

# SOLUTIONS TO SELF-ASSESSMENT QUESTIONS

## SELF-ASSESSMENT QUESTION 1.1

### Statement of cash flows for day 1

	\$
Opening balance (cash introduced)	120
Sale of orange juice ( $70 \times \$2.40$ )	168
	288
Purchase of orange juice ( $80 \times \$1.50$ )	120
Closing balance	168

### Statement of financial performance (income statement) for day 1

	\$
Sales ( $70 \times \$2.40$ )	168
Cost of goods sold ( $70 \times \$1.50$ )	105
Profit	63

### Statement of financial position (balance sheet) at the end of day 1

	\$
Cash (closing balance)	168
Inventory (stock of goods for resale— $10 \times \$1.50$ )	15
Total assets	183
Helen's wealth in the business (equity)	183

Note that the profit has led to an increase in wealth (\$63). In this particular business, all of the business wealth is the entitlement of Helen, so her equity can be seen to be \$183 (original \$120 plus profit of \$63).

### Statement of cash flows for day 2

	\$
Opening balance (i.e. closing balance from day 1)	168
Sale of orange juice ( $65 \times \$2.40$ )	156
	324
Purchase of orange juice ( $60 \times \$1.50$ )	90
Closing balance	234

**Statement of financial performance for day 2**

	\$
Sales (65 × \$2.40)	156
Cost of goods sold (65 × \$1.50)	97.50
Profit	58.50

**Statement of financial position  
(balance sheet) at the end of day 2**

	\$
Cash	234
Inventory (stock of goods for resale—5 × \$1.50)	7.50
Total assets	241.50
Helen's wealth in the business (equity)	241.50

The wealth is the opening balance of \$183 plus the profit of \$58.50.

**Statement of cash flows for day 3**

	\$
Opening balance (from day 2)	234
Sale of orange juice (20 × \$2.40 + 45 × \$1.20)	102
	336
Purchase of orange juice (60 × \$1.50)	90
Closing balance	246

**Statement of financial performance for day 3**

	\$
Sales (20 × \$2.40 + 45 × \$1.20)	102
Cost of goods sold (65 × \$1.50)	97.50
Profit	4.50

**Statement of financial position at the end of day 3**

	\$
Cash	246
Inventory	0
Total assets	246
Helen's wealth in the business (equity)	246

The opening balance of wealth was \$241.50 plus the profit of \$4.50 which gives \$246.

## SELF-ASSESSMENT QUESTION 2.1

### Statement of financial position

as at the end of the week

Bank (-43,000 + 11,000 + 18,000 + 100,000 - 13,000 - 2,000)	71,000	Accounts payable (23,000 + 14,000 - 13,000)	24,000
Accounts receivable (33,000 + 23,000 - 18,000)	38,000		
Inventory (28,000 - 8,000 - 17,000 + 14,000)	17,000		
Motor van	10,000		
Furniture and fittings	63,000		
Freehold premises	145,000	Capital (203,000 + 11,000 - 8,000 + 23,000 - 17,000 + 100,000 + 10,000 - 2,000)	320,000
	344,000		344,000

Which can be rewritten as follows:

### Statement of financial position

as at the end of the week

	\$	\$
<i>Current assets</i>		
Cash at bank	71,000	
Trade debtors	38,000	
Inventory	17,000	
		126,000
<i>Non-current assets</i>		
Motor van	10,000	
Furniture and fittings	63,000	
Freehold premises	145,000	
		218,000
		344,000
<i>Current liabilities</i>		
Trade creditors		24,000
<i>Capital (owners' equity)</i>		320,000
		344,000

## SELF-ASSESSMENT QUESTION 2.2

Your report should consider the following relationships:

Aspect	Ratio	A	B	C
(a) Liquidity	Current assets/ current liabilities	1.67 x	3.0 x	7.0 x
(b) Solvency	Debt/assets	50%	30%	70%
	NCL/OE	40%	29%	200%
(c) Asset mix	CL/TA	30%	10%	10%
	CA/TA	50%	30%	70%
	CL/TA	30%	10%	10%

In your report you may raise the following:

- (a) Liquidity: All companies have current assets in excess of current liabilities. In the case of firm A, they may have problems meeting short-term claims. In the case of the other two firms, there appears to be excess short-term liquidity.
- (b) Solvency: Firm C has the highest level of debt and relies heavily on non-current liabilities, while firm B has the lowest level of debt and relies heavily on ownership funding.  
Firm A is using a much greater proportion of current (short-term) liabilities to fund total assets; this can create problems in relation to servicing and repaying debt.
- (c) Asset mix: Firm C has a very high proportion of its assets tied up in cash, debtors and inventory (current assets), while firm B has a much lower proportion of current assets to total assets. Excess current assets tend to indicate the existence of unproductive resources (cash, inventory, receivables).

### SELF-ASSESSMENT QUESTION 3.1

#### TT MOTORS Statement of financial position as at 31 December 2017

	+	-	Net		+	-	Net
<i>Current assets</i>				<i>Current liabilities</i>			
Cash	70,000	25,000	750	Accounts payable	143,000	121,000	22,000
	35,000	500					
	132,000	1,200					
		32,000					
		33,500					
		1,650					
		12,000					
		121,000					
		9,400					
Accounts receivable	152,000	132,000	19,600	Accruals	630		1,250
		400			620		
Prepayments	5,000		5,300	<i>Capital</i>	70,000		95,400
	300			Profit	25,400		
Inventory	143,000	74,000	65,000				
	12,000	16,000					
<i>Non-current assets</i>							
Delivery vehicle	32,000	4,000	28,000				
<i>Total assets</i>			118,650	<i>Total liabilities and owners' equity</i>			118,650

<b>TT MOTORS</b>							
<b>Income statement</b>							
for the year ended 31 December 2017							
	+	-	Net		+	-	Net
Cost of sales	74,000		90,000	Sales	152,000		187,000
	16,000				35,000		
Rent	20,000*		20,000				
Rates	500		1,400				
	900**						
Wages	33,500		34,130				
	630						
Electricity	1,650		2,270				
	620						
Bad debts	400		400				
Vehicle depreciation	4,000		4,000				
Vehicle expenses	9,400		9,400				
			161,600				
Net profit			25,400				
			187,000				187,000

\* An alternative approach would have been to show the \$25,000 initially as an expense, and at the year-end transfer \$5,000 of this to the prepayment.

\*\*An alternative approach would have been to show the \$1,200, and subsequently transfer \$300 to the prepayment.

### SELF-ASSESSMENT QUESTION 3.2

<b>PEAR LTD</b>		
<b>Income statement</b>		
for the year ended 30 September 2017		
	\$'000	\$'000
Sales (1,456 + 18)		1,474
Cost of sales		768
Gross profit		706
Less expenses		
Salaries	220	
Depreciation (249 + 12)	261	
Other operating expenses (131 + (2% × 200 = 4) + 2)	137	
		618
Operating profit		88
Interest expense (15 + 15)		30
Profit before tax		58
Taxation (58 × 30%)		17
Profit after tax		41
Dividends proposed		25
Profit retained for the year		16

**PEAR LTD**  
**Statement of financial position**  
as at 30 September 2017

	\$'000	\$'000
<i>Current assets</i>		
Cash at bank	21	
Accounts receivable (182 + 18 - 4)	196	
Inventory	207	
		424
<i>Non-current assets</i>		
Cost (1,570 + 30)	1,600	
Accumulated depreciation (690 + 12)	(702)	
		898
<b>Total assets</b>		<b>1,322</b>
<i>Current liabilities</i>		
Bank overdraft	105	
Tax payable	17	
Accounts payable	88	
Other payables (20 + 30 + 15 + 2)	67	
Dividends payable	25	
		302
<i>Non-current liabilities</i>		
10% debentures—repayable 2020		300
<b>Total liabilities</b>		<b>602</b>
<i>Shareholders' equity</i>		
Paid-up capital	600	
Retained profit (104 + 16)	120	
		720
<b>Total liabilities and shareholders' equity</b>		<b>1,322</b>

### SELF-ASSESSMENT QUESTION 4.1

#### JONATHAN & CO.

Cash					
Jan 1	Balance b/d	15,000		Purchases	100,000
	Sales	210,000		Payables	105,000
	Receivables	110,000		Interest	2,800
				Wages	40,000
				Other expenses	15,000
				Drawings	15,000
			Dec 31	Balance c/d	57,200
		335,000			335,000
Receivables					
Jan 1	Balance b/d	20,000		Cash	110,000
	Sales	120,000		Bad debts	5,000
			Dec 31	Balance c/d	25,000
		140,000			140,000
Dec 31	Balance b/d	25,000			
Inventory					
Jan 1	Balance b/d	25,000		Cost of sales	200,000
Jan 1	Cash	100,000	Dec 31	Balance c/d	25,000
	Payables	100,000			
		225,000			225,000
Dec 31	Balance b/d	25,000			

<b>Fixtures—cost</b>					
Jan 1	Balance b/d	10,000			
<b>Premises</b>					
Jan 1	Balance b/d	50,000			
<b>Payables</b>					
Dec 31	Cash	105,000	Jan 1	Balance b/d	25,000
	Balance c/d	20,000		Purchases	100,000
		125,000			125,000
			Dec 31	Balance b/d	20,000
<b>Loan</b>					
			Jan 1	Balance b/d	40,000
<b>Capital</b>					
Dec 31	Drawings	15,000		Balance b/d	55,000
	Balance c/d	112,400		Vehicle	14,000
			Dec 31	Profit and loss	58,400
		127,400			127,400
			Dec 31	Balance b/d	112,400
<b>Sales</b>					
Dec 31	Profit and loss	330,000		Receivables	120,000
				Cash	210,000
		330,000			330,000
<b>Bad debts</b>					
	Receivables	5,000	Dec 31	Profit and loss	5,000
<b>Cost of sales</b>					
	Inventory	200,000	Dec 31	Profit and loss	200,000
<b>Interest</b>					
	Cash	2,800	Dec 31	Profit and loss	2,800
<b>Wages</b>					
Dec 31	Cash	40,000	Dec 31	Profit and loss	41,000
	Accrued wages	1,000			
		41,000			41,000
<b>Other expenses</b>					
Dec 31	Cash	15,000	Dec 31	Other expenses—2018	100
	Other expenses—2018	900	Dec 31	Profit and loss	15,800
		15,900			15,900
<b>Drawings</b>					
	Cash	15,000	Dec 31	Capital	15,000
<b>Vehicle</b>					
	Capital	14,000			
<b>Depreciation expense—fixtures</b>					
Dec 31	Acc depreciation—fixtures	2,000	Dec 31	Profit and loss	2,000
<b>Accumulated depreciation—fixtures</b>					
			Dec 31	Depreciation	2,000
<b>Depreciation expense—premises</b>					
Dec 31	Acc depreciation—premises	5,000	Dec 31	Profit and loss	5,000
<b>Accumulated depreciation—premises</b>					
			Dec 31	Depreciation	5,000
<b>Accrued wages</b>					
			Dec 31	Wages	1,000
<b>Other expenses prepaid—2018</b>					
Dec 31	Other expenses	100			
<b>Other expenses accrued—2018</b>					
			Dec 31	Other expenses	900

Profit and loss					
Dec 31	Cost of sales	200,000		Sales	330,000
	Wages	41,000			
	Other expenses	15,800			
	Interest	2,800			
	Bad debts	5,000			
	Depreciation expense—fixtures	2,000			
	Depreciation expense—premises	5,000			
		271,600			
	Profit (to capital)	58,400			
		330,000			330,000

**Trial balance**  
*as at 31 December 2017*

	Dr	Cr
Cash	57,200	
Receivables		25,000
Inventory	25,000	
Fixtures—cost	10,000	
Premises	50,000	
Payables		20,000
Loan		40,000
Capital		69,000
Sales		330,000
Bad debts	5,000	
Cost of sales	200,000	
Interest	2,800	
Wages	40,000	
Other expenses	15,000	
Drawings	15,000	
Vehicle	14,000	
Depreciation expense—fixtures	2,000	
Acc depreciation—fixtures		2,000
Depreciation expense—premises	5,000	
Accumulated depreciation—premises		5,000
	466,000	466,000

**Profit and loss statement**  
*for the year ended 31 December 2017*

Sales	330,000	
Less cost of sales	200,000	
Gross profit		130,000
Less		
Wages	41,000	
Other expenses	15,800	
Depreciation—premises	5,000	
Depreciation—fixtures	2,000	
Bad debts	5,000	
Loan interest	2,800	
		71,600
Profit		58,400

**Balance sheet**  
as at 31 December 2017

<b>Current assets</b>		
Cash	57,200	
Receivables	25,000	
Prepaid other expenses	100	
Inventory	25,000	
		107,300
<b>Non-current assets</b>		
Premises—cost	50,000	
Less accumulated depreciation	(5,000)	
	45,000	
Fixtures—cost	10,000	
Less accumulated depreciation	(2,000)	
	8,000	
Vehicle	14,000	
		67,000
		174,300
<b>Current liabilities</b>		
Payables	20,000	
Accrued wages	1,000	
Accrued other expenses	900	
		21,900
<b>Non-current liabilities</b>		
Loan		40,000
<b>Capital</b>		
Opening balance	55,000	
Injections	14,000	
	69,000	
Profit	58,400	
	127,400	
Less drawings	15,000	
		112,400
		174,300

### SELF-ASSESSMENT QUESTION 5.1

1. The total of the sales book would be debited to the sales ledger control account and credited to the sales account. In addition, all of the detailed amounts would be debited to the appropriate individual debtor account. Remember, in this instance, the detailed entries are in a subsidiary ledger.
2. The total of the sales returns book would be debited to the sales returns account and credited to the sales ledger control account. As with sales, the detailed postings would be made to the individual account in the subsidiary (debtors) ledger.
3. The total of the purchases book would be debited to the purchases account and credited to the purchases ledger control account. In addition, all of the detailed amounts would be credited to the appropriate individual creditor account. Remember, in this instance, the detailed entries are in a subsidiary ledger.
4. The total of the purchases returns book would be debited to the purchases ledger control account and credited to the purchase returns account. As with purchases, the detailed postings would be made to the individual account in the subsidiary (creditors) ledger.

5. The total of the total column of the cash receipts journal would be debited to the cash account in the general ledger. The totals of each of the columns for cash sales and other revenues would be credited to the sales account and the other revenues account, respectively. The total of the discount allowed column would be debited to the discount allowed account and credited to the sales ledger control account. All of the amounts in the sales ledger and discount columns need to be posted (as credits) to the individual accounts in the subsidiary (debtors) ledger.
6. The total of the total column in the cash payments journal would be credited to cash in the general ledger. The total of the columns for administration, rent and rates, and marketing would be debited to accounts for these items. The total of the cash paid to creditors column would be debited to the purchases ledger control account, as would the total of the discount received column. The total of the discount received column would also be credited to the discount received account. All of the amounts in the purchases ledger column and the discount received column need to be posted (as debits) to the individual accounts in the subsidiary (creditors) ledger.
7. Contra entries, where a person is both a customer and a supplier and wants to offset one against the other, and bad debts, both of which will be journalised.
8. The control accounts are likely to include the following entries:

***Sales ledger control account***

Balance b/d	x	Sales returns	x
Sales	x	Cash	x
Contra	x	Discount allowed	x
Bad debts	x	Balance c/d	x
	x		x
Balance b/d	x		

***Purchases ledger control account***

Purchases returns	x	Balance b/d	x
Cash	x	Purchases	x
Discount received	x	Contra	x
Balance c/d	x		–
	x		x
		Balance b/d	x

9. It saves detailed posting from the cash receipts journal for cash sales, and other revenues, and enables totals to be used.  
For the cash payments journal postings are reduced because totals of the cash purchases, administration, rent and rates, and marketing can be posted to the appropriate account. In both cash journals the use of a separate discount column will make posting to the individual debtor or creditor accounts simpler and quicker.
10. Consideration needs to be given to developing systems which do not give too much power and authority to one person. For example, someone able to process an order, arrange payment of the order, and then record the transaction, would give inappropriate opportunity for fraud. Systems not only need to be devised so as to minimise the opportunities for fraud, but also need to be developed so that the work of one person acts as a check on the other. The use of control accounts provides one such check, so the person looking after the control accounts should normally not be involved in maintaining the individual customer or supplier accounts. Also, ideally, the posting of the subsidiary records should not be done by the person who maintains these records, nor should the person maintaining the cash journals be involved in the other activities. Of course, in small organisations such separation of duties may not be feasible, in which case some other ways of provision of oversight are needed.
11. Manipulation of records, embezzlement and fraud.

**SELF-ASSESSMENT QUESTION 6.1**

1. The summarised statement of financial position of Bonanza Ltd immediately following the rights and bonus issue is as follows:

<b>Statement of financial position</b>	
as at 31 December 2017	
<i>Net assets</i> (235 + 40 (cash from the rights issue))	\$275,000
Shareholders' equity	
Share capital	
100,000 shares at an issue price of \$1.30 each	130,000
50,000 shares at an issue price of \$2 (20,000 rights plus 30,000 bonus)	100,000
Retained profits	45,000
	<b>\$275,000</b>

Note that the bonus issue of 30,000 shares was issued at \$2 per share, so \$60,000 must be transferred. This is taken from the revaluation reserve first, as this is not distributable as a cash dividend, leaving \$23,000 to be taken from the retained profits. This leaves \$45,000 still available in retained profits—which is distributable as a cash dividend. If the bonus issue had all come from retained profits, only \$8,000 would have remained in a distributable reserve.

2. There may be pressure from a potential creditor/accounts payable for the company to limit its ability to pay dividends. This would place creditors/accounts payable in a more secure position because the maximum 'buffer' or safety margin, between the value of the assets and the amount owed by the company, is maintained. It is not unusual for potential creditors/accounts payable to insist on some measure to lock up shareholders' funds in this way, as a condition of granting the loan.
3. The summarised statement of financial position of Bonanza Ltd immediately following the rights and bonus issues (assuming a minimum dividend potential objective) is as follows:

<b>Statement of financial position</b>	
as at 31 December 2017	
<i>Net assets</i> (235 + 40 (cash from the rights issue))	\$275,000
Shareholders' equity	
Share capital	
100,000 shares at an issue price of \$1.30 each	130,000
50,000 shares at an issue price of \$2 (20,000 rights plus 30,000 bonus)	100,000
Revaluation reserve	37,000
Retained profits	8,000
	<b>\$275,000</b>

4. Before the bonus issue the maximum dividend was \$68,000. Now it is \$8,000. Thus, the bonus issue has the effect of locking up an additional \$60,000 of the assets of the company in terms of the company's ability to pay dividends.

5. *Lee's position*

Before the issues Lee had 100 shares, with a book value of \$2.35 (i.e. \$235,000/100,000), or \$235 in total.

Lee would be offered 20 shares in the rights issue at \$2 each, or \$40 in total. After the rights issue Lee would have a total of 120 shares, each worth \$2.2917 (i.e. \$275,000/120,000), or \$275 in total. The bonus issue would give 30 additional shares to Lee. After the bonus issue Lee would have 150 shares, each worth \$1.833 (i.e. \$275,000/150,000), or \$275 in total.

None of this affects Lee's wealth. Before the issues Lee had \$235 worth of shares and \$40 more in cash. After the issues Lee has the same total, but all \$275 is in the value of the shares.

## SELF-ASSESSMENT QUESTION 7.1

### I. CHING (BOOKSELLERS) LTD Statement of comprehensive income for the year ended 31 December 2017

	\$m
<b>Revenue</b>	943
Cost of sales	(460)
<b>Gross profit</b>	483
Distribution expenses	(110)
Administrative expenses	(212)
Other expenses	(25)
<b>Operating profit</b>	136
Finance charges	(40)
<b>Profit before tax</b>	96
Taxation	(24)
<b>Profit for the year</b>	72
<b>Other comprehensive income</b>	
Revaluation of property, plant and equipment	20
Foreign currency translation differences for foreign operations	(15)
Tax on other comprehensive income	(1)
Other comprehensive income for the year, net of tax	4
<b>Total comprehensive income for the year</b>	76

## SELF-ASSESSMENT QUESTION 7.2

(a)

- Dividends announced between the end of the reporting period and the date at which the financial reports are authorised for publication should *not* be treated as a liability in the statement of financial position at the end of that period. AASB 101 specifically precludes the treatment of such dividends as liabilities.
- AASB 101 provides support for three key accounting conventions—accruals, going concern and consistency. It does not specifically support the historic cost convention.
- AASB 101 does not permit bank overdrafts to be offset against positive bank balances when preparing the statement of financial position. For the sake of relevance, they should be shown separately.

(b) **Dali Ltd**

A striking feature of the segmental reports is that the car parts segment generates the highest revenue—more than the other two segments combined. Nevertheless, it is the aircraft parts segment that generates the highest profit. We can use some simple ratios at this point to help evaluate performance.

We can start by considering the profit generated in relation to the sales revenue for each operating segment. We can see from the table below that the boat parts segment generates the most profit in relation to sales revenue. Around 21%, or \$0.21 in every \$1, of profit is derived from the sales revenue generated. The total revenue for this segment, however, is much lower than for the other two segments. Although the car parts segment generates the most revenue, less than 6%, or \$0.06 in every \$1, of profit is derived from the sales revenue generated. It is worth noting that the aircraft parts segment suffered a large impairment charge during the year, which had a significant effect on profits. The reasons for this impairment charge should be investigated.

We can also compare the profit generated with the net assets employed (i.e. total assets less total liabilities) for each segment. We can see from the table below that the boat parts segment produces the best return on net

assets employed by far: around 82%, that is, \$0.82 for every \$1 invested. Once again, the car parts segment produces the worst results with a return of less than 24%.

The relatively poor results from the car parts segment may simply reflect the nature of the market in which it operates. Compared with car parts segments of other businesses, it may be doing very well. Nevertheless, the business may still wish to consider whether future investment would not be better directed to those areas where greater profits can be found.

The investment in non-current assets during the period in relation to the total assets held is much higher for the boat parts segment. This may reflect the faith of the directors in the potential of this segment.

The depreciation charge as a percentage of segment assets seems to be high for all of the operating segments – but particularly for the car parts division. This should be investigated as it may suggest poor buying decisions.

**Table of key results**

	Car parts	Aircraft parts	Boat parts
Total revenue	\$360m	\$210m	\$85m
Segment profit	\$20m	\$24m	\$18m
Net assets (assets less liabilities)	\$85m	\$58m	\$22m
Segment profit as a percentage of sales revenue	5.6%	11.4%	21.2%
Segment profit as a percentage of net assets employed	23.5%	41.4%	81.8%
Total assets	\$170m	\$125m	\$44m
Expenditure on non-current assets	\$28m	\$23m	\$26m
Depreciation	\$80m	\$55m	\$15m
Depreciation as a percentage of segment assets	47.1%	44.0%	34.1%

## SELF-ASSESSMENT QUESTION 8.1

### WORKINGS Deducing 'cash flows from operating activities'

Cash from customers

Opening balance of accounts receivable	115
plus sales for the period	591
gives the amount we might expect to receive for the year	706
less closing balance of accounts receivable	(123)
equals the cash received from customers	583

To this must be added any other operating income (adjusted for any related opening and closing balance amounts). This amounted to \$21 million, making cash from customers  $583 + 21 = \$604$  million.

### Cash paid to suppliers and employees

Opening balance of accruals	11
less opening balance of prepaid expenses	(6)
plus relevant expenses for the period	12*
gives the amount we might expect to pay for the year	17
plus closing balance of prepaid expenses	16
less closing balance of accruals	(15)
equals the cash paid for operating expenses for the year	18

\*\$91 million expenses less \$79 million amortisation and depreciation.

Opening inventory	44
plus purchases	x
equals the amount available for sale	44 + x
less closing inventory—the amount unsold	(41)
equals the cost of sales—the amount sold	307

We can calculate the figure for purchases (x) by solving:

$$44 + x - 41 = 307, \text{ so } x = 307 + 41 - 44 = 304$$

This figure can then be inserted in a table relating to accounts payable as shown below:

Opening balance of accounts payable	44
plus purchases of inventory for the period	304
gives the amount we might expect to pay for the year	348
less closing balance of accounts payable	(39)
equals the cash paid to accounts payable	309

The statement of cash flows is as follows:

<b>TORBRYAN LTD</b>		
<b>Statement of cash flows</b>		
for the year ended 30 June 2017		
	\$m	\$m
<i>Cash flows from operating activities</i>		
Cash receipts from customers (583 + 21)	604	
Cash paid to suppliers and employees (18 + 309)	(327)	
Interest paid	(23)	
Income taxes (2016 liability)	(32)	
Net cash provided by operating activities		222
<i>Cash flows from investing activities</i>		
Interest received	2	
Purchase of plant and fixtures (40 + 55)	(95)	
Net cash used in investing activities		(93)
<i>Cash flows from financing activities</i>		
Proceeds from issuance of share capital	90	
Repayment of long-term borrowings	(150)	
Dividends paid	(40)	
Net cash used in financing activities		(100)
Net increase in cash and cash equivalents held		29
Cash and cash equivalents at the beginning of the financial year		(12)
Cash and cash equivalents at the end of the financial year		17

The reconciliation between profit after tax and operating cash flows is as follows:

Profit after tax		147
Adjusted for:		
Add:		
Depreciation	72	
Amortisation	7	
Increase in accrued expenses	4	
Increase in tax liability	14	
Decrease in inventory	3	100
Subtract:		
Increase in accounts receivable	(8)	
Increase in prepaid expenses	(10)	
Interest received (not operating)	(2)	
Reduction in accounts payable	(5)	(25)
		222

## SELF-ASSESSMENT QUESTION 8.2

1.

<b>Workings</b>			
<i>Cash received from customers</i>			
			\$'000
Opening balance of accounts receivable			60
plus sales for the period			379
gives the amount we might expect to receive for the year			439
less closing balance of accounts receivable			80
equals the cash received from customers			359
<i>Cash paid to suppliers, etc.</i>			
Opening balance of accounts payable			100
plus purchases of inventory for the period			250
gives the amount we might expect to pay for the year			350
less closing balance of accounts payable			80
equals the cash paid to accounts payable			270

	Cost	Accumulated depreciation	Net
<i>Non-current assets</i>			
<b>Plant</b>			
Balance at the start of the year	50	30	20
plus new acquisitions	x = 20		20
less depreciation for the year	–	5	(5)
equals closing balance	70	35	35
<b>Vehicles</b>			
Balance at the start of the year	25	12	13
less any disposals	(10)	(6)	(4)
	15	6	9
plus new acquisitions	x = 15		15
less depreciation for the year	–	4	(4)
equals closing balance	30	10	20
<b>Premises</b>			
The increase of \$10,000 represents acquisitions.			

### Cash flow statement

for the year ended 31 December 2017

	\$m	\$m
	\$'000	\$'000
<i>Cash flows from operating activities</i>		
Cash receipts from customers	359	
Cash paid to suppliers and employees (270 + 44)	(314)	
Interest paid	(7)	
Income taxes (last year's liability)	(20)	
Net cash provided by operating activities		18
<i>Cash flows from investing activities</i>		
Purchase of property, plant and equipment (20 + 15 + 10)	(45)	
Proceeds from sale of property, plant and equipment	7	
Net cash used in investing activities		(38)
<i>Cash flows from financing activities</i>		
Repayments of long-term borrowing	(30)	
Proceeds from issue of share capital	20	
Dividends paid (last year's proposed)	(10)	
Net cash used in financing activities		(20)
Net decrease in cash and cash equivalents for the year		(40)
Cash and cash equivalents at the beginning of the financial year		50
Cash and cash equivalents at the end of the financial year		10

The reconciliation between profit after tax and operating cash flows is as follows:

Operating profit after tax (102 – 25)	77
Adjusted for:	
Depreciation (5 + 4)	9
Gain on sale (7 – 4)	(3)
Increase in accounts receivable	(20)
Increase in inventory	(30)
Reduction in accounts payable	(20)
Increase in tax liability	5
	18

2. There is a positive cash flow from operating activities, but the reconciliation shows that it could be higher. Specifically, we would expect inventory, accounts receivable and accounts payable all to be moving in the same direction. This raises questions as to why accounts payable were reduced. If the accounts payable had been maintained at the same level, cash flows would have been higher by \$20,000. Also, given that sales increased from \$350,000 to \$379,000, an increase of less than 10%, why did accounts receivable increase by a third and inventory by 30%? Serious questions about working capital management need to be asked.

In the investing area, a net \$38,000 has been spent on new non-current assets. In addition, the financing section reveals that new shares were issued, partially replacing the loan repaid.

The company has put itself under unnecessary pressure but certainly looks able to turn the cash flows around in the next year, depending on the plans for further acquisitions of non-current assets.

3. Estimates of profit can be made as follows:

The gross profit will increase next year by 20%, if the assumptions are correct.	
So gross profit will rise to (159 × 120%)	\$191,000
Other expenses will rise by 20% to	(\$52,800)
Depreciation on plant—assuming 10% on cost, will be (Note that cost of plant increases by \$30,000 to \$100,000)	(\$10,000)
Depreciation on vehicles—assuming 20% on cost	(\$11,000)
Loan interest—assuming 7%	(\$3,500)
Profit before tax	\$113,700
Income tax—assuming 30% rate	(\$34,110)
Dividends—assuming the same as last year	(\$15,000)
Added to retained profits	\$64,590

The statement of cash flows for next year, assuming the same working capital proportions, will look like:

<b>Statement of cash flows</b>		
for 2018		
<b>Operating flows</b>		
Profit after tax	\$79,590	
Plus depreciation	\$21,000	
Increase in inventory	(\$20,000)	
Increase in accounts receivable	(\$16,000)	
Increase in accounts payable	\$16,000	
Increase in tax payable	\$9,110	
		\$89,700
<b>Investing flows</b>		
Vehicles purchased	(\$25,000)	
Plant purchased	(\$30,000)	
		(\$55,000)
<b>Financing flows</b>		
Dividends	(\$15,000)	
		(\$15,000)
Net cash flow for the year		\$19,700
Opening balance		\$10,000
Closing balance		\$29,700

**Statement of financial position**

at end of 2018

<i>Current assets</i>	
Cash	29,700
Accounts receivable (20% increase)	96,000
Inventory (20% increase)	120,000
	245,700
<i>Non-current assets</i>	
Vehicles—cost (30 + 25)	55,000
Accumulated depreciation (10 + (20% × 55))	(21,000)
Plant—cost (70 + 30)	120,000
Accumulated depreciation (35 + 10)	(45,000)
Premises	120,000
	209,000
<i>Total assets</i>	454,700
<i>Current liabilities</i>	
Accounts payable (20% increase)	96,000
Dividends proposed	15,000
Income tax payable	34,110
	145,110
<i>Non-current liabilities</i>	
Loans	50,000
<i>Shareholders' equity</i>	
Paid-up ordinary capital	100,000
Retained profits (95 + 63)	159,590
	259,590
<i>Total liabilities and shareholders' equity</i>	454,700

These calculations suggest that liquidity is acceptable, though if necessary it could be improved by reducing the amount of inventory held, reducing the period of credit allowed to customers and slowing down payments of bills to suppliers. This area will be dealt with in more detail in Chapter 13. It would also be possible to further improve liquidity by borrowing to fund assets or leasing them.

**SELF-ASSESSMENT QUESTION 9.1**

**A sustainability report** provides financial and non-financial information that helps readers understand performance from a broad perspective, including economic, social and environmental perspectives.

**Why is sustainability reporting important for my clients?**

Pressure to comply with sustainable supply policies. There is an increasing need to demonstrate sustainability to attract and keep customers.

Stakeholder demands. These include finance providers, investors and customers who are increasingly interested in the broad impact of businesses.

Keeping up with competitors.

**What is my (auditor) role?**

Discussion with clients regarding the issues relating to sustainability.

Awareness of the issues and how they might impact on clients.

Providing assurance on sustainability reports.

Preparation for sustainability reporting.  
 Compilation of sustainability reports.  
 Data collection relating to sustainability reports.

## SELF-ASSESSMENT QUESTION 10.1

In order to answer this question you may have used the following ratios:

	A Ltd	B Ltd
Return on shareholders' funds	$= \frac{99.6}{687.6} \times 100$ = 14.58%	$= \frac{104.6}{874.6} \times 100$ = 11.96%
Return on capital employed	$= \frac{151.3}{877.6} \times 100$ = 17.24%	$= \frac{166.9}{1,224.6} \times 100$ = 13.63%
Gross profit	$= \frac{459}{1,478.1} \times 100$ = 31%	$= \frac{575.5}{1,790.4} \times 100$ = 32.14%
Inventory turnover	$= \frac{(450.8 + 592)/2}{1,018.3} \times 365$ = 192 days	$= \frac{(372.6 + 403)/2}{1,214.8} \times 365$ = 116 days
Receivables turnover	$= \frac{176.4}{1,478.1} \times 365$ = 43 days	$= \frac{321.9}{1,790.4} \times 365$ = 65 days
Payables turnover	$= \frac{271.4}{1,129.5} \times 365$ = 87 days	$= \frac{180.7}{1,245.3} \times 365$ = 53 days
Current ratio	$= \frac{869}{438.4}$ = 2.0 times	$= \frac{833.9}{310.5}$ = 2.7 times
Acid test ratio	$= \frac{(869 - 592)}{438.4}$ = 0.6 times	$= \frac{(833.9 - 403)}{310.5}$ = 1.4 times
Gearing ratio	$= \frac{190}{(687.6 + 190)} \times 100$ = 21.6%	$= \frac{250}{(874.6 + 250)} \times 100$ = 22.2%
Interest cover ratio	$= \frac{(131.9 + 19.4)}{19.4}$ = 7.8 times	$= \frac{(139.4 + 27.5)}{27.5}$ = 6.1 times
Dividend payout ratio	$= \frac{135.0}{99.9} \times 100$ = 135%	$= \frac{95.0}{104.6} \times 100$ = 91%
Earnings per share	$= \frac{99.9}{320}$ = 31.2¢	$= \frac{104.6}{250}$ = 41.8¢
Price/earnings ratio	$= \frac{\$6.50}{31.2¢}$ = 20.8 times	$= \frac{\$8.20}{41.8¢}$ = 19.6 times

A Ltd has a slightly higher return on shareholders' funds than B Ltd. It also has a higher return on capital employed. Given that the gross profits are similar, the differences must lie in the profit and loss section. The expenses listed below the gross profit figure are approximately one-third higher for B Ltd than for A Ltd, even though the sales are only about 20% higher.

The efficiency ratios show that inventory is held for 192 days on average by A Ltd, and for 116 days for B Ltd, which raises considerable questions regarding efficiency of inventory management. Management of receivables is better with A Ltd, with an average of 43 days collection period, compared with 65 days for B Ltd. Payables management for A Ltd is poor, with the business taking 87 days to pay, compared with 52 days for B Ltd. It is likely that the relationship between A Ltd and its suppliers is likely to be frosty.

A Ltd has a much lower current ratio and acid test ratio than that of B Ltd. The reasons for this may be partly due to the fact that A Ltd has a lower average settlement period for accounts receivable. The acid test ratio of A Ltd is substantially below 1.0. This may suggest a liquidity problem. This is reinforced by the amount of time that it takes A Ltd to pay its suppliers.

The gearing ratio of each company is quite similar. Neither company has excessive borrowing. The interest cover ratio for each company is also similar. The respective ratios indicate that both companies have good profit coverage for their interest charges.

The dividend payout ratio for each company seems very high indeed. In the case of A Ltd, the dividends announced for the year are considerably higher than the earnings generated during the year that are available for dividends. As a result, part of the dividend was paid out of retained profits from previous years. This is an unusual occurrence. Although it is quite legitimate to do this, such action may, nevertheless, suggest a lack of prudence on the part of the directors. The P/E ratio for both companies is high, which indicates market confidence in their future prospects.

## SELF-ASSESSMENT QUESTION 11.1

(a) With the existing revenue/cost structure, the sales needed to make a profit of \$30,000 can be calculated as follows:

Amount of contribution needed = fixed costs of \$150,000 + profit of \$30,000 = \$180,000

Contribution per unit = \$8

Therefore, sales needed =  $\$180,000/8 = 22,500$  units or \$450,000.

(b) The current contribution per unit is \$8.

Current fixed costs are \$150,000.

Therefore, current break-even point is  $150,000/8 = 18,750$  units.

(c)/(d)

(i) The proposal to launch an advertising campaign will increase fixed costs by \$50,000. The break-even point associated with this proposal thus will be  $(\$150,000 + \$50,000)/8 = 25,000$  units.

The sales level needed to make a profit of \$30,000 will be  $(\$150,000 + \$50,000 + \$30,000)/8 = 28,750$  units.

(ii) A reduction in selling price to \$19 will reduce the contribution per unit to \$7. The break-even point thus can be calculated as  $\$150,000/7 = 21,429$  units.

The sales level needed to make a profit of \$30,000 will be  $\$180,000/7 = 25,715$  units.

(iii) If variable costs can be reduced by \$1.50, the contribution will increase to \$9.50 per unit.

Fixed costs will increase to \$190,000.

The break-even point thus can be calculated as  $\$190,000/9.50 = 20,000$  units.

The sales level needed to make a profit of \$30,000 will be  $\$220,000/9.50 = 23,158$  units.

These results can be summarised as follows:

	Break-even	Profit of \$30,000
No change	18,750	22,500
Advertising campaign	25,000	28,750
Reduction in selling price	21,429	25,715
New equipment/reduced variable costs	20,000	23,158

This summary suggests that the third proposal is the best of the three, since it has the lowest break-even point and the lowest level of sales needed to make the desired profit. However, these results suggest that it would be better to maintain the existing revenue/cost structure, since this has lower figures than any of the proposals. Whether it will really prove possible to achieve the desired profit level is another matter.

How the various proposals affect sales figures must be examined. If there is no particular reason to suppose that sales will increase above 15,000 units if the existing revenue/cost structure is maintained, the relevant profit figures will be:

Current position	Loss	\$30,000
Proposal 3 (contribution of 15,000 × \$9.50) less \$190,000 fixed costs	Loss	\$47,500

The difference is caused by an increase in contribution of \$22,500 (15,000 × \$1.50) less the increase in fixed costs of \$40,000.

## SELF-ASSESSMENT QUESTION 11.2

(a) The answer is to subcontract. The relevant cost of internal production of each component is:

	\$
Variable cost of production of the component	15
Opportunity cost of lost production of the other product	12
	27

This is obviously more costly than the \$20 per component charged by the subcontractor, so the component should be subcontracted.

(b)(i) The break-even point if only product A were made would be:

Fixed costs/(Sales revenue per unit – Variable cost per unit) = \$400,000/(\$300 – (150 + 60)) = 44,450 units (per annum).

(ii)

Product	A (per unit) \$	B (per unit) \$	C (per unit) \$
Selling price	300	390	200
Variable materials	(150)	(180)	(100)
Variable production costs	(60)	(100)	(50)
Contribution	90	110	50
Time on machines (hours)	2	3	1
Contribution per hour on machines	45.0	36.7	50.0
Order of priority	2nd	3rd	1st

(iii)

		Contributions (\$)
Produce:		
5,000 product C using	5,000 hours generating	250,000
2,500 product A using	5,000 hours generating	225,000
	10,000 hours	475,000
Less fixed costs		400,000
Profit		75,000

Leaving a demand for 500 units of product A and 2,000 units of product B unsatisfied.

## SELF-ASSESSMENT QUESTION 12.1

(a) Full cost (present basis)

### PSILIS LTD

	Basic \$		Super \$	
Direct labour (all \$20/hour)	40.00	(2 hours)	60.00	(3 hours)
Direct material	15.00		20.00	
Overheads	18.20	(\$9.10* × 2)	27.30	(\$9.10* × 3)
	73.20		107.30	

\*Total direct labour hours worked = (40,000 × 2) + (10,000 × 3) = 110,000 hours.

Overhead recovery rate = \$1,000,000/110,000 = \$9.10 per direct labour hour.

Thus, the selling prices are currently:

Basic: \$73.20 + 25% = \$91.50

Super: \$107.30 + 25% = \$134.13

(b) Full cost (activity cost basis)

Here, the cost of each cost-driving activity is apportioned between total production of the two products.

Activity	Cost \$'000	Basis of apportionment	Basic \$'000		Super \$'000	
Machine set-ups	280	Number of set-ups	56	(20/100)	224	(80/100)
Quality inspection	220	Number of inspections	55	(500/2,000)	165	(1,500/2,000)
Sales order processing	240	Number of orders processed	72	(1,500/5,000)	168	(3,500/5,000)
General production	260	Machine hours	182	(350/500)	78	(150/500)
Total	1,000		365		635	

The overheads per unit are:

Basic:  $\frac{\$365,000}{40,000} = \$9.13$

Super:  $\frac{\$635,000}{10,000} = \$63.50$

Thus, on an activity basis the full costs are as follows:

	Basic \$		Super \$	
Direct labour (all \$20/hour)	40.00	(2 hours)	60.00	(3 hours)
Direct material	15.00		20.00	
Overheads	9.13		63.50	
Full cost	64.13		143.50	
Current selling price	91.50		134.13	

(c) It seems that the Supers are being sold for less than they cost to produce. If the price cannot be increased, there is a very strong case for abandoning this product. At the same time, the Basics are very profitable to the extent that it may be worth considering lowering the price to attract more sales revenue.

The fact that the overhead costs can be related to activities and, more specifically, to products does not mean that abandoning Super production would lead to immediate overhead cost savings. For example, it may not be possible or desirable to dismiss machine-setting staff overnight. It would certainly rarely be possible to release factory space occupied by machine setters and make immediate cost savings. Nevertheless, in the medium term these costs can be avoided and it may be sensible to do so.

## SELF-ASSESSMENT QUESTION 12.2

(a) Job costing basis

### HECTOR AND CO. LTD

			\$
Materials:	Metal wire	$1,000 \times 2 \times \$6.60^*$	13,200
	Fabric	$1,000 \times 0.5 \times \$3.00^*$	1,500
Labour:	Skilled	$1,000 \times (10/60) \times \$36.00$	6,000
	Unskilled	$1,000 \times (5/60) \times \$22.50$	1,875
Indirect cost		$1,000 \times (15/60) \times (150,000/12,500)$	3,000
Total cost			25,575
Profit loading			3,198
Total tender price			28,773

\*In the traditional approach to full costing, historic costs of materials tend to be used. It would not necessarily have been incorrect to have used the 'relevant' (opportunity) costs here.

(b) Minimum contract price (relevant cost basis)

			\$
Materials:	Metal wire	$1,000 \times 2 \times \$7.50$ (replacement cost)	15,000
	Fabric	$1,000 \times 0.5 \times \$1.20$ (scrap value)	600
Labour:	Skilled	(there is no effective cost of skilled staff)	–
	Unskilled	$1,000 \times 5/60 \times \$22.50$	1,875
Minimum tender price			17,475

The difference between the two prices is partly that the relevant costing approach tends to look to the future, partly that it considers opportunity costs and partly that the job costing basis total has a profit loading.

## SELF-ASSESSMENT QUESTION 13.1

Your answer should be along the following lines:

(a)

<b>Projected income statement</b>		
for the six months ended 31 May 2018		
	\$'000	\$'000
Sales		1,130
Less cost of sales (balancing figure) (see note 1)		791
Gross profit (30% of sales)		339
Wages	252	
Selling expenses (excluding advertising campaign) (see note 2)	48	
Administration expenses (including depreciation of 24)	76	
		376
<b>Net loss</b>		<b>37</b>

Notes:

- Cost of sales = 70% of sales = \$791,000.  
Opening inventory + Purchases – Closing inventory = Cost of sales  
So  $142 + 850 - x = 791$   
so  $x$  (Closing inventory) =  $142 + 850 - 791 = 201$
- The advertising campaign relates to the next financial period and will, therefore, be charged to the income statement of that period.

(b)

<b>Statement of cash flows</b>		
for the six months ended 31 May 2018		
	\$'000	\$'000
<i>Cash flows from operating activities</i>		
Net loss	(37)	
add non-cash expenses related to non-current assets e.g. depreciation	24	
adjust for changes over the period in non-cash current assets/current liabilities		
Increase in inventory	(59)	
Increase in accounts receivable	(20)	
Increase in prepayments (advertising)	(12)	
Increase in accounts payable	15	
equals the cash flow from operating activities		(89)
<i>Cash flows from investing activities</i>		
Purchase of non-current assets	(28)	
Proceeds from sale of property, plant and equipment	–	
Net cash used in investing activities		(28)
<i>Cash flows from financing activities</i>		
Proceeds from issue of share capital	–	
Proceeds from long-term borrowings	–	
Repayment of long-term borrowings	–	
Dividends paid	(20)	
Net cash used in financing activities		(20)
<i>Net decrease in cash and cash equivalents held</i>		(137)
<i>Cash and cash equivalents at the beginning of the year</i>		(126)
<i>Cash and cash equivalents at the end of the year</i>		(263)

(c)

<b>Statement of financial position</b>			
as at 31 May 2018			
	\$'000	\$'000	Notes
<i>Current assets</i>			
Accounts receivable	140		70% of May's sales
Prepaid advertising	12		
Inventory	201	353	See note 1 above
<i>Non-current assets</i>			
Fixtures and fittings at cost	202		Increase of \$28,000
Less accumulated depreciation	56	146	Increase of \$18,000
Freehold land and premises at cost	250		
Less accumulated depreciation	30	220	Increase of \$6,000
<i>Total assets</i>		719	
<i>Current liabilities</i>			
Bank overdraft	263		From cash flow
Accounts payable	160		May's purchases
Income tax payable	24		Due in August
Dividends payable	–	447	Paid in December
<i>Shareholders' equity</i>			
Paid-up capital (issued at \$1 each)	200		
Retained profits	72	272	109 – 37
<i>Total liabilities and shareholders' equity</i>		719	

(d) You may have thought of a number of possible options. The following (or perhaps some combination of these) might be feasible:

- new equity finance injected by the Dalglish family or others
- reduce inventory levels
- delay purchase/payment of fixtures
- sell non-current assets
- increase proportion of cash sales
- reduce period of credit to customers (accounts receivable)
- delay payments to suppliers (accounts payable).

*Note:* The Dalglish family has ruled out the possibility of raising a loan.

Each of the above options has advantages and disadvantages and these must be carefully assessed before a final decision is made.

## SELF-ASSESSMENT QUESTION 13.2

**Raw materials inventory budget for the six months ending 31 December (in units):**

	July	Aug	Sep	Oct	Nov	Dec
Opening balance (current month's production)	500	600	600	700	750	750
Purchases (balancing figure)	600	600	700	750	750	750
	1,100	1,200	1,300	1,450	1,500	1,500
Less issued to production (from question)	500	600	600	700	750	750
Closing balance (next month's production)	600	600	700	750	750	750

**Raw materials inventory budget for the six months ending 31 December (in financial terms):**

	July	Aug	Sep	Oct	Nov	Dec
Opening balance	4,000	4,800	4,800	5,600	6,000	6,000
Purchases	4,800	4,800	5,600	6,000	6,000	6,000
	8,800	9,600	10,400	11,600	12,000	12,000
Less issued to production	4,000	4,800	4,800	5,600	6,000	6,000
Closing balance	4,800	4,800	5,600	6,000	6,000	6,000

**Accounts payable budget for the six months ending 31 December:**

	July	Aug	Sep	Oct	Nov	Dec
Opening balance (current month's payment)	4,000	4,800	4,800	5,600	6,000	6,000
Purchases (from raw materials inventories budget)	4,800	4,800	5,600	6,000	6,000	6,000
	8,800	9,600	10,400	11,600	12,000	12,000
Less payments	4,000	4,800	4,800	5,600	6,000	6,000
Closing balance (next month's payment)	4,800	4,800	5,600	6,000	6,000	6,000

**Cash budget for the six months ending 31 December:**

	July	Aug	Sep	Oct	Nov	Dec
<i>Inflows</i>						
Receipts from accounts receivable	2,800	3,200	3,200	4,000	4,800	5,200
Cash sales	4,800	6,000	7,200	7,800	8,400	9,600
Total inflows	7,600	9,200	10,400	11,800	13,200	14,800

	July	Aug	Sep	Oct	Nov	Dec
<i>Outflows</i>						
Payment to accounts payable	4,000	4,800	4,800	5,600	6,000	6,000
Direct costs	3,000	3,600	3,600	4,200	4,500	4,500
Advertising	1,000	–	–	1,500	–	–
Overheads						
80%	1,280	1,280	1,280	1,280	1,600	1,600
20%	280	320	320	320	320	400
New plant	–	–	2,200	2,200	2,200	–
Total outflows	9,560	10,000	12,200	15,100	14,620	12,500
Net inflows	(1,960)	(800)	(1,800)	(3,300)	(1,420)	2,300
Balance b/f	7,500	5,540	4,740	2,940	(360)	(1,780)
Balance carried forward	5,540	4,740	2,940	(360)	(1,780)	520

Note how budgets are linked: in this case the materials budget to the accounts payable budget and the accounts payable budget to the cash budget.

The following are possible means of relieving the cash shortages revealed by the budget:

- make a higher proportion of sales on a cash basis
- collect the money from accounts receivable more promptly (e.g. during the month following sale)
- hold lower inventories, both of raw materials and of finished goods
- increase the accounts payable payment period
  - delay the payment for advertising
  - obtain more credit for the overhead cost—at present only 20% is on credit
  - delay the payment for the new plant.

### SELF-ASSESSMENT QUESTION 13.3

(a) and (b)

#### Toscanini Ltd Budget

	Original	Flexed		Actual	
Output (units) production and sales	4,000	3,500		3,500	
	\$	\$		\$	
Sales	96,000	84,000		82,920	
Raw materials	–23,040	–20,160	(1,400 kg)	–20,520	(1,425 kg)
Labour	–19,200	–16,800	(700 hours)	–16,140	(690 hours)
Fixed overheads	–28,800	–28,800		–29,400	
Operating profit	24,960	18,240		16,860	

#### Reconciliation

	\$		\$	Manager accountable
Budgeted profit			24,960	
Sales volume variance* (24,960 – 18,420)	6,720	A		Sales
Sales price variance (84,000 – 82,920)	1,080	A		Sales
Materials price variance ((1,425 × \$14.40) – 20,520)	–			
Materials usage variance ((3,500 × 0.40) – 1,425) × \$14.40	360	A		Production
Labour rate variance ((690 × \$24) – 16,140)	420	F		Personnel
Labour efficiency ((3,500 × 0.20) – 690) × \$24	240	F		Production
Fixed overhead spending (28,800 – 29,400)	600	A		Various, depending on the nature of the overheads
Total net variances		A	–8,100	
Actual profit			16,860	

\*The sales volume variance can also be calculated as follows:

The contribution to fixed costs and profit for every unit of production can be calculated as:

Selling price per unit	24
Materials per unit	5.76
Labour per unit	4.80
Contribution per unit	13.44

This means that if the volume is 500 less than budgeted, the loss of contribution would be  $500 \times 13.44 = \$6,720$ .

(c) Feasible explanations include the following:

*Sales volume* The unanticipated fall in world demand would account for 400 of the reduced sales (demand would fall 10% from 4,000 to 3,600), with the remaining 100 being attributable to other causes. The remainder is probably caused by ineffective marketing, although a lack of availability of inventory to sell may be a reason.

*Sales price* Ineffective selling seems the only logical reason.

*Materials usage* Inefficient use of materials, perhaps because of poor performance by labour or substandard materials.

*Labour rate* Less overtime worked or lower production bonuses paid as a result of lower volume of activity.

*Labour efficiency* More effective working, perhaps because fewer hours were worked than planned.

*Overheads* Ineffective control of overheads.

(d) Clearly not all of the sales variance can be attributed to poor marketing, given a 10% reduction in demand.

It will probably be useful to distinguish between that part of the variance that arose from the general shortfall in general demand (a planning variance) and a volume variance, which is more fairly attributable to the manager concerned. Thus, accountability will be more fairly imposed.

Planning variance (10% $\times$ 4,000)—based on a flexed budget of 3,600 (or $400 \times \$13.44$ )	5,376
'New' sales volume variance reflecting the difference between the budgeted profit on a flexed budget at 3,600 and 3,500 ( $100 \times 13.44$ )	1,344
Original sales volume variance	\$6,720

## SELF-ASSESSMENT QUESTION 14.1

(a) *Relevant cash flow*

### Beacon Chemicals Ltd

	2017	2018	2019	2020	2021	2022
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Sales revenue	—	80	120	144	100	64
Loss of contribution		(15)	(15)	(15)	(15)	(15)
Variable costs		(40)	(50)	(48)	(30)	(32)
Fixed costs		(8)	(8)	(8)	(8)	(8)
Operating cash flows		17	47	73	47	9
Working capital	(30)					30
Capital cost	(100)					
Net relevant cash flows	(130)	17	47	73	47	39

(b) *Payback period*

Cumulative cash flow at end of year: 2017 (130) 2018 (113) 2019 (66) 2020 (7)

Thus, the plant will have repaid the initial investment by the end of 2020, the third year of operations. More specifically, the payback period is close to two years, eleven months.

(c) *Net present value*

Discount factor	1.000	0.926	0.857	0.794	0.735	0.681
Present value	(130)	15.74	40.28	57.96	34.55	26.56
Net present value	45.09					