenses (for example royalties)		X
Prime cost		X
Factory overheads:		
Indirect wages	X	
Factory rent and rates	X	
Factory light, heat and power	X	
Factory insurance	X	
Depreciation of factory machinery	X	
Total factory overheads		X
		X
Add opening work in progress		X
Less closing work in progress		(X)
Cost of production (transferred to the income statement)		X
Manufacturing profit (mark-up on cost of production, if any)		X
Transfer price of finished goods		X

Two points about work in progress. First, goods that were partly made at the start of the year are completed during the year, so their opening value is added to this year's costs. Second, goods still partly made at the end of the year have not been completed, so their closing value is deducted. The result is the cost of goods actually *completed* in the year. If a question gives no work in progress figures, the cost of production is simply prime cost plus factory overheads.

Notice that finished goods inventory never appears in the manufacturing account. Opening and closing finished goods belong to the trading section of the income statement, exactly as the inventory of a trader does.

Transfer at cost plus a mark-up and the provision for unrealised profit

Manufacturing profit

Some businesses transfer finished goods from the factory to the trading section at cost of production plus a percentage mark-up, rather than at cost. The mark-up is the **manufacturing profit**. The idea is to charge the selling side of the business what it would have paid an outside supplier, so that the profit of the factory and the profit of the sales function can each be judged on its own.

In the manufacturing account the manufacturing profit is added below cost of production and the total is labelled transfer price. In the income statement the transfer price (not the cost of production) takes the place of purchases in the trading section, and the manufacturing profit is then added to gross profit in the profit and loss section. The total profit of the business is not changed by this; it is simply split into two parts.

Journal entries for the transfer (manufacturing profit of \$P, cost of production \$C, transfer price \$C + \$P)

Dr Income statement (trading section) \$C + \$P

Cr Manufacturing account \$C + \$P

Transfer of finished goods at transfer price.

Dr Manufacturing account \$P

Cr Income statement (profit and loss section) \$P

Manufacturing profit for the year.

Why a provision for unrealised profit is needed

When goods are transferred at a mark-up, the closing inventory of finished goods is valued at transfer price, which includes manufacturing profit. That profit has not been realised, because the goods have not been sold to an outside customer. Inventory must be valued at the lower of cost and net realisable value, so the profit element in closing finished goods must be removed before the statement of financial position is prepared. This is done by creating a **provision for unrealised profit**.

Provision for unrealised profit is the amount of manufacturing profit included in the closing inventory of finished goods that are valued at transfer price. It is deducted from the inventory of finished goods in the statement of financial position so that inventory is shown at cost.

Calculation: if goods are transferred at cost plus m%, the profit in inventory valued at transfer price V is $V \times m / (100 + m)$.

So at a mark-up of 20%, the provision is $V \times 20/120$, which is one sixth of the transfer value. At 25% it is $V \times 25/125$, one fifth. At 50% it is $V \times 50/150$, one third.

The provision is a credit balance that is carried forward, like a provision for doubtful debts. Only the *change* in the provision goes through the income statement each year:

- an **increase** in the provision is deducted from profit (it is treated like an expense);
- a **decrease** in the provision is added to profit (it is treated like other income).

Journal entries for the provision

Year the provision is first created, or any year it increases:

Dr Income statement (amount of the provision, or of the increase)

Cr Provision for unrealised profit

Any year the provision decreases:

Dr Provision for unrealised profit (amount of the decrease)

Cr Income statement

How the manufacturing account links to the income statement and the statement of financial position

Income statement, trading section. Cost of sales = opening inventory of finished goods + cost of production (or transfer price, if a mark-up is used), less closing inventory of finished goods. Revenue

less cost of sales gives gross profit.

Income statement, profit and loss section. Manufacturing profit (if any) is added to gross profit. An increase in the provision for unrealised profit is deducted; a decrease is added. Then all non-factory expenses are deducted: office salaries, the office share of rent, insurance and power, distribution and selling costs, depreciation of office equipment and delivery vehicles, finance costs. The result is profit for the year.

Statement of financial position. Inventory under current assets is shown in three parts: raw materials, work in progress, and finished goods. Where finished goods are valued at transfer price, the provision for unrealised profit is deducted from them so that the finished goods are shown at cost. Accrued factory expenses appear under current liabilities and prepaid factory expenses under current assets, just as for any other expense.

Worked example

Hira Furniture is a small manufacturer. The following balances were taken from the books on 31 December 2025.

Item	\$
Inventory at 1 January 2025: raw materials	18,000
Inventory at 1 January 2025: work in progress	9,000
Inventory at 1 January 2025: finished goods (at transfer price)	36,000
Purchases of raw materials	164,000
Returns outwards of raw materials	4,000
Carriage inwards	6,000
Direct wages	96,000
Royalties (direct expense)	5,000
Factory indirect wages	31,000
Rent and rates	30,000
Factory power	13,500
Factory insurance (paid)	4,000
Revenue	540,000
Office salaries	48,000
Selling expenses	22,000
Provision for unrealised profit at 1 January 2025	6,000

Additional information:

1. Inventory at 31 December 2025: raw materials \$21,000; work in progress \$8,000; finished goods (at transfer price) \$42,000.

2. Rent and rates are to be apportioned 80% to the factory and 20% to the office.
3. Factory insurance of \$500 was owing at 31 December 2025.
4. Factory machinery is to be depreciated by \$12,000 for the year.
5. Finished goods are transferred to the trading section at cost of production plus 20%.

Step 1: apply the adjustments

Factory rent and rates = $30,000 \times 80\% = 24,000$. Office rent and rates = $30,000 \times 20\% = 6,000$.
Check: $24,000 + 6,000 = 30,000$.

Factory insurance for the year = $4,000 \text{ paid} + 500 \text{ owing} = 4,500$. The \$500 accrual is a current liability.

Depreciation of factory machinery = 12,000 (given), a factory overhead.

Step 2: manufacturing account

Hira Furniture: Manufacturing account for the year ended 31 December 2025	\$	\$
Opening inventory of raw materials	18,000	
Add purchases of raw materials	164,000	
Less returns outwards	(4,000)	
Add carriage inwards	6,000	
	184,000	
Less closing inventory of raw materials	(21,000)	
Cost of raw materials consumed		163,000
Direct wages		96,000
Royalties		5,000
Prime cost		264,000
Factory overheads:		
Indirect wages	31,000	
Rent and rates (80%)	24,000	
Power	13,500	
Insurance (4,000 + 500)	4,500	
Depreciation of machinery	12,000	
Total factory overheads		85,000
		349,000
Add opening work in progress		9,000
		358,000

Less closing work in progress	(8,000)
Cost of production	350,000
Manufacturing profit (350,000 × 20%)	70,000
Transfer price of finished goods	420,000

Arithmetic checks: $18,000 + 164,000 = 182,000$; $182,000 - 4,000 = 178,000$; $178,000 + 6,000 = 184,000$; $184,000 - 21,000 = 163,000$. Prime cost: $163,000 + 96,000 + 5,000 = 264,000$. Overheads: $31,000 + 24,000 + 13,500 + 4,500 + 12,000 = 85,000$. $264,000 + 85,000 = 349,000$; $+ 9,000 = 358,000$; $- 8,000 = 350,000$. Mark-up: $350,000 \times 20/100 = 70,000$; $350,000 + 70,000 = 420,000$.

Step 3: income statement

Hira Furniture: Income statement for the year ended 31 December 2025	\$	\$
Revenue		540,000
Opening inventory of finished goods	36,000	
Add transfer price of finished goods	420,000	
	456,000	
Less closing inventory of finished goods	(42,000)	
Cost of sales		(414,000)
Gross profit		126,000
Add manufacturing profit		70,000
		196,000
Less increase in provision for unrealised profit		(1,000)
		195,000
Less expenses:		
Office salaries	48,000	
Rent and rates (20%)	6,000	
Selling expenses	22,000	
Total expenses		(76,000)
Profit for the year		119,000

Arithmetic checks: $36,000 + 420,000 = 456,000$; $456,000 - 42,000 = 414,000$; $540,000 - 414,000 = 126,000$; $126,000 + 70,000 = 196,000$; $196,000 - 1,000 = 195,000$; $48,000 + 6,000 + 22,000 = 76,000$; $195,000 - 76,000 = 119,000$.

Step 4: the provision for unrealised profit

Mark-up is 20%, so profit in inventory = transfer value $\times$ 20/120.

Provision needed at 31 December 2025 = $42,000 \times 20/120 = 7,000$.

Provision at 1 January 2025 = 6,000 (check: $36,000 \times 20/120 = 6,000$).

Increase in provision = $7,000 - 6,000 = 1,000$. This is the figure deducted in the income statement above.

Journal entry: Dr Income statement 1,000; Cr Provision for unrealised profit 1,000.

Provision for unrealised profit account: balance b/d 6,000 Cr; income statement 1,000 Cr; balance c/d 7,000 on the debit side to close the account, brought down as a credit balance of 7,000.

Step 5: statement of financial position extract at 31 December 2025

Current assets	\$	\$
Inventory: raw materials		21,000
Inventory: work in progress		8,000
Inventory: finished goods at transfer price	42,000	
Less provision for unrealised profit	(7,000)	35,000
Total inventory		64,000
Current liabilities		
Accrued factory insurance		500

Check: $42,000 - 7,000 = 35,000$, and 35,000 is the cost of the finished goods ($35,000 \times 120/100 = 42,000$). Total inventory: $21,000 + 8,000 + 35,000 = 64,000$.

Key terms

Term	Meaning
Manufacturing account	Statement that calculates the cost of production of goods completed in a period.
Direct materials	Raw materials that become part of the product; charged at the cost consumed, not the cost bought.
Direct labour	Wages of workers who make the product.
Direct expenses	Expenses traceable to units made, such as royalties per unit.
Prime cost	Total of direct materials, direct labour and direct expenses.
Factory overheads	Indirect costs of running the factory.
Apportionment	Splitting a shared cost between factory and office on a stated basis.
Work in progress	Partly finished goods, valued at cost incurred so far.
Cost of production	Prime cost + factory overheads + opening WIP, less closing WIP.

Transfer price	Cost of production plus manufacturing profit, the value at which finished goods pass to the trading section.
Manufacturing profit	The mark-up added to cost of production; credited to the profit and loss section.
Provision for unrealised profit	The manufacturing profit contained in closing finished goods inventory; deducted from inventory in the statement of financial position.
Unrealised profit	Profit recorded on goods that have not yet been sold to an outside customer.
Carriage inwards	Cost of transporting purchases to the business; added to purchases of raw materials.
Returns outwards	Raw materials sent back to suppliers; deducted from purchases.
Cost of sales	Opening finished goods + cost of production (or transfer price), less closing finished goods.
Gross profit	Revenue less cost of sales.
Make-or-buy decision	Comparing the cost of production per unit with an outside supplier's price.

Practice

1. Saleem Ceramics makes pottery. The following information is available for the year ended 30 June 2026.

Item	\$
Inventory of raw materials at 1 July 2025	12,400
Inventory of raw materials at 30 June 2026	14,100
Work in progress at 1 July 2025	5,800
Work in progress at 30 June 2026	6,300
Purchases of raw materials	98,600
Carriage inwards	2,300
Direct wages	57,200
Direct expenses	3,100
Factory indirect wages	18,900
Factory rent	15,000
Factory light and heat	6,400
Depreciation of factory plant	9,000
Factory supervisor's salary	21,500

Prepare the manufacturing account for the year ended 30 June 2026, showing clearly the cost of raw materials consumed, prime cost, total factory overheads and cost of production. [12]

2. Nadia Textiles manufactures bed linen and transfers finished goods to the trading section at cost of production plus 25%. The following balances were extracted at 31 March 2026.

Item	\$
Inventory at 1 April 2025: raw materials	27,500
Inventory at 1 April 2025: work in progress	11,200
Inventory at 1 April 2025: finished goods (at transfer price)	40,800
Purchases of raw materials	213,400
Returns outwards of raw materials	3,400
Carriage inwards	5,600
Direct wages	118,000
Royalties	7,500
Factory indirect wages	42,300
Rent and rates	36,000
Factory power	19,700
Insurance	9,600
Factory machinery at cost	150,000
Office equipment at cost	20,000
Revenue	620,000
Office salaries	58,000
Distribution costs	27,900
Provision for unrealised profit at 1 April 2025	8,160

Additional information at 31 March 2026:

1. Inventory: raw materials \$25,900; work in progress \$13,300; finished goods at transfer price \$46,800.
 2. Direct wages of \$2,000 were accrued.
 3. Rent and rates of \$4,000 were prepaid. Rent and rates are apportioned three quarters to the factory and one quarter to the office.
 4. Insurance is apportioned two thirds to the factory and one third to the office.
 5. Factory machinery and office equipment are both depreciated at 10% per annum on cost.
- (a) Prepare the manufacturing account for the year ended 31 March 2026. [14]
 (b) Prepare the income statement for the year ended 31 March 2026. [10]
 (c) Calculate the total value of inventory to be shown in the statement of financial position at 31 March 2026. [3]
3. Imran Engineering transfers finished goods to its trading section at cost plus 20%. Finished goods inventory valued at transfer price was \$33,600 on 1 January 2025 and \$28,800 on 31 December 2025.
- (a) Calculate the provision for unrealised profit required at 1 January 2025 and at 31 December

2025. [4]

(b) Prepare the journal entry to record the change in the provision for the year ended 31 December 2025. A narrative is not required. [3]

(c) State the value at which finished goods inventory will appear in the statement of financial position at 31 December 2025. [2]

(d) Explain why a provision for unrealised profit is required. [3]

4. State two differences between direct costs and factory overheads, and give one example of each type of cost. [4]

5. Explain how opening and closing work in progress are treated in the manufacturing account and why. [4]

6. Kamran manufactures 15,000 identical units a year. In the year just ended his prime cost was \$184,000 and his factory overheads were \$61,000, of which \$38,000 was depreciation of machinery and factory rent. Work in progress was \$9,500 at the start of the year and \$10,000 at the end. A supplier has offered to sell him the same units for \$16.00 each.

(a) Calculate the cost of production and the cost of production per unit. [4]

(b) Evaluate whether Kamran should accept the supplier's offer. [6]

Answer 1

Saleem Ceramics: Manufacturing account for the year ended 30 June 2026	\$	\$
Opening inventory of raw materials	12,400	
Add purchases of raw materials	98,600	
Add carriage inwards	2,300	
	113,300	
Less closing inventory of raw materials	(14,100)	
Cost of raw materials consumed		99,200
Direct wages		57,200
Direct expenses		3,100
Prime cost		159,500
Factory overheads:		
Indirect wages	18,900	
Rent	15,000	
Light and heat	6,400	
Depreciation of plant	9,000	
Supervisor's salary	21,500	
Total factory overheads		70,800
		230,300

Add opening work in progress	5,800
	236,100
Less closing work in progress	(6,300)
Cost of production	229,800

Workings: $12,400 + 98,600 + 2,300 = 113,300$; $113,300 - 14,100 = 99,200$. Prime cost $99,200 + 57,200 + 3,100 = 159,500$. Overheads $18,900 + 15,000 + 6,400 + 9,000 + 21,500 = 70,800$. $159,500 + 70,800 = 230,300$; $+ 5,800 = 236,100$; $- 6,300 = 229,800$.

Answer 2

Adjustments first. Direct wages = $118,000 + 2,000$ accrued = $120,000$. Rent and rates for the year = $36,000 - 4,000$ prepaid = $32,000$; factory $3/4 = 24,000$, office $1/4 = 8,000$ (check $24,000 + 8,000 = 32,000$). Insurance: factory $2/3 \times 9,600 = 6,400$, office $1/3 \times 9,600 = 3,200$ (check $6,400 + 3,200 = 9,600$). Depreciation: factory machinery $150,000 \times 10\% = 15,000$; office equipment $20,000 \times 10\% = 2,000$.

(a)

Nadia Textiles: Manufacturing account for the year ended 31 March 2026	\$	\$
Opening inventory of raw materials	27,500	
Add purchases of raw materials	213,400	
Less returns outwards	(3,400)	
Add carriage inwards	5,600	
	243,100	
Less closing inventory of raw materials	(25,900)	
Cost of raw materials consumed		217,200
Direct wages ($118,000 + 2,000$)		120,000
Royalties		7,500
Prime cost		344,700
Factory overheads:		
Indirect wages	42,300	
Rent and rates ($3/4 \times 32,000$)	24,000	
Power	19,700	
Insurance ($2/3 \times 9,600$)	6,400	
Depreciation of machinery ($10\% \times 150,000$)	15,000	
Total factory overheads		107,400
		452,100
Add opening work in progress		11,200

	463,300
Less closing work in progress	(13,300)
Cost of production	450,000
Manufacturing profit (450,000 × 25%)	112,500
Transfer price of finished goods	562,500

Workings: $27,500 + 213,400 = 240,900$; $- 3,400 = 237,500$; $+ 5,600 = 243,100$; $- 25,900 = 217,200$. Prime cost $217,200 + 120,000 + 7,500 = 344,700$. Overheads $42,300 + 24,000 + 19,700 + 6,400 + 15,000 = 107,400$. $344,700 + 107,400 = 452,100$; $+ 11,200 = 463,300$; $- 13,300 = 450,000$. Mark-up $450,000 \times 25/100 = 112,500$; $450,000 + 112,500 = 562,500$.

(b) Provision for unrealised profit at 31 March 2026 = $46,800 \times 25/125 = 9,360$. Provision at 1 April 2025 = 8,160 (check: $40,800 \times 25/125 = 8,160$). Increase = $9,360 - 8,160 = 1,200$.

Nadia Textiles: Income statement for the year ended 31 March 2026	\$	\$
Revenue		620,000
Opening inventory of finished goods	40,800	
Add transfer price of finished goods	562,500	
	603,300	
Less closing inventory of finished goods	(46,800)	
Cost of sales		(556,500)
Gross profit		63,500
Add manufacturing profit		112,500
		176,000
Less increase in provision for unrealised profit		(1,200)
		174,800
Less expenses:		
Office salaries	58,000	
Rent and rates ($1/4 \times 32,000$)	8,000	
Insurance ($1/3 \times 9,600$)	3,200	
Depreciation of office equipment	2,000	
Distribution costs	27,900	
Total expenses		(99,100)
Profit for the year		75,700

Workings: $40,800 + 562,500 = 603,300$; $- 46,800 = 556,500$; $620,000 - 556,500 = 63,500$; $+ 112,500 = 176,000$; $- 1,200 = 174,800$. Expenses $58,000 + 8,000 + 3,200 + 2,000 + 27,900 = 99,100$. $174,800 - 99,100 = 75,700$.

(c) Raw materials 25,900 + work in progress 13,300 + finished goods at cost (46,800 – 9,360 = 37,440) = 76,640. Check: $37,440 \times 125/100 = 46,800$.

Answer 3

(a) Mark-up 20%, so profit in inventory = transfer value $\times 20/120$. At 1 January 2025: $33,600 \times 20/120 = 5,600$. At 31 December 2025: $28,800 \times 20/120 = 4,800$.

(b) The provision has fallen by $5,600 - 4,800 = 800$. Journal: Dr Provision for unrealised profit 800; Cr Income statement 800. The decrease is added to profit for the year.

(c) $28,800 - 4,800 = 24,000$ (check: $24,000 \times 120/100 = 28,800$).

(d) The closing finished goods are valued at transfer price, which includes manufacturing profit. That profit has not been realised because the goods have not been sold to a customer. Inventory must be valued at the lower of cost and net realisable value, so the profit element must be removed; the provision reduces the inventory to cost in the statement of financial position and stops profit for the year being overstated.

Answer 4

Any two differences: direct costs can be traced to individual units of product while overheads cannot; direct costs normally vary with output while many overheads are fixed for the period; direct costs make up prime cost while overheads are added after prime cost in the manufacturing account. Examples: direct cost, the wages of a machine operator or the timber used in a chair; factory overhead, the factory supervisor's salary, factory rent or depreciation of machinery.

Answer 5

Opening work in progress is added to the total of prime cost and factory overheads, because those partly made goods were completed during the year, so the cost already spent on them forms part of the cost of goods completed this year. Closing work in progress is deducted, because the cost spent on goods still unfinished at the year end has not produced completed goods and is carried forward to next year. The result is the cost of production of goods actually completed in the year.

Answer 6

(a) Cost of production = $184,000 + 61,000 + 9,500 - 10,000 = 244,500$. Workings: $184,000 + 61,000 = 245,000$; $+ 9,500 = 254,500$; $- 10,000 = 244,500$. Cost per unit = $244,500 \div 15,000 = \$16.30$.

(b) On the face of it buying is cheaper: $16.30 - 16.00 = \$0.30$ per unit, or $15,000 \times 0.30 = \$4,500$ a year. But \$38,000 of the overheads is depreciation and rent, which will continue whether or not the factory produces. If the business buys in, the avoidable cost of making is only $244,500 - 38,000 = 206,500$, or \$13.77 per unit, so buying at \$16.00 would make the business worse off by $15,000 \times 16.00 - 206,500 = 240,000 - 206,500 = \$33,500$ a year unless the factory and machinery can be sold or used for something else. Other factors: the supplier's reliability, quality and future prices; redundancy costs and loss of skilled workers; loss of control over production; whether the freed capacity could earn a contribution elsewhere. On the figures given, Kamran should continue to manufacture.