Appendix I

Information extracted from annual report of Safe and Sure Group plc, used throughout Financial Accounting

Safe and Sure Group plc
Consolidated balance sheet at 31 December

	Notes	Year 7 £m	*Year 6 £m*
Non-current assets			
Intangible assets	*1*	260.3	*237.6*
Tangible assets	*2*	137.5	*121.9*
Investments	*3*	2.8	*2.0*
Taxation recoverable	*4*	5.9	*4.9*
		406.5	*366.4*
Current assets			
Inventories (stocks)	*5*	26.6	*24.3*
Amounts receivable (debtors)	*6*	146.9	*134.7*
Six-month deposits		2.0	–
Cash and cash equivalents		105.3	*90.5*
		280.8	*249.5*
Current liabilities			
Amounts payable (creditors)	*7*	(159.8)	*(157.5)*
Bank overdraft	*8*	(40.1)	*(62.6)*
		(199.9)	*(220.1)*
Net current assets		80.9	*29.4*
Total assets less current liabilities		487.4	*395.8*
Non-current liabilities			
Amounts payable (creditors)	*9*	(2.7)	*(2.6)*
Bank and other borrowings	*10*	(0.2)	*(0.6)*
Provisions	*11*	(20.2)	*(22.2)*
Net assets		464.3	*370.4*
Capital and reserves			
Called-up share capital	*12*	19.6	*19.5*
Share premium account	*13*	8.5	*5.5*
Revaluation reserve	*14*	4.6	*4.6*
Retained earnings	*15*	431.6	*340.8*
Equity holders' funds		464.3	*370.4*

Safe and Sure Group plc
Consolidated income statement (profit and loss account)
for the years ended 31 December

	Notes	Year 7 £m	*Year 6 £m*
Continuing operations			
Revenue	*16*	714.6	*589.3*
Cost of sales	*16*	(491.0)	*(406.3)*
Gross profit		223.6	*183.0*
Distribution costs		(2.2)	*(2.5)*
Administrative expenses	17	(26.2)	*(26.5)*
Profit from operations		195.2	*154.0*
Interest receivable (net)	*18*	2.3	*3.0*
Profit before tax	*19*	197.5	*157.0*
Tax	*20*	(62.2)	*(52.4)*
Profit for the period from continuing operations		135.3	*104.6*
Discontinued operations			
Loss for the period from discontinued operations	21	(20.5)	*(10.0)*
Profit for the period attributable to equity holders		114.8	*94.6*
Earnings per share	*22*	11.74	*9.71*

Safe and Sure plc
Statement of total recognised income and expense

	Year 7	*Year 6*
	£m	*£m*
Profit attributable to equity holders	114.8	*94.6*
Exchange rate adjustments	5.5	*(6.0)*
Total recognised gains for the year	120.3	*88.6*

Safe and Sure plc
Reconciliation of movements in equity

	Year 7	*Year 6*
	£m	*£m*
Profit attributable to equity holders	114.8	*94.6*
Dividends	(29.5)	*(24.4)*
New share capital issued	3.1	*2.0*
Exchange adjustments	5.5	*(6.0)*
Net change in equity holders' funds	93.9	*66.2*
Opening equity holders' funds	370.4	*304.2*
Closing equity holders' funds	464.3	*370.4*

Safe and Sure Group plc
Consolidated cash flow statement for the years ended 31 December

	Notes	Year 7 £m	*Year 6 £m*
Cash flows from operating activities			
Cash generated from operations	*23*	196.7	*163.5*
Interest paid		(3.1)	*(2.4)*
UK corporation tax paid		(20.1)	*(18.3)*
Overseas tax paid		(30.5)	*(26.5)*
Net cash from operating activities		**143.0**	***116.3***
Cash flows from investing activities			
Purchase of tangible non-current assets		(60.0)	*(47.5)*
Sale of tangible non-current assets		12.0	*10.1*
Purchase of companies and businesses	*25*	(27.7)	*(90.1)*
Sale of a company		3.1	–
Movement in short-term deposits		(30.7)	*36.3*
Interest received		5.0	*5.9*
Net cash used in investing activities		**(98.3)**	***(85.3)***
Cash flows from financing activities			
Issue of ordinary share capital		3.1	*2.0*
Dividends paid to equity holders		(29.5)	*(24.4)*
Net loan movement (excluding overdraft)		16.2	*(24.0)*
Net cash used in financing activities		**(10.2)**	***(46.4)***
Net increase/(decrease) in cash and cash equivalents*		**34.5**	***(15.4)***
Cash and cash equivalents at the beginning of the year		27.9	*45.3*
Exchange adjustments		2.8	*(2.0)*
Cash and cash equivalents at the end of the year	28	65.2	*27.9*

* Cash on demand and deposits of maturity less than 3 months, net of overdrafts

Accounting policies (extracts)

Intangible non-current (fixed) assets

Purchased goodwill is calculated as the difference between the fair value of the consideration paid for an acquired entity and the aggregate of the fair values of that entity's identifiable assets and liabilities. An impairment review has been undertaken at the balance sheet date.

Freehold and leasehold property

Freehold and leasehold land and buildings are stated either at cost or at their revalued amounts less depreciation. Full revaluations are made at five-year intervals with interim valuations in the intervening years, the most recent being in Year 0.

Provision for depreciation of freehold land and buildings is made at the annual rate of 1% of cost or the revalued amounts. Leasehold land and buildings are amortised in equal annual instalments over the periods of the leases subject to a minimum annual provision of 1% of cost or the revalued amounts. When properties are sold the difference between sales proceeds and net book value is dealt with in the income statement (profit and loss account)

Other tangible non-current (fixed) assets

Other tangible non-current assets are stated at cost less depreciation. Provision for depreciation is made mainly in equal annual instalments over the estimated useful lives of the assets as follows:

4 to 5 years	vehicles
5 to 10 years	plant, machinery and equipment

Inventories (stocks and work-in-progress)

Inventories (stocks and work-in-progress) are stated at the lower of cost and net realisable value, using the first-in-first-out principle. Cost includes all direct expenditure and related overheads incurred in bringing the inventories to their present condition and location.

Deferred tax

The provision for deferred tax recognises a future liability arising from past transactions and events. Tax legislation allows the company to defer settlement of the liability for several years.

Warranties

Some service work is carried out under warranty. The cost of claims under warranty is charged against the profit and loss account of the year in which the claims are settled.

Deferred consideration

For acquisitions involving deferred consideration, estimated deferred payments are accrued in the balance sheet. Interest due to vendors on deferred payments is charged to the profit and loss account as it accrues.

Notes to accounts

Note 1 Intangible non-current assets

	Year 7 £m	*Year 6 £m*
Goodwill at 1 January	237.6	*139.1*
Additions in year	24.3	*98.5*
Reduction in year	(1.6)	*–*
Goodwill at 31 December	260.3	*237.6*

The reduction of £1.6m results from the annual impairment review.

Note 2 Tangible non-current assets

	Land and buildings £m	*Plant and equipment* £m	*Vehicles* £m	*Total* £m
Cost or valuation				
At 1 January Year 7	28.3	96.4	104.8	229.5
Additions at cost	3.9	18.5	37.8	60.2
On acquisitions	0.3	1.0	0.7	2.0
Disposals	(0.6)	(3.1)	(24.7)	(28.4)
At 31 December Year 7	31.9	112.8	118.6	263.3
Aggregate depreciation				
At 1 January Year 7	2.2	58.8	46.6	107.6
Depreciation for the year	0.5	13.5	19.2	33.2
On acquisitions	0.1	0.7	0.6	1.4
Disposals	(0.2)	(2.8)	(13.4)	(16.4)
At 31 December Year 7	2.6	70.2	53.0	125.8
Net book value at 31 December Year 7	29.3	42.6	65.6	137.5
Net book value at 31 December Year 6	26.1	37.6	58.2	121.9

Analysis of land and buildings at cost or valuation

	Year 7 £m	*Year 6 £m*
At cost	10.4	*7.1*
At valuation	21.5	*21.2*
	31.9	*28.3*

The majority of the group's freehold and long-term leasehold properties were revalued during Year 5 by independent valuers. Valuations were made on the basis of the market value for existing use. The book values of the properties were adjusted to the revaluations and the resultant net surplus was credited to the revaluation reserve.

Analysis of net book value of land and buildings

	Year 7 £m	*Year 6 £m*
Freehold	24.5	*21.0*
Leasehold:		
Over 50 years unexpired	2.1	*2.4*
Under 50 years unexpired	2.7	*2.7*
	29.3	*26.1*

If the revalued assets were stated on the historical cost basis the amounts would be:

	Year 7 £m	*Year 6 £m*
Land and buildings at cost	15.7	*14.5*
Aggregate depreciation	(2.2)	*(1.9)*
	13.5	*12.6*

Note 3

Relates to investments in subsidiary companies and is not reproduced here.

Note 4

Explains the nature of taxation recoverable after more than 12 months from the balance sheet date. The detail is not reproduced here.

Note 5 Inventories (stocks)

	Year 7 £m	*Year 6 £m*
Raw materials	6.2	*5.4*
Work-in-progress	1.9	*1.0*
Finished products	18.5	*17.9*
	26.6	*24.3*

Note 6 Amounts receivable (debtors)

	Year 7 £m	*Year 6 £m*
Trade receivables (trade debtors)	128.1	*117.0*
Other receivables (debtors)	10.9	*9.8*
Prepayments and accrued income	7.9	*7.9*
	146.9	*134.7*

Note 7 Current liabilities: amounts payable

	Year 7 £m	*Year 6 £m*
Deferred consideration on acquisition	1.1	*4.3*
Trade payables (trade creditors)	23.6	*20.4*
Corporation tax	31.5	*26.5*
Other tax and social security payable	24.5	*21.2*
Other payables (creditors)	30.7	*23.8*
Accruals and deferred income	48.4	*61.3*
	159.8	*157.5*

Note 8 Bank borrowings: current liabilities

	Year 7 £m	*Year 6 £m*
Bank overdrafts due on demand:	40.1	*62.6*

Interest on overdrafts is payable at normal commercial rates appropriate to the country where the borrowing is made.

Note 9 Non-current liabilities: payables (creditors)

	Year 7 £m	*Year 6 £m*
Deferred consideration on acquisition	0.6	–
Other payables (creditors)	2.1	*2.6*
	2.7	*2.6*

Note 10 Non-current liabilities: bank and other borrowings

	Year 7 £m	*Year 6 £m*
Secured loans	–	*0.3*
Unsecured loans	0.2	*0.3*
	0.2	*0.6*
Loans are repayable by instalments:		
Between one and two years	0.1	*0.2*
Between two and five years	0.1	*0.4*
	0.2	*0.6*

Interest on long-term loans, which are denominated in a number of currencies, is payable at normal commercial rates appropriate to the country in which the borrowing is made. The last repayment falls due in Year 11.

Note 11 Provisions

	Year 7 £m	*Year 6 £m*
Provisions for treating contaminated site:		
At 1 January	14.2	*14.5*
Utilised in the year	(2.2)	*(0.3)*
At 31 December	12.0	*14.2*
Provisions for restructuring costs:		
At 1 January	4.2	–
Created in year	1.0	*4.3*
Utilised in year	(1.0)	*(0.1)*
At 31 December	4.2	*4.2*
Provision for deferred tax:		
At 1 January	3.8	*2.7*
Transfer to profit and loss account	0.5	*1.2*
Other movements	(0.3)	*(0.1)*
At 31 December	4.0	*3.8*
Total provision	20.2	*22.2*

Note 12 Share capital

	Year 7 £m	*Year 6 £m*
Ordinary shares of 2 pence each		
Authorised: 1,050,000,000 shares		
(Year 6: 1,000,000,000)	21.0	*20.0*
Issued and fully paid: 978,147,487 shares	19.6	*19.5*

Certain senior executives hold options to subscribe for shares in the company at prices ranging from 33.40p to 244.33p under schemes approved by equity holders at various dates. Options on 3,479,507 shares were exercised during Year 7 and 66,970 options lapsed. The number of shares subject to options, the years in which they were purchased and the years in which they will expire are:

Purchase	*Expiry*	*Numbers*
	Year 8	13,750
All	Year 9	110,000
purchased	Year 10	542,500
10 years	Year 11	1,429,000
before	Year 12	2,826,600
expiry	Year 13/14	3,539,942
	Year 15	3,690,950
	Year 16	2,279,270
	Year 17	3,279,363
		17,711,375

Note 13 Share premium account

	Year 7 £m	*Year 6 £m*
At 1 January	5.5	*3.6*
Premium on shares issued during the year under the share option schemes	3.0	*1.9*
At 31 December	8.5	*5.5*

Note 14 Revaluation reserve

	Year 7 £m	*Year 6 £m*
At 1 January	4.6	*4.6*
At 31 December	4.6	*4.6*

Note 15 Retained earnings

	Year 7 £m	*Year 6 £m*
At 1 January	340.8	*276.6*
Exchange adjustments	5.5	*(6.0)*
Profit for the year	114.8	*94.6*
Dividend paid	(29.5)	*(24.4)*
At 31 December	431.6	*340.8*

Note 16 Segmental analysis

Primary reporting format – business segments

For management purposes the group is currently organised into two operating divisions, (1) disposal and recycling, (2) security and cleaning. Disposal and recycling includes all aspects of collection and safe disposal of industrial and commercial waste products. Security and cleaning is undertaken by renewable annual contract, predominantly for hospitals, other healthcare premises and local government organisations.

The group's disposal and recycling operation in North America was discontinued with effect from 30 April Year 7.

Business sector analysis

	Disposal and recycling		*Security and cleaning*		*Total*	
	Year 7 £m	*Year 6 £m*	Year 7 £m	*Year 6 £m*	Year 7 £m	Year 6 *£m*
REVENUE						
Continuing	508.9	*455.0*	205.7	*134.3*	714.6	*589.3*
Discontinued	20.0	*11.0*			20.0	*11.0*
Total revenue	528.9	*466.0*	205.7	*134.3*	734.6	*600.3*
Operating profit (loss) by service						
Continuing	176.6	*139.6*	18.6	*14.4*	195.2	*154.0*
Discontinued	(20.5)	*(10.0)*			(20.5)	*(10.0)*
Total operating profit					174.7	*144.0*
Interest receivable (net)					2.3	*3.0*
Profit before tax					177.0	*147.0*
Taxation					(62.2)	*(52.4)*
Profit for the period					114.8	*94.6*

All costs of head office operations are allocated to divisions on an activity costing basis.

Other segment items included in the income statement are as follows:

	Disposal and recycling		*Security and cleaning*		*Total*	
	Year 7 £m	*Year 6 £m*	Year 7 £m	*Year 6 £m*	Year 7 £m	Year 6 *£m*
Depreciation	30.2	*25.1*	3.0	*3.9*	33.2	*29.0*
Impairment of goodwill	1.6	–	–	–	1.6	–

The segment assets and liabilities at the end of Years 7 and 6, with capital expenditure for each year are as follows:

	Disposal and recycling		*Security and cleaning*		*Unallocated*		*Total*	
	Year 7 £m	*Year 6 £m*	Year 7 £m	*Year 6 £m*	Year 7 £m	*Year 6 £m*	Year 7 £m	*Year 6 £m*
Total assets	498.5	*370.9*	68.7	*132.7*	120.1	*112.3*	687.3	*615.9*
Total liabilities	131.7	*147.9*	61.3	*85.5*	30.0	*12.1*	223.0	*245.5*
Capital expenditure	50.0	*45.0*	10.2	*2.5*	–	–	60.2	*47.5*

Secondary reporting format – geographical segments

The group's two business segments operate in four main geographical areas, even though they are managed on a worldwide basis. In the following analysis. revenue is based on the country in which the order is received. It would not be materially different if based on the country in which the customer is located. Total assets and capital expenditure are allocated based on where the assets are located.

	Sales		*Total assets*		*Capital expenditure*	
	Year 7 £m	*Year 6 £m*	Year 7 £m	*Year 6 £m*	Year 7 £m	*Year 6 £m*
CONTINUING						
United Kingdom	323.4	*246.7*	294.6	*250.1*	40.2	*25.1*
Continental Europe	164.3	*153.5*	152.7	*156.4*	1.5	*2.3*
North America	104.5	*80.1*	145.2	*82.8*	10.6	*15.4*
Asia Pacific & Africa	122.4	*109.0*	94.8	*126.1*	7.9	*4.7*
	714.6	*589.3*	687.3	*615.4*	60.2	*47.5*
DISCONTINUED						
North America	20.0	*11.0*	–	*0.5*	–	–
Total	734.6	*600.3*	687.3	*615.9*	60.2	*47.5*

Notes 17–20

Contain supporting details for the profit and loss account and are not reproduced here.

Note 21 Discontinued operations

On 31 March Year 7, the Group entered into a sale agreement to dispose of Carers Inc., its recycling business in North America. The purpose of the disposal was to prevent further loss-making activity. The disposal was completed on 30 April Year 7, on which date control of Carers Inc. passed to the acquirer.

The results of the discontinued operations which have been included in the consolidated income statement, were as follows:

	Year 7 £m	*Year 6 £m*
Revenue	20.0	*11.0*
Expenses	(40.5)	*(21.0)*
Loss attributable to discontinued operations	(20.5)	***(10.0)***

Note 22

Contains supporting details for earnings per share and is not reproduced here.

Note 23 Cash flow from operating activities

Reconciliation of operating profit to net cash flow from operating activities

	Year 7 £m	*Year 6* *£m*
Profit before tax from continuing operations	195.2	*154.0*
Loss from discontinued operations	(20.5)	*(10.0)*
Profit from operations	174.7	*144.0*
Depreciation charge	33.2	*30.1*
Increase in inventories (stocks)*	(1.9)	*(1.1)*
Increase in trade receivables (debtors)*	(7.4)	*(5.3)*
Decrease in trade payables (creditors)*	(0.4)	*(3.6)*
Net cash inflow from continuing activities	198.2	*164.1*
Cash outflow in respect of discontinued item	(1.5)	*(0.6)*
Net cash inflow from operating activities	196.7	*163.5*

**Note*: It is not possible to reconcile these figures with the balance sheet information because of the effect of acquisitions during the year.

Note 24 Information on acquisitions (extract)

The group purchased 20 companies and businesses during the year for a total consideration of £25m. The adjustments required to the balance sheet figures of companies and businesses acquired, in order to present the net assets at fair value, are shown below:

	£m
Net assets of subsidiaries acquired, as shown in their balance sheets	4.1
Adjustments made by directors of Safe and Sure plc	(3.4)
Fair value of net assets acquired (**a**)	0.7
Cash paid for subsidiaries (**b**)	25.0
Goodwill (**b – a**)	24.3

From the dates of acquisition to 31 December Year 7, the acquisitions contributed £13.5m to revenue, £2.7m to profit before interest and £2.2m to profit after interest.

If the acquisitions had been completed on the first day of the financial year, they would have contributed £30m to group revenues for the year and £5m to group profit attributable to equity holders of the parent.

Notes 25–27

Contain supporting detail for the cash flow statement and are not reproduced here.

Note 28 Cash and cash equivalents

Reconciliation of cash flow for the year to the balance sheet items

	Year 7 £m	*Year 6* *£m*
Balance sheet items		
Cash and cash equivalents	105.3	*90.5*
Bank overdraft	(40.1)	*(62.6)*
Net	65.2	*27.9*

Notes 29–32

Contain various other items of information required by company law and are not reproduced here.

Note 33 Contingent liabilities

The company has guaranteed bank and other borrowings of subsidiaries amounting to £3.0m (Year 6: £15.2m). The group has commitments, amounting to approximately £41.9m (Year 6: £28.5m), under forward exchange contracts entered into in the ordinary course of business.

Certain subsidiaries have given warranties for service work. These are explained in the statement on accounting policies. There are contingent liabilities in respect of litigation. None of the actions is expected to give rise to any material loss.

Note 34

Contains commitments for capital expenditure and is not reproduced here.

Five-year summary

(Continuing and discontinued operations combined)

	Year 3	Year 4	Year 5	Year 6	Year 7
	£m	£m	£m	£m	£m
Group revenue	309.1	389.0	474.1	600.3	734.6
Group profit before tax*	74.4	90.4	114.5	147.0	177.0
Tax	(27.2)	(33.9)	(44.3)	(52.4)	(62.2)
Group profit after tax	47.2	56.5	70.2	94.6	114.8
Earnings per share	4.88p	6.23p	8.02p	9.71p	11.74p
Dividends per share	1.32p	1.69p	2.17p	2.50p	3.02
	£m	£m	£m	£m	£m
Share capital	19.4	19.4	19.4	19.5	19.6
Reserves	160.8	195.3	265.4	350.9	444.7
Total equity	180.2	214.7	284.8	370.4	464.3

Operating and Financial Review (extract)

CHIEF EXECUTIVE'S REVIEW OF OPERATIONS

Group results

Group revenue from continuing operations in Year 7 increased by 21.3% to £714.6m, while continuing profits before tax increased by 25.8% to £197.5m. Earnings per share increased by 20.9% to 11.74 pence. These results show the benefits of our geographic diversification across the major economies of the world. We have achieved excellent growth in the UK, together with continued good growth in North America. Growth in Europe continued to be constrained by depressed economies, while excellent results in Australia were held back by disappointing growth in South East Asia. Segmental results are set out in detail in Note 16 to the financial statements.

In Disposal and Recycling, revenue improved by 13.4% and profits improved by 20.4%. Revenue in Security and Cleaning improved by 53.2% and profits improved by 29.2%.

Organisation

We continue to be organised into four geographic regions, each headed by a regional managing director. Group services are provided for finance, legal, research and development, corporate affairs, business development and management development. These costs are allocated to divisions on the basis of activity costing.

Strategy

Our ultimate objective is to achieve for our equity holders a high rate of growth in earnings and dividends per share each year. Our strategies are to provide customers with the highest standards of service and to maintain quality of service as we enter new fields. We also operate a prudent financial policy of managing our businesses to generate a strong operating cash flow.

Disposal and recycling

Disposal and recycling includes all aspects of collection and safe disposal of industrial and commercial waste products. During Year 7 all our operational landfill sites gained certification to the international environment management standard. Organic waste deposited in landfill sites degrades naturally and gives off a gas rich in methane which has to be controlled for environmental reasons. However, landfill sites can also be a cheap, clean and highly efficient source of renewable energy. Through strategic long-term contracts we are generating 64MW of electricity each year from landfill waste to energy schemes. New waste transfer and recycling centres in Germany and France were added to the Group's network during Year 7.

Security and cleaning

Security and cleaning is undertaken by renewable annual contract, predominantly for hospitals, other healthcare premises and local government organisations. During Year 7 we acquired a security company in the UK and some smaller operations in Switzerland and Spain. Improved margins in contract cleaning reflected continued demands for improved hygiene standards and our introduction of new techniques to meet this need.

FINANCE DIRECTOR'S REVIEW OF THE POSITION OF THE BUSINESS

Profits

Operating profits, including the effect of discontinued operations, rose to £174.7m in Year 7, up from £144.0m in Year 6. Interest income fell £0.7m to £2.3m in Year 7, as a result of the cash spent on acquisitions towards the end of Year 6. At constant average Year 6 exchange rates, the Year 7 profit before tax, including the effect of discontinued operations, would have been £0.6m higher at £177.6m, an increase of 20.8% over the reported Year 6 figures.

Cash flow

The Group's businesses are structured to utilise as little fixed and working capital as is consistent with the profit and earnings growth objective in order to produce a high cash flow. The impact of working capital on cash flow was held to an increase in Year 7 of £9.7m (Year 6: £10.0m).

A net cash flow of £196.7m was generated from operating activities. That was boosted by other amounts of cash from interest received. After paying interest and tax, the Group had £143.0m remaining. Fixed assets required £48.0m after allowing for the proceeds of selling some of our vehicle fleet in the routine replacement programme. That left £95m from which £24.6m was required to pay for acquisitions. The remaining £70.4m covered dividends of £29.5m leaving £40.9m. We received £5m interest on investments and raised £3.1m in ordinary share capital to give a net inflow of liquid funds in the year of £49.0m. Out of that amount, short-term deposits have increased by £14.5m, leaving an increase in cash of £34.5m.

Foreign currency

We borrowed £35.2m of foreign currency bank borrowings to fund overseas acquisitions. The main borrowings were £26.8m in US dollars and £8.4m in yen (to fund our Japanese associate investment). The borrowings are mainly from banks on a short-term basis with a maturity of up to one year. We have fixed the interest rate on $20m of the US dollar loans through to November Year 8 at an overall cost of 4.5%.

All material foreign currency transactions are matched back into the currency of the Group company undertaking the transaction. It is not the Group's current practice to hedge the translation of overseas profits or assets back into sterling, although overseas acquisitions may be financed by foreign currency borrowings.

Capital expenditure

The major items of capital expenditure are vehicles, equipment used on customers' premises and office equipment, particularly computers. Disposals during the year were mainly of vehicles being replaced on a rolling programme.

Taxation

The overall Group taxation charge comprises tax at 30% on UK profits and an average rate of 38% on overseas profits, reflecting the underlying rates in the various countries in which the Group operates.

Future development and performance

Once again, in Year 7 Safe and Sure met its declared objective of increasing its pre-tax profits and earnings per share by at least 20% per annum. The board expects a return to much better growth in Europe and a substantially improved performance in the USA to underpin good Group growth for the year.

Directors' report (extract)

The directors recommend a final dividend of 3.54 pence per ordinary share to be paid to shareholders on the register on 31 March Year 8.

Appendix II

Solutions to numerical and technical questions in Financial Accounting

Note that solutions are provided only for numerical and technical material since other matters are covered either in the book or in the further reading indicated.

Chapter 1 has no solutions given in this Appendix because there are no numerical questions.

Chapter 2

Application **B2.1**

Classify each of the items in the following list as: asset; liability; neither an asset nor a liability:

Cash at bank	Asset
Loan from the bank	Liability
Letter from the bank promising an overdraft facility at any time in the next three months	Neither
Trade debtor (a customer who has promised to pay later)	Asset
Trade debtor (a customer who has promised to pay later but has apparently disappeared without leaving a forwarding address)	Neither
Supplier of goods who has not yet received payment from the business	Liability
Stock of finished goods (fashion clothing stored ahead of the spring sales)	Asset
Stock of finished goods (fashion clothing left over after the spring sales)	Neither, unless value remains
Investment in shares of another company where the share price is rising	Asset
Investment in shares of another company where the share price is falling	Asset while there is still some benefit expected
Lender of five-year loan to the business	Liability
Customer to whom the business has offered a 12-month warranty to repair goods free of charge	Liability
A motor vehicle owned by the business	Asset
A motor vehicle rented by the business for one year	Neither
An office building owned by the business	Asset
An office building rented by the business on a 99-year lease, with 60 years' lease period remaining	Asset, but may not be shown

B2.2
Yes to all, except the rented building where risks and benefits are mainly for the owners, not the users.

B2.3

A letter from the owner of the business, addressed to the bank manager, promising to guarantee the bank overdraft of the business.	Transaction is between owner and bank, not with business.
A list of the customers of the business.	Has benefit for the future but no event, also not measurable with reliability.
An order received from a customer.	Future benefit expected but insufficient evidence that it will be obtained.
The benefit of employing a development engineer with a high level of 'know-how' specifically relevant to the business.	Future benefit exists but not measurable with sufficient reliability.
Money spent on an advertising campaign to boost sales.	Future benefit exists but not measurable with sufficient reliability.
Structural repairs to a building.	Repairs put right the problems of the past – do not create future benefits.

Chapter 3

Application

B3.1

Sunshine Wholesale Traders
Balance sheet at 30 June Year 2

	£	£
Non-current (fixed) assets		
Fleet of delivery vehicles		35,880
Furniture and fittings		18,800
Total fixed assets		54,680
Current assets		
Receivables (debtors)	34,000	
Bank deposit	19,000	
Total current assets	53,000	
Current liabilities		
Trade payables (trade creditors)	(8,300)	
Current assets less current liabilities		44,700
Net assets		99,380
Ownership interest at the start of the year		56,000
Profit of the year		43,380
Ownership interest at end of year		99,380

Note that ownership interest at the start of the year is entered as the missing item.

Sunshine Wholesale Traders
Income statement (profit and loss account) for the year ended 30 June Year 2

	£	£
Revenues		
Sales		294,500
Expenses		
Cost of goods sold		(188,520)
Gross profit		105,980
Wages and salaries	(46,000)	
Transport costs	(14,200)	
Administration costs	(1,300)	
Depreciation	(1,100)	
Total expenses		(62,600)
Net profit of the year		43,380

B3.2

Balance sheet at . . .

	£	£
Non-current (fixed) assets		
Land and buildings		95,000
Vehicles		8,000
Total fixed assets		103,000
Current assets		
Inventory (stock) of goods for resale	35,000	
Cash at bank	9,000	
Total current assets	44,000	
Liabilities due within one year		
Trade payables (trade creditors)	(43,000)	
Wages due	(2,000)	
	(45,000)	
Current liabilities less current assets		(1,000)
		102,000
Liabilities due after one year		(20,000)
		82,000
Ownership interest		82,000

(a) Decrease liability to employees £2,000, decrease asset of cash £2,000.
(b) Decrease ownership interest by £8,750, decrease asset of stock by £8,750.
(c) Increase asset of stock £5,000, increase liability of trade creditors £5,000.

Test your understanding

S3.1
(a) Debit liability to employees £2,000, credit asset of cash £2,000.
(b) Debit ownership interest £8,750, credit asset of stock £8,750.
(c) Debit asset of stock £5,000, credit liability of trade creditors £5,000.

Chapter 4

Application

B4.1
This requires a narrative answer based on sections 4.5.1, 4.5.3 and 4.5.5.

B4.2
This requires a narrative answer based on section 4.3. The more difficult aspect of this question is explaining how each convention affects current accounting practice. One example of each would be:

- *Going concern*: In historical cost accounting the fixed assets of an enterprise are recorded in the balance sheet at the historical cost, after deducting depreciation, rather than at estimated selling price, because the enterprise is a going concern and it is expected that the fixed assets will be held for long-term use.

- *Accruals*: The expense of electricity consumed during a period includes all units of electricity used, irrespective of whether an invoice has been paid.
- *Consistency*: It would be inconsistent, in a balance sheet, to measure trading stock at selling price at one point of time and at cost at another point of time.
- *Prudence*: It is prudent to measure stock of goods at cost, rather than at selling price, because to value at selling price would anticipate a sale which may not take place.

B4.3
This is an essay which shows the student's understanding of the issues in the chapter and the ability to think about them in the context of a variety of users' needs. It requires the student to link the information in Chapter 4 with the ideas set out in section 1.5.

Chapter 5

Test your understanding

A5.1

	Transaction	*Asset*	*Liability*	*Ownership interest*
(a)	Owner puts cash into the business	Increase^		Increase
(b)	Buy a vehicle for cash	Increase and decrease^		
(c)	Receive a bill for electricity consumed		Increase	Decrease*
(d)	Purchase stationery for office use, paying cash	Increase and decrease^		
(e)	Pay the electricity bill in cash	Decrease^	Decrease	
(f)	Pay rental for a computer, used for customer records	Decrease^		Decrease*
(g)	Buy spare parts for cash, to use in repairs	Increase and decrease^		
(h)	Buy spare parts on credit terms	Increase	Increase	
(i)	Pay garage service bills for van, using cash	Decrease^		Decrease*
(j)	Fill van with petrol, using credit account at local garage, to be paid at the start of next month		Increase	Decrease*
(k)	Carry out repairs for cash	Increase^		Increase*
(l)	Carry out repairs on credit terms	Increase		Increase*
(m)	Pay wages to an employee	Decrease^		Decrease*
(n)	Owner takes cash for personal use	Decrease^		Decrease

A5.2
Symbol * shows items which will have an effect on a profit and loss account.

A5.3
Symbol ^ shows items which will have an effect on a cash flow statement.

A5.4
All items other than those asterisked will have a direct effect on a balance sheet. The asterisked items will collectively change the accumulated profit which will increase the ownership interest reported in the balance sheet.

A5.5

Transactions analysed to show the two aspects of the transaction:

	£		
Apr. 1	60,000	Increase asset of cash	Increase ownership interest
Apr. 1	800	Decrease asset of cash	Decrease ownership interest (expense)
Apr. 2	35,000	Increase asset of equipment	Decrease asset of cash
Apr. 3	5,000	Increase asset of supplies	Increase liability to trade creditor
Apr. 4	1,200	Increase asset of cash	Increase ownership interest (revenue)
Apr. 15	700	Decrease asset of cash	Decrease ownership interest (expense)
Apr. 20	500	Decrease asset of cash	Decrease ownership interest (voluntary)
Apr. 21	2,400	Increase asset of cash	Increase ownership interest (revenue)
Apr. 29	700	Decrease asset of cash	Decrease ownership interest (expense)
Apr. 29	1,900	Increase asset of debtor	Increase ownership interest (revenue)
Apr. 30	80	Decrease asset of cash	Decrease ownership interest (expense)
Apr. 30	*1,500	Decrease asset of supplies	Decrease ownership interest (expense)

*Stock acquired £5,000, less amount remaining £3,500 = £1,500 asset used in period.

Application B5.1

		Cash and bank	*Other assets*	*Liabilities*	*Capital contributed or withdrawn*	*Revenue*	*Expenses*
		£	£	£	£	£	£
April 1	Jane Gate commenced her dental practice on April 1 by depositing £60,000 in a business bank account.	60,000			60,000		
April 1	Rent for a surgery was paid, £800, for the month of April.	(800)					800
April 2	Dental equipment was purchased for £35,000, paying in cash.	(35,000)	35,000				
April 3	Dental supplies were purchased for £5,000, taking 30 days' credit from a supplier.		5,000	5,000			
April 4	Fees of £1,200 were collected in cash from patients and paid into the bank account.	1,200				1,200	
April 15	Dental assistant was paid wages for two weeks, £700.	(700)					700
April 20	Jane Gate withdrew £500 cash for personal use.	(500)			(500)		
April 21	Fees of £2,400 were collected in cash from patients and paid into the bank.	2,400				2,400	
April 29	Dental assistant was paid wages for two weeks, £700.	(700)					700
April 29	Invoices were sent to patients who are allowed 20 days' credit, for work done during April amounting to £1,900.		1,900			1,900	
April 30	Telephone bill for April was paid, £80.	(80)					80
April 30	Dental supplies unused were counted and found to be worth £3,500, measured at cost price (i.e. stock decreased by £1,500).		(1,500)				1,500
	Totals	25,820	40,400	5,000	59,500	5,500	3,780

Accounting equation:

Cash	plus	other assets	less	liabilities		
25,820	+	40,400	–	5,000	=	61,220
Capital contributed or withdrawn	plus	revenue	less	expenses		
59,500	+	5,500	–	3,780	=	61,220

B5.2

Dental Practice of Jane Gate
Cash flow statement for the month of April Year XX

	£
Operating activities	
Inflow from fees	3,600
Outflow: rent paid	(800)
wages	(1,400)
telephone	(80)
Net inflow from operations	1,320
Investing activities	
Payment for equipment	(35,000)
Net outflow for investing activities	(35,000)
Financing activities	
Capital contributed by owner	60,000
Capital withdrawn as drawings	(500)
Net inflow from financing activities	59,500
Increase in cash at bank over period	25,820

Dental Practice of Jane Gate
Income statement (profit and loss account) for the month of April Year XX

	£	£
Fees charged		5,500
Dental supplies used	1,500	
Wages	1,400	
Rent	800	
Telephone	80	
		3,780
Profit		1,720

Dental Practice of Jane Gate
Balance sheet at 30 April Year XX

	£
Non-current (fixed) assets	
Dental equipment at cost	35,000
Current assets	
Dental supplies	3,500
Receivables (debtors)	1,900
Cash at bank	25,820
	31,220
Current liabilities	
Trade payables (trade creditors)	(5,000)
Current assets less current liabilities	26,220
Net assets	61,220
Capital at start	60,000
Add profit	1,720
Less drawings	(500)
Total ownership interest	61,220

Chapter 6

Test your understanding

A6.1

(a) Profit is only reported when there is a sale. The number of items sold is 60. Each one gives a profit of £5 so the total profit is £300.

(b) When the 200 items are purchased there is an increase of £4,000 in the asset of stock of spare parts and a decrease of £4,000 in the asset of cash. When the 60 items are sold for £1,500 there is an increase in the asset of cash and an increase in the ownership interest reported as revenue. The 60 items cost £1,200 to purchase and so at the date of sale there is a reduction in the asset of stock amounting to £1,200 and a decrease in the ownership interest due to the expense of cost of goods sold £1,200.

A6.2

(a) Transactions summarised by spreadsheet

	Cash	*Stock*	*Revenue*	*Expense*
	£	£	£	£
Purchase 200 items @ £20 each	(4,000)	4,000		
Sell 60 items @ £25	1,500		1,500	
Cost of goods sold 60 @ £20		(1,200)		1,200
Totals	(2,500)	*2,800*	*1,500*	*1,200*

(b) Stock increases by £2,800 while cash decreases by £2,500, overall increase in assets amounting to £300. Ownership interest increases by £300 when expenses of £1,200 are set against revenue of £1,500.

A6.3

(a) Calculation of profit on sale:

	£
Sale of 50 trays for £8 each	400
Cost of 50 trays at £5.50 each	275
Profit on sale	125

(b) Analysis of transactions using the accounting equation

	£		
June 1	300	Increase asset of stock of raw materials.	Decrease asset of cash.
June 3	210	Decrease asset of stock of raw materials.	Increase asset of work-in-progress.
June 5	175	Decrease asset of cash.	Increase asset of work-in-progress.
June 6	385	Increase asset of finished goods.	Decrease asset of work-in-progress.
June 11	275	Decrease ownership interest: expense of cost of goods sold.	Decrease asset of finished goods.
June 14	400	Increase asset of cash.	Increase ownership interest: revenue.

A6.4

Date	Amount		
	£		
Apr. 1	60,000	Increase asset of cash.	Increase ownership interest.
Apr. 2	20,000	Increase asset of buildings.	Decrease asset of cash.
Apr. 4	12,000	Increase asset of equipment.	Decrease asset of cash.
Apr. 6	8,500	Increase asset of stock.	Decrease asset of cash.
Apr. 7	7,000	Increase asset of stock.	Increase liability to supplier.
Apr. 11	7,000	Decrease liability to supplier.	Decrease asset of cash.
Apr. 14	400	Decrease ownership claim (expense).	Decrease asset of cash.
Apr. 17	5,500	Decrease ownership claim (expense).	Decrease asset of stock.
Apr. 17	6,000	Increase asset of cash.	Increase ownership claim (revenue).
Apr. 17	4,200	Increase asset of debtor.	Increase ownership claim (revenue).
Apr. 24	4,200	Increase asset of cash.	Decrease asset of debtor.
Apr. 28	2,700	Decrease ownership claim (voluntary withdrawal).	Decrease asset of cash.
Apr. 30	2,800	Decrease ownership claim (expense).	Decrease asset of cash.
Apr. 30	550	Decrease ownership claim (expense of depreciation).	Decrease asset of equipment.

Application B6.1 (a)

		Cash at bank	*Fixed assets and debtors*	*Stock of goods*	*Trade creditor*	*Capital contributed or withdrawn*	*Revenue*	*Expenses*
		£	£		£	£	£	£
Apr. 1	The owner pays cash into a bank account for the business.	60,000				60,000		
Apr. 2	The business acquires buildings for cash.	(20,000)	20,000					
Apr. 4	The business acquires equipment for cash.	(12,000)	12,000					
Apr. 6	The business purchases a stock of goods for cash.	(8,500)		8,500				
Apr. 7	The business purchases a stock of goods on credit from R. Green and receives an invoice.			7,000	7,000			
Apr. 11	The business pays R. Green in cash for the goods it acquired on credit.	(7,000)			(7,000)			
Apr. 14	The business pays a gas bill in cash.	(400)						400
Apr. 17	Some of the goods purchased for resale (items costing £5,500) are removed from the store because sales have been agreed with customers for this date.			(5,500)				5,500
Apr. 17	The business sells goods for cash.	6,000					6,000	
Apr. 17	The business sells goods on credit to P. Weatherall and sends an invoice.		4,200				4,200	
Apr. 24	P. Weatherall pays in cash for the goods obtained on credit.	4,200	(4,200)					
Apr. 28	The owner draws cash from the business for personal use.	(2,700)				(2,700)		
Apr. 30	The business pays wages to employees, in cash.	(2,800)						2,800
Apr. 30	The business discovers that its equipment has fallen in value over the month.		(550)					550
	Totals	16,800	31,450	10,000	nil	57,300	10,200	9,250

(b) Accounting equation:

Assets	–	Liabilities	=	Ownership interest
16,800 + 31,450 + 10,000		nil	=	57,300 + 10,200 – 9,250
58,250				58,250

B6.2

Peter Gold, furniture supplier
Cash flow statement for the month of April Year XX

	£
Operating activities	
Cash from customers	10,200
Outflow: payment for goods	(8,500)
payment to supplier (R. Green)	(7,000)
wages	(2,800)
gas	(400)
Net outflow from operations	(8,500)
Investing activities	
Payment for buildings	(20,000)
Payment for equipment	(12,000)
Net outflow for investing activities	(32,000)
Financing activities	
Capital contributed by owner	60,000
Capital withdrawn as drawings	(2,700)
Net inflow from financing activities	57,300
Increase in cash at bank over period	16,800

Peter Gold, furniture supplier
Income statement (profit and loss account) for the month of April Year XX

	£	£
Revenue		10,200
Cost of goods sold		(5,500)
Gross profit		4,700
Other expenses		
Wages	(2,800)	
Gas	(400)	
Depreciation	(550)	
		(3,750)
Net profit		950

Peter Gold, furniture supplier
Balance sheet at 30 April Year XX

	£
Non-current (fixed) assets	
Buildings	20,000
Equipment	12,000
	32,000
Depreciation	(550)
Depreciated cost of fixed assets	31,450
Current assets	
Inventory (stocks)	10,000
Cash at bank	16,800
	26,800
Net assets	58,250
Capital at start	60,000
Add profit	950
Less drawings	(2,700)
Total ownership interest	58,250

Chapter 7

Application

B7.1 to B7.4

The questions at the end of Chapter 7 provide opportunities for writing about accounting information. An outline for an answer could be developed from the chapter and it could be illustrated by using annual reports obtained from companies or their websites.

To write a short essay for question **B7.1** or question **B7.3** the IASB *Framework* would be very helpful.

Problem solving and evaluation

Question **C7.1** requires you to show that you have thought about all the material in the first seven chapters of the book. A reader of your essay might expect to find some or all of the following questions addressed:

(a) This is a listed company and so shares are bought and sold through the stock market. Does your answer show that you have thought about this active market process?
(b) In giving advice on principles have you made use of the IASB *Framework*?
(c) Have you given examples of the kind of information which would be relevant to the *Framework*? Furthermore, have you carried out some research on company annual reports so that you can provide first-hand examples or illustrations?

Chapter 8

Test your understanding

A8.14

Judgement on value, amount and future economic benefit.

Application

B8.1

(a) The amount of £8,000 has been reported as an asset. Since this is a repair it must be removed from the assets. Removing an asset causes a decrease in the ownership interest through an additional expense of £8,000 in the profit and loss account.

Problem solving and evaluation

C8.1 The Biscuit Manufacturing Company

(a) Depreciation calculated on a straight-line basis: $\frac{22{,}000 - 2{,}000}{4}$ = £5,000 per annum

		Assets			*Ownership interest*	
	Transaction or event	*Machine at cost*	*Accumulated depreciation of van*	*Cash*	*Capital contributed or withdrawn*	*Profit = Revenue minus Expenses*
Year 1		£	£	£	£	£
1 Jan.	Owner contributes cash			22,000	22,000	
1 Jan.	Purchase biscuit machine	22,000		(22,000)		
All year	Collected cash from customers			40,000		40,000
All year	Paid for wages, other costs			(17,000)		(17,000)
31 Dec.	Calculate annual depreciation		(5,000)			(5,000)
	Totals	22,000	(5,000)	23,000	22,000	18,000

		Assets			*Ownership interest*		
	Transaction or event	*Machine at cost*	*Accumulated depreciation of machine*	*Cash*	*Ownership interest at start of year*	*Capital contributed or withdrawn*	*Profit = Revenue minus Expenses*
Year 2		£	£	£	£	£	£
1 Jan.	Amounts brought forward at start of year	22,000	(5,000)	23,000	40,000		
All year	Collected cash from customers			40,000			40,000
All year	Paid for wages, fuel, etc.			(17,000)			(17,000)
31 Dec.	Calculate annual depreciation		(5,000)				(5,000)
	Totals	22,000	(10,000)	46,000	40,000		18,000

		Assets			*Ownership interest*		
	Transaction or event	*Machine at cost*	*Accumulated depreciation of machine*	*Cash*	*Ownership interest at start of year*	*Capital contributed or withdrawn*	*Profit = Revenue minus Expenses*
Year 3		£	£	£	£	£	£
1 Jan.	Amounts brought forward at start of year	22,000	(10,000)	46,000	58,000		
All year	Collected cash from customers			40,000			40,000
All year	Paid for wages, fuel, etc.			(17,000)			(17,000)
31 Dec.	Calculate annual depreciation		(5,000)				(5,000)
	Totals	22,000	(15,000)	69,000	58,000		18,000

		Assets			*Ownership interest*		
	Transaction or event	*Machine at cost*	*Accumulated depreciation of machine*	*Cash*	*Ownership interest at start of year*	*Capital contributed or withdrawn*	*Profit = Revenue minus Expenses*
Year 4		£	£	£	£	£	£
1 Jan.	Amounts brought forward at start of year	22,000	(15,000)	69,000	76,000		
All year	Collected cash from customers			40,000			40,000
All year	Paid for wages, fuel, etc.			(17,000)			(17,000)
31 Dec.	Calculate annual depreciation		(5,000)				(5,000)
	Totals	22,000	(20,000)	92,000	76,000		18,000

(b)

Biscuit Manufacturing Company
Balance sheet at 31 December Year 3

	£
Non-current (fixed) assets	
Machine at cost	22,000
Accumulated depreciation	(15,000)
Net book value	7,000
Current assets	
Cash	69,000
Total assets	76,000
Ownership interest	
Ownership interest at the start of the year	58,000
Profit of the year	18,000
	76,000

Biscuit Manufacturing Company
Income statement (profit and loss account) for the year ended 31 December Year 3

	£	£
Revenue		
Sale of biscuits		40,000
Expenses		
Wages, ingredients and running costs	(17,000)	
Depreciation	(5,000)	
		(22,000)
Net profit		18,000

C8.2

(a)

		Assets			*Ownership interest*		
	Transaction or event	*Machine at cost*	*Accumulated depreciation of machine*	*Cash*	*Ownership interest at start of year*	*Capital contributed or withdrawn*	*Profit = Revenue minus Expenses*
Year 4		£	£	£	£	£	£
1 Jan.	Amounts brought forward at start of year	22,000	(15,000)	69,000	76,000		
All year	Collected cash from customers			40,000			40,000
All year	Paid for wages, fuel, etc.			(17,000)			(17,000)
31 Dec.	Calculate annual depreciation		(5,000)				(5,000)
31 Dec.	Machine disposal	(22,000)	20,000	3,000			1,000
	Totals	nil	nil	95,000	76,000		19,000

Note that at the end of Year 4 the net book value is £2,000 (cost £22,000 less accumulated depreciation £20,000). The cash received £3,000 is therefore £1,000 more than expected. The amount of £1,000 is recorded as an increase in the ownership interest.

(b)

Biscuit Manufacturing Company
Balance sheet at 31 December Year 4

	£
Non-current (fixed) assets	
Machine at cost	nil
Current assets	
Cash	95,000
Total assets	95,000
Ownership interest	
Ownership interest at the start of the year	76,000
Profit of the year	19,000
	95,000

Biscuit Manufacturing Company
Income statement (profit and loss account) for the year ended 31 December Year 4

	£	£
Revenue		
Sale of biscuits		40,000
Expenses		
Wages, ingredients and running costs	(17,000)	
Depreciation less gain on disposal	(4,000)	
		(21,000)
Net profit		19,000

(c) There is apparently a gain on disposal because the cash collected is greater than the net book value of the asset. In reality, all that has happened is that the estimate of depreciation over the asset life is, with the benefit of hindsight, a marginally incorrect estimate. Perfect foresight at the outset would have used £3,000 as a residual value, rather than £2,000, in calculating the annual depreciation charge. However, it is known that accounting involves estimates so it would be inappropriate in most cases to attempt to rewrite the profit and loss accounts of the past. Accordingly all of the 'gain' is reported in Year 4, as a deduction from annual depreciation.

C8.3 Souvenir Company

(a) Straight-line depreciation

Machine cost £16,000, estimated residual value £1,000, so depreciate the difference, £15,000, over five-year life to give annual depreciation of £3,000.

End of Year	*Depreciation of the year (b)*	*Total depreciation (c)*	*Net book value of the asset (£16,000 – (c))*
	£	£	£
1	3,000	3,000	13,000
2	3,000	6,000	10,000
3	3,000	9,000	7,000
4	3,000	12,000	4,000
5	3,000	15,000	1,000

(b) Guess a rate which is at least twice the percentage applied on a straight-line basis (i.e. in this case guess 20% × 2 = 40%).

Calculation of reducing balance depreciation (as in Exhibit 8.3):

Year	*Net book value at start of year (a)*	*Annual depreciation (b) = 40% of (a)*	*Net book value at end of year (a – b)*
	£	£	£
1	16,000	6,400	9,600
2	9,600	3,840	5,760
3	5,760	2,304	3,456
4	3,456	1,382	2,074
5	2,074	830	1,244

(The residual value at the end of Year 5 should ideally be £1,000, so a first estimate which arrives at £1,244 is quite reasonable.)

(c) The net book value at the end of Year 5 is £1,000 and therefore disposal at £2,500 gives an apparent gain of £1,500 which is best described as caused by overdepreciation of earlier years. The effect on the accounting equation is that the asset of machine decreases by £1,000 while the asset of cash increases by £2,500 so that overall the ownership interest increases by £1,500.

(d) The net book value at the end of Year 5 is £1,000 and therefore disposal at nil scrap value gives an apparent loss of £1,000 which is best described as caused by underdepreciation of earlier years. The effect on the accounting equation is that the asset of machine decreases by £1,000 with no increase in any other asset so that overall the ownership interest decreases by £1,000.

Chapter 9

Test your understanding

A9.10

Use lower of cost and net realisable value on each category separately:

Description	*Basis*	*Stock value*
		£
Engine	Cost	6,500
Chassis	Net realisable value	1,600
Frame	Net realisable value	4,600

A9.11

The recorded stock will increase by £18,000 and the ownership interest will increase by £18,000 (reported as a reduction in the cost of goods sold).

A9.12

The asset of debtor (trade receivable) will be reduced by £154,000 and the ownership interest will decrease by £154,000 (reported as an expense of cost of bad debts).

Application

B9.1

(a) The FIFO approach to the issue of units for sale, where:

(i) the calculation is carried out at the date of sale; and

(ii) the calculation is carried out at the end of the month without regard for the date of sale.

Date	*Number of units purchased*	*Unit cost*	*Number of units sold*	*Cost of goods sold (i)*	*Cost of goods sold (ii)*	*Stock (i)*	*Stock (ii)*
				£	£		
Jan. 5	100	£1.00					
Jan. 10			50	50			
Jan. 15	200	£1.10					
Jan. 17			150	50			
				110			
Jan. 24	300	£1.15					
Jan. 30			200	110	100		
				115	220		
					115		
	600		400	435	435	230	230

	£
Sales 400 × £2	800
Cost of goods sold	435
Profit	365

Stock = 200 × £1.15 = £230

(b) The LIFO approach to the issue of units for sale, where:
(i) the calculation is carried out at the date of sale; and
(ii) the calculation is carried out at the end of the month without regard for the date of sale; and

Date	*Number of units purchased*	*Unit cost*	*Number of units sold*	*Cost of goods sold (i)*	*Cost of goods sold (ii)*	*Stock (i)*	*Stock (ii)*
				£	£		
Jan. 5	100	£1.00					
Jan. 10			50	50		50	
Jan. 15	200	£1.10					
Jan. 17			150	165		55	
Jan. 24	300	£1.15					
Jan. 30			200	230	345	115	100
					110		110
	600		400	345	455	220	210

either (i):

	£	
Sales 400 × £2	800	
Cost of goods sold	345	
Profit	455	Stock = (50 × £1.00) + (50 × £1.10) + (100 × £1.15)
		= 50 + 55 + 115 = 220

or (ii):

	£	
Sales 400 × £2	800	
Cost of goods sold	455	
Profit	345	Stock = (100 × £1) + (100 × £1.10)
		= 100 + 110 = £210

Note that in all cases the Cost of goods sold plus the unsold Stock = £665.

(c) The average-cost approach to the issue of units for sale, making the calculation at the end of the month without regard for the date of sale.

Date	*Number of units purchased*	*Unit cost*	
			£
Jan. 5	100	£1.00	100
Jan. 10			
Jan. 15	200	£1.10	220
Jan. 17			
Jan. 24	300	£1.15	345
Jan. 30			
	600		665

Average cost = £665/500 = £1.108

	£	
Sales 400 × £2	800	
Cost of goods sold 400 × £1.108	443	
Profit	357	Stock 200 × £1.108 = £222

B9.2

Group of items	*Basis*	*Stock value*
		£
A	Cost	1,000
B	Net realisable value	800
C	Net realisable value	1,900
D	Cost	3,000
Total stock		6,700

Chapter 10

Test your understanding

A10.9

The liability to the supplier will increase and the ownership interest will decrease (recorded as an increase in the cost of goods sold).

A10.10

The recorded asset of cash will decrease and the recorded liability to the supplier will decrease.

A10.11

First the original incorrect entry must be reversed. When the entry was made, it was treated as an increase in the ownership interest and an increase in the asset of debtor. This error must be reversed by decreasing the ownership interest and decreasing the asset of debtor.

Then the correct entry must be made which is a decrease in the ownership interest and an increase in a liability to the landlord.

Application

B10.1

The aim of the calculation is to show the cost of telephone used during the year.

	£
Cash paid	3,500
Less rental in advance for July, one-third of £660	(220)
Add calls for May and June, two-thirds of £900	600
Expense of the period	3,880

The rental paid in advance will be shown as a prepayment of £220 in the balance sheet and the calls made during May and June will be shown as an accrual of £600 in the balance sheet.

B10.2

		Asset	*Liability*	*Ownership interest:profit of the period*
Date	*Transactions with security company*	*Cash*	*Security company*	*Security expense*
Year 1		£	£	£
Mar. 31	Invoice received £800		800	(800)
Apr. 5	Security company paid £800	(800)	(800)	
June 30	Invoice received £800		800	(800)
July 5	Security company paid £800	(800)	(800)	
Sept. 30	Invoice received £800		800	(800)
Oct. 5	Security company paid £800	(800)	(800)	
Dec. 31	Invoice received £800		800	(800)
	Totals	(2,400)	800	(3,200)

B10.3

The tax charge reduces the ownership interest and is shown as an expense of £8,000 in the profit and loss account. The accounting equation remains in balance because there is a matching liability of £8,000 recorded. However, the liability is split as £6,000 current liability and £2,000 deferred liability to reflect different patterns of payment of the overall liability.

Problem solving and evaluation **C10.1**

The year-end is 31 December Year 1.

Item	*Description*	*Amount*		
		£		
1	Invoice dated 23 December for goods received 21 December.	260	Increase asset of stock.	Increase liability to supplier.
2	Invoice dated 23 December for goods to be delivered on 3 January Year 2.	310	Nothing recorded – this will be an asset and a liability of the following year.	
3	Foreman's note of electricity consumption for month of December – no invoice yet received from electricity supply company.	100	Decrease ownership interest (expense of electricity).	Increase liability to electricity supplier.
4	Letter from employee claiming overtime payment for work on 1 December and note from personnel office denying entitlement to payment.	58	Nothing recorded in the financial statements because it is not yet clear that there is an obligation (might be a contingent liability note).	
5	Telephone bill dated 26 December showing calls for October to December.	290	Decrease ownership interest (expense of telephone calls).	Increase liability to phone company.
6	Telephone bill dated 26 December showing rent due in advance for period January to March Year 2.	90	Nothing recorded – this will be an expense of the following year.	
7	Note of payment due to cleaners for final week of December (to be paid on 3 January under usual pattern of payment one week in arrears).	48	Usually nothing recorded if payment in arrears is normal, since the corresponding payment from January Year 1 will be included in the year's expense.	
8	Invoice from supplier for promotional calendars received 1 December (only one-third have yet been sent to customers).	300	Decrease ownership interest £300 (expense of calendars).	Increase liability to calendar supplier £300.
			Increase stock of calendars by £200.	Reduce expense by £200.
9	Letter dated 21 December Year 1 to customer promising a cheque to reimburse damage caused by faulty product – cheque to be sent on 4 January Year 2.	280	Decrease ownership interest (expense of damage).	Increase liability to customer.
10	Letter dated 23 December promising donation to local charity – amount not yet paid.	60	Decrease ownership interest (expense of donation).	Increase liability to charity.

Chapter 11

Test your understanding **A11.6**

Reduce revenue by £40,000 (two-thirds of £60,000) and increase balance sheet deferred income by £40,000. Effect on profit and loss account is to reduce reported profit. Reason is application of the matching concept. The £40,000 deferred income will be transferred to profit and loss account over the next two years.

A11.7

Increase expense of provision for repairs by £50,000 (reporting as an expense in the profit and loss account) and create a liability under the 'provisions' heading. Effect on profit and loss account is to reduce reported profit.

Application

B11.1

The profit and loss account would show an expense of £8,000 provision in Year 1 and an expense of £9,000 provision in Year 2. The actual amount of expenditure as shown in the question would be set against the provision in the balance sheet.

Date of repair	*Profit & loss expense*	*Balance sheet provision in total before expense charged*	*Actual expense matched against provision*	*Provision remaining in balance sheet*
Year	£	£	£	£
1	8,000	8,000	4,500	3,500
2	9,000	12,500	8,000	4,500
3	*500	4,500	*4,500	nil

*The actual cost in Year 3 is £5,000 but there is only £4,500 provision remaining, so the extra £500 must be charged to profit and loss account as an unexpected expense.

Note that the total amount charged to profit and loss account is £17,500 and the total amount paid out for repair work is also £17,500. The accounting entries in the profit and loss account are an attempt to spread the expense on the basis of matching with revenue, but the total must be the same over the three-year period, whatever matching approach is taken.

Date of repair	*Profit and loss expense using provision approach*	*Profit and loss expense using actual repair amount paid*
	£	£
1	8,000	*4,500*
2	9,000	*8,000*
3	*500	*5,000*
Total	*17,500*	*17,500*

B11.2

The grant will initially be recorded as an increase in the asset of cash and an increase in the balance sheet liability item headed ‘deferred income’. The deferred income is transferred from the liability to revenue over three years (so that the ownership interest increases evenly over the three-year period).

Chapter 12

Application

B12.1

(a) Increase the asset of cash by £50,000. Increase the ownership interest by the nominal value of shares, £50,000.
(b) Increase the asset of cash by £75,000. Increase the ownership interest by (i) nominal value of shares £25,000 and (ii) share premium £50,000.
(c) Increase asset of property by £20,000. Increase ownership interest by revaluation reserve £20,000.

B12.2

(a) Decrease asset of cash by £20,000. Decrease ownership interest by £20,000 as a reduction in the owners’ claim on the business.
(b) Record a note in the directors’ report. There is no liability at the balance sheet date.

B12.3 Nithsdale Ltd

		(a)	(b)	(c)
	£000s	£000s	£000s	£000s
Cash	20	70.0	20	260
Other assets less liabilities	320	320.0	320	320
	340	390.0	340	580
Ordinary shares (400,000 of 25 pence each)	100	112.5	125	120
Share premium	40	77.5	40	260
Reserves of retained profit	200	200.0	175	200
	340	390.0	340	580

B12.4

If the directors decide that they wish to incorporate the revaluation in the balance sheet, then the asset will be reported at £380,000. The difference between the previous recorded book value £250,000 and the new value £380,000 is £130,000. This is an increase in the ownership interest and will be reported as a revaluation reserve as part of the total ownership interest.

B12.5

In this case the value has decreased by £10,000. This is a reduction in the value of the asset and a decrease in the ownership claim. On grounds of prudence the loss should be reported in the profit and loss account immediately and the recorded book value of the asset should be reduced.

Chapter 13

Application

B13.1

(a) Hope plc

(i) Liquidity

		Hope plc	
Ratio	*Definition in words*	*Workings*	*Result*
Current ratio	Current assets:Current liabilities	2,360:1,240	1.90:1
Acid test	(Current assets – Stock): Current liabilities	(2,360 – 620):1,240	1.40:1
Stock holding period*	$\frac{\text{Average stock held}}{\text{Cost of sales}} \times 365$	$\frac{620}{2{,}750} \times 365$	82.3 days
Customers collection period	$\frac{\text{Trade debtors}}{\text{Credit sales}} \times 365$	$\frac{1{,}540}{6{,}200} \times 365$	90.7 days
Suppliers payment period**	$\frac{\text{Trade creditors}}{\text{Credit purchases}} \times 365$	$\frac{300}{2{,}750} \times 365$	39.8 days

* Assuming the opening stock is the same as the closing stock.
** Assuming purchases = cost of goods sold

(a) 50,000 × 25p = £12,500; 50,000 × £0.75 = £37,500.
(b) Transfer £25,000 from reserves to share capital.
(c) 80,000 × £3 = £2400,000; 80,000 × 25p = £20,000; 80,000 × £2.75 = £220,000.

(ii) Analysis of management performance

		Hope plc	
Ratio	*Definition in words*	*Workings*	*Result*
Return on shareholders' equity	$\frac{\text{Profit after tax}}{\text{Share capital + Reserves}} \times 100\%$	$\frac{692}{1{,}470} \times 100$	47.1%
Return on capital employed	$\frac{\text{Profit before interest and tax}}{\text{Total assets – Current liabilities}} \times 100\%$	$\frac{1{,}256}{2{,}870} \times 100$	43.8%
Net profit on sales	$\frac{\text{Profit before interest and taxes}}{\text{Sales}} \times 100$	$\frac{1{,}256}{6{,}200} \times 100$	20.3%
Gross profit percentage	$\frac{\text{Gross profit}}{\text{Sales}} \times 100$	$\frac{3{,}450}{6{,}200} \times 100\%$	55.6%
Total assets usage	$\frac{\text{Sales}}{\text{Total assets}}$	$\frac{6{,}200}{1{,}750 + 2{,}360}$	1.5 times
Fixed assets usage	$\frac{\text{Sales}}{\text{Fixed assets}}$	$\frac{6{,}200}{1{,}750}$	3.5 times

(iii) Gearing (leverage)

		Hope plc	
Ratio	*Definition in words*	*Workings*	*Result*
Debt/equity ratio	$\frac{\text{Debt + Preference share capital}}{\text{Ordinary share capital + Reserves}} \times 100\%$	$\frac{1{,}400}{1{,}470} \times 100$	95.2%
Interest cover	$\frac{\text{Profit before interest and tax}}{\text{Interest}}$	$\frac{1{,}256}{84}$	15.0 times

(c) Investor ratios

		Hope plc	
Ratio	*Definition in words*	*Workings*	*Result*
Earnings per share	$\frac{\text{Profit after tax for ordinary shareholders}}{\text{Number of ordinary shares}}$	$\frac{692}{900}$	76.9 pence
Price/earnings ratio	$\frac{\text{Share price}}{\text{Earnings per share}}$	$\frac{1{,}100}{76.9}$	14
Dividend cover (payout ratio)	$\frac{\text{Earnings per share}}{\text{Dividend per share}}$	$\frac{76.9}{36.7}$	2.1 times
Dividend yield	$\frac{\text{Dividend per share}}{\text{Share price}} \times 100\%$	$\frac{36.7}{1{,}100} \times 100\%$	3.34%

Chapter 14

Problem solving and evaluation

C14.1 Trend analysis: Safe and Sure

Safe and Sure

	Year 3	Year 4	Year 5	Year 6	Year 7
Group revenue	309.1	389.0	474.1	600.3	734.6
Group profit before tax	74.4	90.4	114.5	147.0	177.0
Tax	(27.2)	(33.9)	(44.3)	(52.4)	(62.2)
Group profit after tax	47.2	56.5	70.2	94.6	114.8
Earnings per share	4.88	6.23	8.02	9.71	11.74
Dividends per share	1.32	1.69	2.17	2.50	3.02
Share capital	19.4	19.4	19.4	19.5	19.6
Reserves	160.8	195.3	265.4	350.9	444.7
Total equity	180.2	214.7	284.8	370.4	464.3
Ratios					
Pre-tax profit to sales	24.1%	23.2%	24.2%	24.5%	24.1%
Tax charge as % of pre-tax profit	36.6%	37.5%	38.7%	35.6%	35.1%
Dividend cover	3.70	3.70	3.70	3.88	3.89
Growth in revenue	n/a	25.9%	21.9%	26.6%	22.4%
Growth in eps	n/a	27.7%	28.7%	21.1%	20.9%
Growth in dividend per share	n/a	28.0%	28.4%	15.2%	20.8%
Return on shareholders' equity	26.2%	26.3%	24.7%	25.5%	25.3%

Commentary: The company has exceeded its annual earnings growth target of 20% in each year for which calculations can be made. The dividend cover is relatively high, indicating a policy of retaining new wealth to finance expansion. In Year 6 the dividend cover increased because the dividend growth decreased. In Year 7 the cover remains higher and the dividend growth improved. With the expansion the company has maintained its rate of return on shareholders' equity. The company is likely to be attractive to investors if future prospects are similar to the historical trend.

Chapter 15

Application

B 15.1

£120m + £8m – £10m = £118m

B 15.2

£20m + £6m – £4m = £22m

B 15.3

£34m – £5m + ? = £37m Missing number is £8m acquisition.

Problem solving and evaluation

C 15.1
Transport plc

Notes		£m	£m
	Cash flows from operating activities		
1	Profit before taxation		132
	Adjustment for items not involving a flow of cash:		
	Depreciation	39	
	Gain on disposal of equipment	(7)	
			32
	Adjusted profit		164
	(Increase) in inventories	(6)	
	(Increase) in trade receivables	(2)	
	Increase in trade payables	5	
	Increase/(decrease) in cash due to working capital changes		(3)
	Cash generated from operations		161
2	Interest paid		(19)
3	Taxes paid		(32)
	Net cash inflow from operating activities		110
	Cash flows from investing activities		
4	Purchase of vehicles	(90)	
5	Proceeds from sale of vehicles	20	
6	Investments acquired	(20)	
	Interest received	5	
	Net cash used in investing activities		(85)
	Cash flows from financing activities		
7	Proceeds from issue of share capital	35	
8	Proceeds from long-term borrowing	8	
	Dividends paid	(31)	
	Net cash raised from financing activities		12
	Increase/(decrease) in cash and cash equivalents		37
9	**Cash and cash equivalents at the start of the period**		**6**
9	**Cash and cash equivalents at the end of the period**		**43**

Working note 1

	£m
Operating profit before taxes	117
Is there any interest expense included in this figure? If so add it back to arrive at:	20
Operating profit before deducting interest payable and taxes	137
Is there any interest received/receivable or any dividends received in this figure? If so deduct it to arrive at:	(5)
Operating profit before deducting interest payable and taxes and before including interest receivable and dividends received.	132

Working note 2
Interest paid = expense £20m plus liability at the start £7m minus liability at the end £8m.

Working note 3
Taxes paid = tax charge of the period £35m plus liability at the start £7m minus liability at the end £10m.

Working note 4
The vehicles at cost start with a balance of £130m. Additions are £90m and disposals cost £25m originally, leaving a balance of £195m.

Working note 5
The accumulated depreciation starts with a balance of £52m. This increases by the expense of the period £39m and decreases by the accumulated depreciation of the vehicles sold £12m, leaving a balance of £79m. The net book value of the vehicles sold was £13m (£25m – £12m). Deduct this from the proceeds of sale £20m to calculate the gain on disposal of £7m shown in the income statement.

Working note 6
The balance sheet investments increase by £20m. Assume no sales.

Working note 7
Increase in share capital £32m plus increase in share premium £3m.

Working note 8
Increase in borrowings £8m. Assume no repayments.

Notes		£m	£m
	Cash flows from operating activities		
1	Cash receipts from customers		318
2	Cash paid to suppliers and employees		(144)
	Cash paid for administrative and selling expenses		(13)
	Cash generated from operations		161
	Interest paid		(19)
	Taxes paid		(32)
	Net cash inflow from operating activities		110
	Cash flows from investing activities		
	Purchase of vehicles	(90)	
	Proceeds from sale of vehicles	20	
	Investments acquired	(20)	
	Interest received	5	
	Net cash used in investing activities		(85)
	Cash flows from financing activities		
	Proceeds from issue of share capital	35	
	Proceeds from long-term borrowing	8	
	Dividends paid	(31)	
	Net cash used in financing activities		12
	Increase/(decrease) in cash and cash equivalents		37
	Cash and cash equivalents at the start of the period		**6**
	Cash and cash equivalents at the end of the period		**43**

Working note 1
Revenue in income statement £320m plus receivables at start of period £21m minus receivables at the end of the period £23m.

Working note 2
Purchases = cost of goods sold £143m plus inventory at the end £26m less inventory at the start £20m = £149m.

Payment to suppliers and employees = = £149m plus payables at the start £13m less payables at the end £18m.

Appendix III

Solutions to numerical and technical questions in Management Accounting

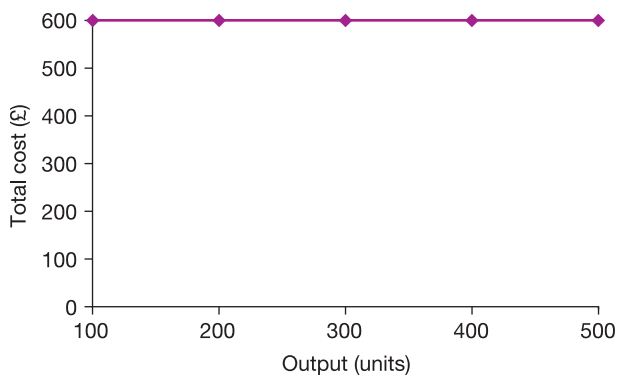
Note that solutions are provided only for numerical and technical material since other matters are covered either in the book or in the further reading indicated.

Chapters 16 and 25 have no solutions given in this Appendix because there are no numerical questions.

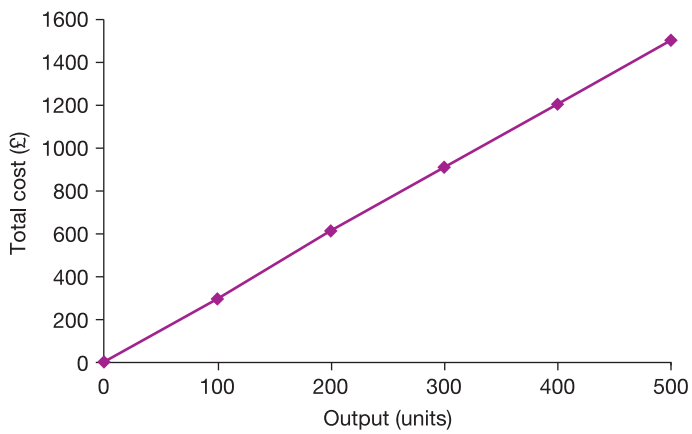
Chapter 17

Application **B17.5**

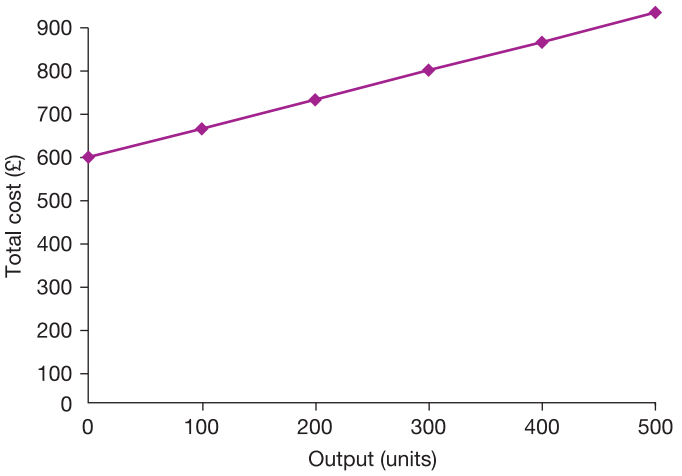
(a) Cost X is a fixed cost because *total* cost does not vary with output.



(b) Cost Y is a variable cost because total cost varies in direct proportion to output and is zero when output is zero.



(c) Cost Z is a semi-variable cost because total cost varies in direct proportion to output but has a value of £600 when output is zero (seen by extending the graph until it meets the vertical axis). The fixed cost is £600.

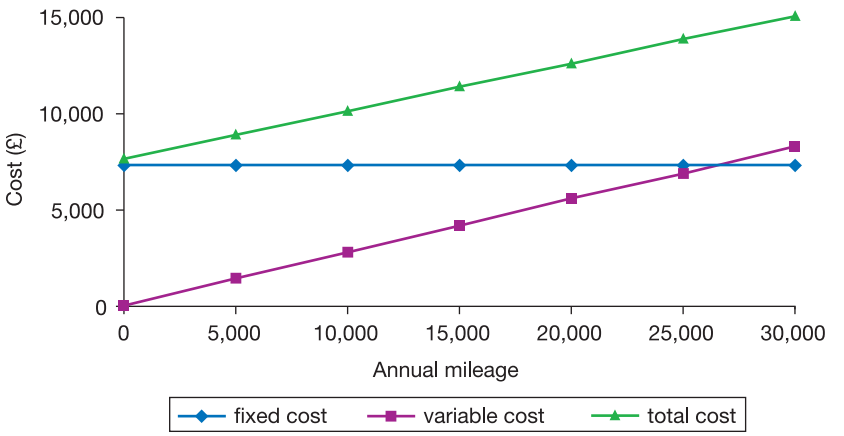


B17.6

(a) The table of costs for one year based on variable mileage within the year is as follows:

Mileage per annum	*5,000*	*10,000*	*15,000*	*20,000*	*30,000*
	£	£	£	£	£
Variable costs					
Spare parts	180	360	540	720	1,080
Fuel	700	1,400	2,100	2,800	4,200
Tyres	400	800	1,200	1,600	2,400
Total variable cost	1,280	2,560	3,840	5,120	7,680
Fixed costs					
Service costs per year	900	900	900	900	900
Insurance	800	800	800	800	800
Depreciation	4,800	4,800	4,800	4,800	4,800
Total fixed cost	6,500	6,500	6,500	6,500	6,500

(b) Note that in drawing the graph it is necessary to insert a point for 25,000 miles (although no calculation is required because the straight line is formed from the data already calculated).



(c) Average cost per mile

Mileage per annum	*5,000*	*10,000*	*15,000*	*20,000*	*30,000*
Variable cost per mile (pence)	25.6	25.6	25.6	25.6	25.6
Fixed cost per mile (pence)	130.0	65.0	43.3	32.5	21.7
Average cost per mile (pence)	155.6	90.6	68.9	58.1	47.3

(d) All total costs follow a straight line. Total fixed costs do not depend on mileage. Total variable costs increase directly with mileage. Total fixed plus variable costs start at £6,500 for zero miles and increase in direct proportion to mileage. The average cost per mile for each year falls as the annual mileage increases. Note that for tyres a proportionate cost has been calculated where the mileage is not exactly 15,000 miles. Note also that depreciation has been included as a fixed cost because it does not depend on mileage covered.

B17.7

		£
Metal piping	Product	12,000
Wages to welders and painters	Product	9,000
Supplies for welding	Product	1,400
Advertising campaign	Period	2,000
Production manager's salary	Period	1,800
Accounts department computer costs for dealing with production records	Period	1,200

The costs incurred during May relate to 4,000 towel rails, so allocate costs on this basis. Product costs are £22,400 in total, or £5.60 per towel rail. There are 500 towel rails remaining in stock at the end of the month which would have a value of £(500 × 5.60) = £2,800.

Most business would use a value higher than £5.60 to take some of the period costs into account (e.g. a proportion of the production manager's salary). However, this is a matter of judgement where others would charge all period costs in the profit and loss account.

Chapter 18

Application

B18.1

Step 1: Allocate costs to departments using a suitable method for each department

	Total	*Assembly*	*Joinery*	*Canteen*
	£	£	£	£
Indirect labour[1]	90,000	48,000	36,000	6,000
Indirect material[2]	81,000	54,000	27,000	–
Heating and lighting[3]	25,000	10,000	12,000	3,000
Rent and rates[4]	30,000	12,000	14,400	3,600
Depreciation[5]	56,000	30,000	24,000	2,000
Supervision[6]	45,000	24,000	18,000	3,000
Power[7]	36,000	18,000	16,000	2,000
	363,000	196,000	147,400	19,600

Notes

1 Allocate indirect labour on the basis of number of employees 80:60:10.
2 Allocate indirect materials in proportion to direct materials 100:50.
3 Allocate heating and lighting in proportion to floor space 20:24:6.
4 Allocate rent and rates in proportion to floor space 20:24:6.
5 Allocate depreciation by reference to the value of machinery used in each department 300:240:20.
6 Allocate supervision on the basis of number of employees 80:60:10.
7 Allocate power on the basis of kilowatt hours 9:8:1.

Step 2: Allocate service department costs to production departments.

	Total	*Assembly*	*Joinery*	*Canteen*
	£	£	£	£
From previous table	363,000	196,000	147,400	19,600
Allocate canteen to assembly and joinery 80:60		11,200	8,400	(19,600)
	363,000	207,200	155,800	

Step 3: Allocate total overhead costs of each production department to units produced during the period.

Divide the total cost of each department by the number of direct labour hours.

Assembly: £207,200/12,640 = £16.39 per direct labour hour
Joinery: £155,800/8,400 = £18.55 per direct labour hour

Step 4: Find the overhead cost of a specific job.

		£
Assembly	£16.39 × 3 hours	49.17
Joinery	£18.55 × 4 hours	74.20
Total overhead cost		123.37

B18.2

Statement of cost of production of 5,000 golf bags:

	£	£
Direct materials 5,000 × £40	200,000	
Direct labour 5,000 × £25	125,000	
Prime cost		325,000
Variable production overhead 5,000 × £10	50,000	
Fixed production overhead	100,000	
Production overhead cost		150,000
Total product cost		475,000

B18.3

(a) The use of a machine hour rate is appropriate for Department 1, which is heavily dependent on machine hours, but not for Department 2, which is more dependent on labour hours. The production overhead should be allocated according to the factor which most closely causes it to be incurred. In Department 1 this is likely to be machine hours but in Department 2 it is more likely to be labour hours.

(b) Applying a rate of £5.60 to 48,000 machine hours, the overhead absorbed was £268,800. This was less than the amount of overhead incurred, £275,000, and so it is said that overheads are underabsorbed by £6,200. The use of estimated overhead absorption rates, based on budget, is necessary for an estimation of cost before the true costs are known. However, the full actual costs have to be accounted for at the end of the period and so a further £6,200 must be charged to the profit and loss account in addition to the costs charged as jobs proceeded.

Chapter 19

Test your understanding

A19.10

(a) 16 components are charged to the job card and used as part of the value of work-in-progress.
(b) The amount of £600 is added to work-in-progress, split as shown between the two jobs mentioned.
(c) The job card is closed and the record is transferred to finished goods stock.

Application

B19.1

Direct costs	
Materials used:	£
500 drums of milk	75,000
Cartons	4,000
Cheesemakers' wages	6,000
Prime cost	85,000
Overhead costs	
Cleaning and hygiene	1,200
Rent, rates, electricity	8,000
Cost of production	94,200

B19.2

Job cost record: Job 801		
3 May	Direct materials	112,000 †
30 May	Direct labour	10,000 ♥
	Prime cost	122,000
30 May	Production overhead:	20,600
	Total production cost	*142,600*
	To finished goods	(142,600)
	Work-in-progress	*nil*

Job cost record: Job 802		
3 May	Direct materials	32,000 †
30 May	Direct labour	5,000 ♥
	Prime cost	37,000
30 May	Production overhead:	10,300
	Total production cost	*47,300*
	Finished goods	(47,300)
	Work-in-progress	*nil*

Job cost record: Job 803		
3 June	Direct materials	12,800 †
30 June	Direct labour	5,000 ♥
	Prime cost	17,800
30 June	Production overhead:	10,300
	Total production cost	*28,100*
	Finished goods	28,100
1 May	*Work-in-progress*	*nil*

Note on production overheads:

	£
Rent, rates and electricity	18,000 ‡
Stain, varnish, etc.	22,500 ♣
Security	700 φ
	41,200

Labour cost is £20,000 in total so production overhead is £2.06 per £ of labour.

Problem solving and evaluation

C19.1 Frames Ltd

Job cost estimate for 500 single- and 200 double-glazed units:

	Single	*Double*	*Total*
Quantity	500	200	
	£	£	£
Direct material[1]	45,000	26,000	71,000
Direct labour[2]	16,250	8,000	24,250
Prime cost	61,250	34,000	95,250
Variable production overhead[3]	19,500	9,600	29,100
Fixed production overhead[4]	20,000	10,000	30,000
Total cost of production	100,750	53,600	154,350

Notes

1 Direct material: single 500 × £90 = £45,000; double 200 × £130 = £26,000.
2 Direct labour: single 500 × £32.50 = £16,250; double 200 × £40 = £8,000.
3 Variable production overhead: single 500 × £39 = £19,500; double 200 × £48 = £9,600.
4 Fixed overhead rates: single 160/4 = £40 per unit; double 100/2 = £50 per unit; applied to 500 units single = £20,000 and to 200 units double = £10,000.

C19.2

430 packages (needs 2 shifts): profit for 1 day

	£	£
Selling price 430 packages at £25.20		10,836
Cost of direct materials 430 at £23.75	10,213	
Cost of labour (£100 + £120)	220	
Supervision £40	40	
Other fixed overheads £280	280	
Depreciation £100	100	
		10,853
Net loss		(17)

880 packages (needs 3 shifts): profit for 1 day

	£	£
Selling price 880 packages at £25.00		22,000
Cost of direct materials 880 at £23.75	20,900	
Cost of labour (£100 + £120 + £160)	380	
Supervision £40 + £40	80	
Other fixed overheads £280	280	
Depreciation £100	100	
		21,740
Net profit		260
Net profit per package		£0.30

1,350 packages (needs 3.8 shifts): profit for 1 day

	£	£
Selling price 1,350 packages at £24.80		33,480
Cost of direct materials 1,350 at £23.75	32,063	
Cost of labour (£100 + £120 + £160 + £100)	480	
Supervision £40 + £40 + £20	100	
Other fixed overheads £280 + £100	380	
Depreciation £100 + £100	200	33,223
Net profit		257
Net profit per package		£0.19

Explanation. The 880-package option is the preferred one because it gives the benefit of a higher volume of profit without increasing the fixed costs. The 1,350-package option takes up more fixed costs and so reduces unit profit.

Chapter 20

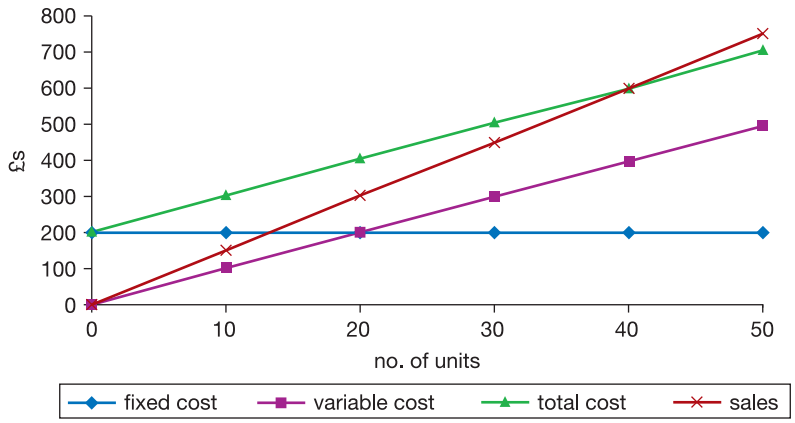
Application

B20.1

Contribution is £5.50 – £3.00 = £2.50.

Breakeven point equals fixed cost/contribution = 5,000/2.50 = 2,000 units.

B20.2



B20.3 Montrose Glass Products Ltd

(a) If Basic closes down there is a lost contribution of [£45 – £(15 + 20 + 5)] = £5. Fixed costs are carried in any event.

(b) If Standard closes down, the variable cost of £37 is saved, compared with revenue of £35. The company will gain £2,000 from closing down the Standard line.

(c) The best advice is to close down Standard but not Basic.

B20.4 Chris Gibson Kitchenware Ltd

(a)

	Dishwashers £000s	*Fridges £000s*	*Ovens £000s*	*Total £000s*
Sales	180	330	270	780
Variable costs	(120)	(150)	(132)	(402)
Contribution	60	80	138	378
Fixed cost				(268)
Total profit				110

(b) Dishwashers should not be dropped, because they make a contribution to fixed cost and profit. If production ceased the contribution of £60,000 would be lost but the fixed overheads would continue at £110,000. Overall the profit would reduce to £50,000. It may be that in the longer term an element of fixed cost can be identified as related to dishwashers alone. If this element were to exceed £60,000 it might be reasonable to discontinue production of dishwashers and discontinue the fixed cost.

B20.5 Capital Tours Ltd

(a) Total costs are £180,000 of which £60,000 are fixed costs. Variable cost is therefore £120,000 over 1,000 tours, or £120 per tour.
Selling price = £200 per person, contribution = £80 per person.
At new offer price of £140 per tour, contribution = £20 per person and so is acceptable in the short term.

(b) The offer is acceptable provided it does not displace any tours for which £200 would be paid. Also there must be no risk of offending existing customers who have already paid £200. If the new lower price became common knowledge, the price might be driven down so that the breakeven point would increase and more tours would have to be sold to achieve the same total profit.

Problem solving and evaluation

C20.1 Dairyproducts Ltd

	Cartons of cream	*Aerosol cans of cream*	*Packets of cheese*	*Total*
Units of output	400,000	96,000	280,000	
	£	£	£	£
Selling price	0.75	1.05	1.30	
Variable cost	0.45	0.50	1.00	
Contribution per unit	0.30	0.55	0.30	
Total contribution	120,000	52,800	84,000	256,800
Fixed cost	60,000	24,000	56,000	140,000
Net profit of current prodn, per week				116,800
Annual profit				5,840,000
Range of demand for aerosol cream cheese				
		£	£	£
Volume		60,000	80,000	100,000
		£	£	£
Sales price		1.50	1.40	1.15
Variable cost		0.50	0.50	0.50
Contribution per unit		1.00	0.90	0.65
Total contribution per week		60,000	72,000	65,000
Annual for 50 weeks			3,600,000	
Less:				
Additional advertising		(1,000,000)		
Modification cost		(400,000)		
Additional fixed cost		(500,000)		
Net benefit		1,700,000		

Reducing production of cream cartons by 20% per annum will lose £120,000 × 50 × 20%, i.e. £1,200,000.

Reducing production of packet cheese by 25% per annum will lose £84,000 × 50 × 25%, i.e. £1,050,000.

The net benefit of the new product is therefore greater than the loss on either of the options withdrawn.

The recommendation is to reduce packet cheese and replace with aerosol cream cheese. The only possible warning here is that there is only £150,000 of difference between withdrawing cream cartons and withdrawing packet cheese. If the growing customer dissatisfaction with cream in cartons is serious, the longer-term view might prevail over the short-term recommendation.

Chapter 21

Test your understanding

A21.15

1,000 + 4,000 – 4,200 = 800 units in store

A21.16

	Jan	*Feb*	*Mar*	*Apr*	*May*	*June*
	£	£	£	£	£	£
Sales	12,000	13,000	14,000	13,500	12,600	11,100
Cash received – budget	nil	12,000	13,000	14,000	13,500	12,600

A21.17

	£
Goods purchased during January	18,000
Owing to creditors at end of January	13,600
Cash paid for January purchases	4,400
Payment for amounts owed at start	12,500
Total paid	16,900

A21.18

Cost of indirect materials in March £500, split £200 variable and £300 fixed.

During April direct labour hours will be 20% higher and it is known that variable indirect material is proportionate to direct labour hours, so increase variable cost by 20% from £200 to £240. Fixed cost remains constant so total budget is £540.

Application

B21.1 Garden Ornament Company

From the information presented in Tables T 1 to T 5 the various detailed budgets are prepared as shown in Tables T 6 to T 18. These lead to the master budget set out in Tables T 19 to T 21.

Sales budget: sales and debtors

The sales budget sets out the volume of sales expected for each product, multiplied by the expected selling price, to obtain the total sales by value expected for each product. The total sales for the year ahead may then be calculated, shown in bold print in the sales budget.

(T 6)

Sales budget	*Ref.*	*Ducks*	*Herons*	*Total for year*
Unit sales for year	*T 1*	8,000	15,000	
Unit selling price	*T 1*	£30	£45	
Total sales		£240,000	£675,000	**£915,000**

The year-end debtors are calculated as half of one month's sales (one-twenty-fourth of the total year's sales if these are spread evenly throughout the year).

(T 7)

Debtors' budget	*Ref.*	*Ducks*	*Herons*	*Total for year*
Total sales	*T 6*	£240,000	£675,000	£915,000
		divide by 24	divide by 24	
Debtors at year-end		£10,000	£28,125	**£38,125**

Production plan

(T 8)

Production plan in units	*Ref.*	*Ducks*	*Herons*
Planned sales volume	*T 1*	8,000	15,000
Add planned closing stock of finished goods	*T 3*	–	–
Less opening stock of finished goods	*T 3*	–	–
Planned unit production for year		8,000	15,000

Direct materials budget: Purchases, stock and trade creditors

Once the production plan is decided, the costs of the various inputs to production may be calculated. Direct materials must be purchased to satisfy the production plans, but the purchases budget must also take into account the need to hold stock of raw materials. After the purchases budget has been quantified in terms of cost, the impact on trade creditors may also be established.

The *purchases budget* is based on the units required for production in the period, making allowance for the opening and closing stock of raw materials. The plan is to hold sufficient stock at the end of the period to meet 60% of the following month's production (see T 3). The number of units to be purchased will equal the planned production for the period, plus the planned stock of raw materials at the end of the period (shown in the opening balance sheet at T 5), minus the planned stock of raw materials at the end of the period (calculated in T 8).

(T 9)

Purchases budget in units	*Ref.*	*Ducks*	*Herons*
Production volume	*T 8*	8,000	15,000
Add raw materials stock planned for end of period	*T 3*	400 60% of (8,000/12)	750 60% of (15,000/12)
Less raw materials stock held at start of period	*T 5*	400	750
Purchases of raw materials planned		8,000	15,000

(T 10)

Purchases budget in £s	*Ref.*	*Ducks*	*Herons*	*Total for year*
Volume of purchases	*T 9*	8,000	15,000	
		£	£	**£**
Cost per unit	*T 1*	14	16	
Total purchase cost		112,000	240,000	**352,000**

Trade creditors are calculated as one month's purchases, a relatively uncomplicated procedure in this instance because the purchases remain constant from month to month.

(T 11)

One month's purchases 352,000/12	**£29,333**

The direct materials cost of goods sold must also be calculated at this point, for use in the budgeted profit and loss account. The direct materials cost of goods sold is based on the materials used in production of the period (which in this example is all sold during the period).

(T 12)

Direct materials cost of goods sold	*Ref.*	*Ducks*	*Herons*	*Total for year*
Production in units	*T 8*	8,000	15,000	
		£	£	
Materials cost per unit	*T 1*	14	16	
Total cost of goods to be sold		£112,000	£240,000	**£352,000**

Direct labour budget

The direct labour budget takes the volume of production in units and multiplies that by the expanded labour cost per unit to give a labour cost for each separate item of product and a total for the year, shown in bold print.

(T 13)

Direct labour budget	*Ref.*	*Ducks*	*Herons*	*Total for year*
Production in units	*T 8*	8,000	15,000	
		£	£	**£**
Labour cost per unit	*T 1*	12	13	
Total cost		96,000	195,000	**291,000**

It is also useful to check on the total resource requirement which corresponds to this total labour cost, since it takes time to plan increases or decreases in labour resources. The average direct labour cost was given in (T 1) as £15,000 per person per year. The following calculation assumes that the employees can work equally efficiently on any of the three product lines.

(T 14)

Resource requirement:
Based on an average cost of £15,000 per person per year, the total labour cost of £291,000 would require 19.4 full-time equivalent persons.

Production overhead budget

Production overheads include all those overhead items which relate to the production activity. In this example it includes heat and light, business rates and depreciation. Depreciation is calculated at a rate of 20% on the total cost of equipment held during the year (£190,000 at the start, as shown in (T 5), plus an additional £70,000 noted in (T 4)) (£260,000 × 20% = £52,000).

(T 15)

Production overhead budget	*Ref.*	£
Heat and light	*T 2*	8,000
Production fixed overheads	*T 2*	4,000
Depreciation	*T 4*	52,000
Total		**64,000**

Total production cost budget

Total production cost budget comprises the cost of direct materials, direct labour and production overhead.

(T 16)

Production cost budget	*Ref.*	£
Direct materials	*T 12*	352,000
Direct labour	*T 13*	291,000
Production overhead	*T 15*	64,000
Total		**707,000**

Administration expense budget
(T 17)

Administration budget	*Ref.*	£
Partners' salaries (taken in cash)	*T 2*	55,000
Rent of premises	*T 2*	11,000
Office staff	*T 2*	48,450
Total		**114,450**

Marketing expense budget
The marketing expense budget relates to all aspects of the costs of advertising and selling the product. The information in (T 2) specifies a marketing cost which is dependent on sales, being estimated as 18% of sales value.

(T 18)

Marketing expense budget	*Ref.*	£
18% of £915,000	*T 2 & T 6*	**164,700**

Master budget
The master budget has three components: the budgeted profit and loss account for the year, the budgeted cash flow statement and the budgeted balance sheet. These are now set out using the foregoing separate budgets. Where the derivation of figures in the master budget should be evident from the earlier budgets, no explanation is given, but where further calculations have been performed these are shown as working notes.

Budgeted profit and loss account
(T 19)

Budgeted profit and loss account for the year ended 31 December Year 5

	Ref.	*Ducks*	*Herons*	*Total for year*
		£	£	£
Total sales	*T 6*	240,000	675,000	915,000
Material cost	*T 12*	112,000	240,000	352,000
Labour cost	*T 13*	96,000	195,000	291,000
Total variable cost		208,000	435,000	643,000
Contribution		32,000	240,000	272,000
% on sales		*13.3%*	*35.6%*	
Production overhead	*T 15*			64,000
Gross profit				**208,000**
Administration cost	*T 17*			(114,450)
Marketing cost	*T 18*			(164,700)
Net loss				**(71,150)**

Budgeted cash flow statement

Where expenses are paid for as soon as they are incurred, the cash outflow equals the expense as shown in the budgeted profit and loss account. In the case of cash collected from customers, debtors at the start and end of the period must be taken into the calculation. In the case of cash paid to suppliers the creditors at the start and end of the period must be taken into account. The cash flow statement contains references to working notes which follow the statement and set out the necessary detail.

(T 20)

Budgeted cash flow statement for the year ended 31 December Year 5

	Note	£	£
Cash to be collected from customers	*1*		908,875
Cash to be paid to suppliers	*2*	352,667	
Direct labour	*3*	291,000	
Heat and light	*3*	8,000	
Production fixed overheads	*3*	4,000	
Partners' salaries	*3*	55,000	
Rent of premises	*3*	11,000	
Office staff costs	*3*	48,450	
Marketing costs	*3*	164,700	
			934,817
Net cash inflow from operations			25,942
New equipment to be purchased			70,000
Net cash outflow			(95,942)
Cash balance at start of year	*T 5*		2,500
Cash balance at end of year			(93,442)

Working notes for budgeted cash flow statement

Note 1: Cash to be collected from customers:

	Ref.	£
Sales during the period	*T 6*	915,000
Less credit sales which remain as debtors at the end of the year	*T 7*	38,125
		876,875
Add cash collected from debtors at the start of the year	*T 5*	*32,000*
Cash to be collected from customers		908,875

Note 2: Cash to be paid to suppliers:

	Ref.	£
Purchases during the period	*T 10*	352,000
Less credit purchases which remain as creditors at the end of the year	*T 11*	29,333
		322,667
Add cash paid to creditors at the start of the year	*T 5*	30,000
Cash to be paid to suppliers		352,667

Note 3: Other cash payments

It has been assumed, for the convenience of this illustration, that all other expense items are paid for as they are incurred. In reality this would be unlikely and there would be further calculations of the type shown in Note 2, making allowance for creditors at the start and end of the period.

Budgeted balance sheet
(T 21)

Budgeted balance sheet at 31 December Year 5

	£	£
Equipment at cost (Note 1)		260,000
Accumulated depreciation (Note 2)		(92,000)
Net book value		168,000
Stock of raw materials (Note 3)	17,600	
Trade debtors (T 7)	38,125	
	55,725	
Bank borrowing (T 20)	(93,442)	
Trade creditors (T 11)	(29,333)	
	(122,775)	
Net current liabilities		(67,050)
Total assets less current liabilities		100,950
Partners' capital (Note 4)		100,950

Working notes for budgeted balance sheet

Note 1		
Equipment at cost = £190,000 + £70,000	=	£260,000
Note 2		
Accumulated depreciation = £40,000 + £52,000	=	£92,000
Note 3		
Stock of raw material		
For 400 ducks @ £14 each	5,600	
For 750 herons @ £16 each	12,000	
	17,600	
Note 4		
Partners' capital = £172,100 + (£71,150)	=	£100,950

Comment: Not a promising picture of where the business is likely to be heading but this amount of detail will help identify where action needs to be taken to improve profit and cash flow.

B21.2 Tools Ltd
(Note that in questions of this type there will often be more than one way of interpreting the information given. That is not a problem provided the total column is used to check for arithmetic consistency.)

Sales budget
Selling price £90 per unit

	Year 1				*Total*
	Quarter 1	*Quarter 2*	*Quarter 3*	*Quarter 4*	
Modified tool units	4,050	4,200	4,350	3,900	16,500
	£	£	£	£	£
Sales	364,500	378,000	391,500	351,000	1,485,000

Production budget for each quarter
By units, production must meet the sales of this quarter and 100% of planned sales of the next quarter:

	Year 1				*Total*
	Quarter 1	*Quarter 2*	*Quarter 3*	*Quarter 4*	
Modified tool units	*4,050*	*4,200*	*4,350*	*3,900*	*16,500*
For sales of quarter	4,050	4,200	4,350	3,900	
Add 10% of next qtr sales	420	435	390	405	405
	4,470	4,635	4,740	4,305	
Less stock of previous qtr	–	420	435	390	
Production required	4,470	4,215	4,305	3,915	16,905

Converting from units of production to costs of production

	Year 1				Total
	Quarter 1	*Quarter 2*	*Quarter 3*	*Quarter 4*	
Units to be produced	4,470	4,215	4,305	3,915	16,905
	£	£	£	£	£
Direct materials	107,280	101,160	103,320	93,960	405,720
Direct labour	134,100	126,450	129,150	117,450	507,150
Fixed overhead*	44,700	42,150	43,050	39,150	169,050
	286,080	269,760	275,520	250,560	1,081,920
*Includes depreciation of	5,288	4,987	5,093	4,632	20,000

(Note that fixed overhead includes depreciation of £20,000 per annum, allocated on the basis of a cost per unit produced. Total production is 16,905 units so depreciation is £1.183 per unit.)

Cash budget for each quarter

	Year 1				Total
	Quarter 1	*Quarter 2*	*Quarter 3*	*Quarter 4*	
	£	£	£	£	£
Cash from customers					
1/3 current quarter	121,500	126,000	130,500	117,000	
2/3 previous quarter	–	243,000	252,000	261,000	
Total cash received	121,500	369,000	382,500	378,000	1,251,000
Purchase of fixed assets	100,000				100,000
Payment to suppliers*	83,520	103,200	102,600	97,080	386,400
Wages	134,100	126,450	129,150	117,450	507,150
Fixed overhead (excl depn)	39,412	37,163	37,957	34,518	149,050
Total cash payments	357,032	266,813	269,707	249,048	1,142,600
Receipts less payments	(235,532)	102,187	112,793	128,952	(108,400)

*Schedule of payments to suppliers on one month's credit.

The initial stock of 500 units will be paid for at the start of month 2 together with one-third of the units required for month 1's production. Thereafter the payment is always on a one-third basis because the 500 units of stock remains constant.

	Quarter 1	*Quarter 2*	*Quarter 3*	*Quarter 4*	*Total*
	£	£	£	£	£
Direct materials purchased	107,280	101,160	103,320	93,960	405,720
Payment for initial stock	12,000				12,000
Two months' purchases	71,520	67,440	68,880	62,640	
One month from previous qtr	–	35,760	33,720	34,440	31,320
Total payment	83,520	103,200	102,600	97,080	386,400

Comment on cash flow statement

This is the type of statement which would be required by someone being asked to lend money to the business. The start-up situation requires cash but there is a positive cash flow from operations. The lender would want to add to the cash flow statement a schedule of loan repayments and interest payments to see whether the operational cash flows could meet the financing needs of the business.

B21.3 Bright Papers Ltd

Cash from customers

(£000s)

Sales budget	*Year 1*	*Year 2*	*Year 3*	*Year 4*
Unit sales for year	£800	£950	£1,200	£1,500
Unit selling price	£10.20	£10.56	£11.04	£12.00
Total sales	£8,160	£10,032	£13,248	£18,000

The year-end debtors are calculated on the basis that the sales are spread evenly throughout the year.

(£000s)

Debtors budget	*Year 1*	*Year 2*	*Year 3*	*Year 4*
Total sales	£8,160	£10,032	£13,248	£18,000
Months/12	1/12	1/12	1.5/12	2/12
Debtors at year-end	£680	£836	£1,656	£3,000

Cash received from customers is equal to the year's sales plus debtors at the start of the year less debtors at the end of the year.

(£000s)

Cash received budget	*Year 1*	*Year 2*	*Year 3*	*Year 4*
Total sales	£8,160	£10,032	£13,248	£18,000
Debtors at start	–	£680	£836	£1,656
Debtors at year-end	£(680)	£(836)	£(1,656)	£(3,000)
Cash received	£7,480	£9,876	£12,428	£16,656

Cash paid to suppliers

The purchases budget is based on the units required for production in the period (if necessary making allowance for the opening and closing stock of raw materials).

(£000s)

Purchases budget in units	*Year 1*	*Year 2*	*Year 3*	*Year 4*
Production volume	850	1,000	1,300	1,600
Add raw materials stock planned for end of period	nil	nil	nil	nil
Less raw materials stock held at start of period	nil	nil	nil	nil
Purchases of raw materials planned	850	1,000	1,300	1,600

(£000s)

Purchases budget	*Year 1*	*Year 2*	*Year 3*	*Year 4*
Volume of purchases	850	1,000	1,300	1,600
Cost per unit	£2.04	£2.28	£2.64	£3.00
Total purchase cost	£1,734	£2,280	£3,432	£4,800

Trade creditors allow different credit periods in different years.

(£000s)

Creditors budget	*Year 1*	*Year 2*	*Year 3*	*Year 4*
Total purchases	£1,734	£2,280	£3,432	£4,800
Months/12	2/12	1.5/12	1.5/12	1/12
Creditors at year-end	£289	£285	£429	£400

(£000s)

Cash paid to suppliers	*Year 1*	*Year 2*	*Year 3*	*Year 4*
Total purchase cost	£1,734	£2,280	£3,432	£4,800
Add creditors at start	–	£289	£285	£429
Less creditors at end	(£289)	(£285)	(£429)	(£400)
Cash paid	£1,445	£2,284	£3,288	£4,829

Payments to employees for wages – direct labour budget

The direct labour budget takes the volume of production in units and multiplies that by the expected labour cost per unit to give a labour cost for each separate item of product and a total for the year, shown in bold print.

(£000s)

Direct labour budget	*Year 1*	*Year 2*	*Year 3*	*Year 4*
Production in units	850	1,000	1,300	1,600
Labour cost per unit	£0.60	£0.75	£0.90	£0.90
Total cost	**£510**	**£750**	**£1,170**	**£1,440**

Payment for overheads – production overhead budget

Total production overhead comprises variable and fixed overhead. The variable overhead is calculated using the variable overhead cost per unit multiplied by the number of units produced. The fixed overhead is fixed for each year and is not affected by volume of activity in the period.

(£000s)

Production overhead budget	*Year 1*	*Year 2*	*Year 3*	*Year 4*
Production in units	850	1,000	1,300	1,600
Variable overhead cost per unit	£0.40	£0.50	£0.60	£0.60
Total variable overhead cost	£340	£500	£780	£960
Fixed overhead*	£5,000	£5,100	£5,200	£5,300
Total prodn o'head	£5,340	£5,600	£5,980	£6,260

*For cash flows deduct £1,500 each year.

Cash budgets for each of the four years

	Year 1	*Year 2*	*Year 3*	*Year 4*
	£	£	£	£
Cash from customers	7,480	9,876	12,428	16,656
Cash paid to suppliers	1,445	2,284	3,288	4,829
Wages paid	510	750	1,170	1,440
Variable overhead	340	500	780	960
Fixed overhead*	3,500	3,600	3,700	3,800
Total paid	5,795	7,134	8,938	11,029
Net cash flow	1,685	2,742	3,490	5,627

*Excluding depreciation because that does not involve a cash flow.

Problem solving and evaluation

C21.1 Alpha Ltd

Budgeted profit and loss account

	Original for half-year to 31 March £	*Actual for half-year to 31 March* £	*Note*
Sales	7,800,000	6,240,000	down 20%
Cost of sales	(5,226,000)	(4,305,600)	
Gross profit (original budget at 33%)	2,574,000	1,934,400	31%
Fixed overheads:			
Selling and advertising	(750,000)	(650,000)	Advtg –50%
General administration	(547,250)	(492,525)	
Operating profit	1,276,750	791,875	
Interest payable on medium-term loan	(67,500)	(73,750)	
Royalties payable on sales	(390,000)	(312,000)	
Net profit	819,250	406,125	

(Note the impact of the increase in stock levels has been ignored in this and the next statement because it is a temporary fluctuation which is put right by the end of the year.)

	Actual for half-year to 31 March £	*Revised budget for half-year to 30 Sept* £
Sales	6,240,000	6,240,000
Cost of sales	(4,305,600)	(4,180,800)
Gross profit (original budget at 33%)	1,934,400	2,059,200
Fixed overheads:		
Selling and advertising	(650,000)	(650,000)
General administration	(492,525)	(492,525)
Operating profit	791,875	916,675
Interest payable on medium-term loan	(73,750)	(80,000)
Royalties payable on sales	(312,000)	(312,000)
Net profit	406,125	524,675

The question asks only for the results at 31 March and the revised budget thereafter but the information may be used to reply to the question asked by the directors in relation to the cash flow impact. You may find this more difficult but it is something which you can at least think out in general terms. First of all the measures taken to restore the gross profit must have an impact. Then the directors are controlling the level of stock so that it is not using up resources in the form of cash. Reducing the period of credit given to trade debtors will improve cash flow (basing the calculation on the lower level of actual sales achieved and expected). Finally the cost of goods sold has been controlled better in the second half. This will reduce the amount owing to creditors, even though the period of credit remains unchanged.

Statement of cash flow: improvement through measures taken in second half

	£	£
Additional profit generated through measures taken		118,550
Reduction in stock level	200,000	
Reduction in debtors from two months to one month 6,240,000/6	1,040,000	
One month's creditors based on cost of goods sold: saving (4,305,600 – 4,180,800)/12	10,400	
		1,250,400
Improvement in cash flow due to measures taken at half-year		1,368,950

It may be seen that the most effective improvement in cash flow can be obtained by paying attention to collection of debts, but other measures also have a beneficial effect.

Chapter 22

Test your understanding

A22.14

20,000 blocks require 100,000 kg of material so standard usage is 5 kg per block.
16,000 blocks should use 80,000 kg but actual usage is 80,080 kg. Adverse usage variance is 80 kg at standard cost of £3 per kg, i.e. adverse variance £240.

A22.15

Total variance is £6,000 adverse less £2,500 favourable = £3,500 adverse. So actual costs were £3,500 higher than standard cost, i.e. £39,500.

A23.16

Fixed overhead expenditure variance is £1,500 adverse.

Application

B22.1 Plastics Ltd

	Budget for May	*Actual for May*	*Variance*	
Production in units	42,800	42,800		
	£	£	£	
Direct material	256,800	267,220	10,420	(*A*)
Direct labour	342,400	356,577	14,177	(*A*)
Variable overhead	171,200	165,243	5,957	(*F*)
Fixed overhead	90,000	95,000	5,000	(*A*)
Total production cost	860,400	884,040	23,640	(*A*)
Less stock at standard cost, 2,800 units at £21	58,800	58,800		
Cost of goods sold	801,600	825,240		
Sales 40,000 × £70	2,800,000	2,800,000		
Net profit	1,998,400	1,974,760	23,640	(*A*)

Note on standard cost

Budgeted cost per unit	£
Direct material 5 kg × £1.20	6
Direct labour 2 hours × £4	8
Variable overhead 2 hours × £2	4
Fixed overhead £90,000/30,000	3
	21

Analysis of variances

Direct materials (total variance £10,420 adverse):

Price variance = AQ (SP – AP) = 213,776 kg (£1.20 – £1.25) = £10,688 adverse variance	Usage variance = SP (SQ – AQ) = £1.20 (214,000 – 213,776) = £268 favourable variance

Direct labour (total variance £14,177 adverse):

Rate variance = AH (SR – AR) = 86,970 hours (£4.00 – £4.10) = £8,697 adverse variance	Efficiency variance = SR (SH – AH) = £4.00 (85,600 – 86,970) = £5,480 adverse variance

Variable overhead (total variance £5,957 favourable):

Rate variance = AH (SR – AR) = 86,970 hours (£2.00 – £1.90) = £8,697 favourable variance	Efficiency variance = SR (SH – AH) = £2.00 (85,600 – 86,970) = £2,740 adverse variance

Fixed overhead expenditure variance is £5,000 adverse, indicating overspending.

One possible interpretation of the variance analysis is that less wastage of material occurred through buying higher-quality material at a higher unit price. Labour was paid more than expected, which may have been due to an unexpected pay award, but nevertheless worked less efficiently than expected. The inefficient working has a consequence also on the efficiency of using variable overheads although this was more than offset by a lower than expected rate of variable overhead cost.

B22.2 Budgeted and actual costs for the month of May

	Budget	*Actual*	*Variance*	
	£	£	£	
Actual level of output (units)	120	120		
Direct materials	30,000	31,200	1,200	(*A*)
Direct labour	18,000	16,800	1,200	(*F*)
Fixed manufacturing overhead	12,000	9,600	2,400	(*F*)
Total costs of production	60,000	57,600	2,400	(*F*)

Analysis of variances

Direct materials (total variance £1,200 adverse):

Price variance = AQ (SP – AP) = 1,300 kg (£25 – £24) = £1,300 favourable variance	Usage variance = SP (SQ – AQ) = £25 (1,200 – 1,300) = £2,500 adverse variance

Direct labour (total variance £1,200 favourable):

Rate variance = AH (SR – AR) = 1,400 hours (£12 – £10) = £2,800 adverse variance	Efficiency variance = SR (SH – AH) = £10 (1,800 – 1,400) = £4,000 favourable variance

Fixed overhead variance is an expenditure variance reflecting less spent than expected.

One possible explanation here is that the company tried to save money by buying cheaper material but this had the wrong effect because it increased wastage and hence usage was greater. The rate variance indicates that the incentive payment was successful: it had a cost which was more than offset by greater efficiency.

B22.3 Carrypack Ltd – month of April Year 6

	Flexible budget	*Actual*	*Variance*	
	12,300 units	12,300 units		
	£	£	£	
Sales: 12,300 units @ £50 each	615,000	615,000	nil	
Production: 12,300 units				
	£	£	£	
Direct materials	135,300	136,220	920	(*A*)
Direct labour	110,700	129,200	18,500	(*A*)
Variable overheads	73,800	72,200	1,600	(*F*)
Fixed overhead	48,000	49,400	1,400	(*A*)
Total cost	367,800	387,020	19,220	(*A*)
Actual profit	247,200	227,980	19,220	(*A*)

Direct materials (total variance £920 adverse):

Price variance = AQ (SP – AP) = 27,800 kg (£5.00 – £4.90) = £2,780 favourable variance	Usage variance = SP (SQ – AQ) = £5 (*27,060 – 27,800) = £3,700 adverse variance

*26,400 kg is standard for 12,000 units so proportionately 27,060 kg is standard for 12,300 units.

Direct labour (total variance £18,500 adverse):

Rate variance = AH (SR – AR) = 38,000 hours (£3.00 – £3.40) = £15,200 adverse variance	Efficiency variance = SR (SH – AH) = £3.00 (36,900 – 38,000) = £3,300 adverse variance

Variable overhead (total variance £1,600 favourable):

Rate variance = AH (SR – AR) = 38,000 hours (£2.00 – £1.90) = £3,800 favourable variance	Efficiency variance = SR (SH – AH) = £2.00 (36,900 – 38,000) = £2,200 adverse variance

Fixed overhead expenditure variance is £1,400 adverse, indicating overspending.

Comment: Direct materials needs investigating for controllability of the usage variance and whether low-price goods have been purchased with a consequence of more wastage. Direct labour is the variance of most concern because of its magnitude. If the labour rate has changed then the budget should be revised so that the non-controllable variance of £15,200 is not reported. The inefficiency of labour working is matched by inefficiency in use of variable overhead and the cause of the unexpected extra hours should be investigated.

Problem solving and evaluation

C22.1 Cabinets Ltd

Reconstructed budget for May Year 4

Production units budgeted	1,800
	£
Direct materials £3.00 × (9,600 × 1,800/1,600)	32,400
Direct labour £8.00 × (4,800 × 1,800/1,600)	43,200
Fixed overhead	36,000
Total budgeted cost	111,600

In the following tables, the figures in italics are the items which have been calculated from a knowledge of the other items in the table.

Direct materials (total variance £2,560 adverse):

Price variance = AQ (SP – AP) = 11,200 kg (*£3.00* – £2.80) = £2,240 favourable variance	Usage variance = SP (SQ – AQ) = £3.00 (*9,600* – 11,200) = £4,800 adverse variance

Direct labour (total variance £12,000 adverse):

Rate variance = AH (SR – AR) = 5,600 hours (*£8.00* – £9.00) = £5,600 adverse variance	Efficiency variance = SR (SH – AH) = £8.00 (*4,800* – 5,600) = £6,400 adverse variance

Fixed overhead expenditure variance is £3,000 adverse, indicating the budget was £36,000.

One possible interpretation is that cheaper material was bought but resulted in more wastage, the adverse effect on usage exceeding the price saving. The labour rate increased, possibly due to an agreed wage rise, but the efficiency worsened, perhaps because of the cheaper material. The adverse fixed overhead expenditure indicates overspending which is not related to volume effects.

C22.2 Fixit Ltd

	Flexible budget	*Actual*	*Variance*	
Production in units	5,500	5,500		
	£	£	£	
Direct materials	22,000	22,764	764	(*A*)
Direct labour	66,000	75,900	9,900	(*A*)
Variable production overhead	15,400	14,950	450	(*F*)
Fixed production overhead	10,000	9,000	1,000	(*F*)
Depreciation	4,000	4,000	–	
	117,400	126,614	9,214	(*A*)

Analysis of variances

Direct materials (total variance £764 adverse):

Price variance = AQ (SP – AP) = 54,200 kg (£0.40 – £0.42) = £1,084 adverse variance	Usage variance = SP (SQ – AQ) = £0.40 (55,000 – 54,200) = £320 favourable variance

Direct labour (total variance £9,900 adverse):

Rate variance = AH (SR – AR) = 11,500 hours (£6.00 – £6.60) = £6,900 adverse variance	Efficiency variance = SR (SH – AH) = £6.00 (11,000 – 11,500) = £3,000 adverse variance

Variable overhead (total variance £450 favourable):

Rate variance = AH (SR – AR) = 11,500 hours (£1.40 – £1.30) = £1,150 favourable variance	Efficiency variance = SR (SH – AH) = £1.40 (11,000 – 11,500) = £700 adverse variance

Fixed overhead expenditure variance is £1,000 favourable, indicating underspending.

Comment: More expensive material may have produced better quality and caused some off-setting in less material wastage. However, efficiency of working was lower than expected, affecting both labour and variable overhead costs. The variable overhead rate was lower than expected, suggesting some saving on the cost of overheads, but the labour rate was higher than expected, suggesting an unexpected pay award.

C22.3 Concrete Products Ltd

Heavy paving

	Actual tonnes	*Budget tonnes*	*Flexible budget tonnes*	*Variance*	
Sales volume	29,000	27,500	29,000		
Production volume	29,000	27,500	29,000		
	£000s	£000s	£000s	£000s	
Revenue	720	690	727	7	(*A*)
Variable cost of sales	280	270	285	5	(*F*)
Contribution	440	420	442	2	(*A*)

Garden paving

	Actual tonnes	*Budget tonnes*	*Flexible budget tonnes*	*Variance*	
Sales volume	10,500	8,500	10,500		
Production volume	10,500	8,500	10,500		
	£000s	£000s	£000s	£000s	
Revenue	430	300	370	60	(*F*)
Variable cost of sales	170	127	157	13	(*A*)
Contribution	260	173	213	47	(*F*)

Comment: The comparison between budget and actual must be made on the basis of a flexible budget which allows for the revised levels of production and sales. In both cases the activity has been greater than was expected when the budget was set. Making comparison with a flexible budget shows that heavy paving made a contribution which was £2,000 less than expected while garden paving made a contribution which was £47,000 greater than expected.

Questions to ask:

1 Has there been a change in the sales price of these items? If so the budget should be revised to take account of the new price, and the variance for the period would be £8,000 adverse.
2 Has there been a change in the cost of direct materials? If so the budget should be revised to avoid giving the impression of an adverse variance of £8,000. The usefulness of variance analysis lies in identifying controllable variances, not in relating to outdated budgets.
3 On the presumption that there has been no change in the labour rate, is the supervisory team working effectively? One explanation of the adverse cost variance could be inefficient working in the production department.

C22.4 Nu-Line Ltd

Calculation of cost of production

	Flexible budget	*Actual*	*Variance*	
Units of production	140	140		
	£	£	£	
Cost of machine tools (for 140)	84,000	*67,510	16,490	(*F*)
Direct labour	42,000	47,500	5,500	(*A*)
Variable production overhead	14,000	13,000	1,000	(*F*)
	140,000	128,010	11,990	(*F*)
Fixed production overhead	**36,000	35,000	1,000	(*F*)
Total production cost	176,000	163,010	12,990	(*F*)
Add opening stock, 15 at £1,200	18,000	18,000		
Less stock, 5 items at £1,200 each	(6,000)	(6,000)		
Cost of goods sold	188,000	175,010	12,990	(*F*)
Sales 150 at £2,000 each	300,000	300,000		
	112,000	124,990	12,990	(*F*)

* Actual cost of £86,800 related to 180 units, but only 140 were used, so cost of 140 is taken proportionately as £67,510.
** Fixed production overhead of £200 per unit multiplied by budgeted production at 180 units because the fixed overhead budget is not flexible with volume of activity.

Calculation of units of inventory

	Original budget	*Actual*
Stock of finished goods at start of year	15	15
Production	180	140
Sales	(130)	(150)
Stock of finished goods at end of year	65	5

Comment: The original sales level expected was 130 units. Additional profit has been created by selling 150 units but beyond that there is a favourable variance of £12,990. This is primarily due to the cost of purchased machine tools being less than expected (£482 rather than £600 each). The direct labour variance was adverse but we are not provided with sufficient information to break this down into rate and efficiency variances. A similar limitation on analysis applies to the favourable variance on variable production overhead. The fixed production overhead shows a marginal saving on budget.

Chapter 23

Problem solving and evaluation

C23.1 Furniture Manufacture Ltd

A control report should emphasise the costs which are controllable within the organisation and which are most closely the responsibility of the manager concerned.

Although the power failure was beyond the control of the departmental manager, the company needs to know the cost of that failure. If there was a power failure then there can have been no productive work from direct labour and it is likely that indirect labour, indirect materials and indirect production overhead would not have been incurred during that time. The fixed overheads will have been incurred irrespective but the variable maintenance costs may not have been incurred where there was no activity to maintain. So the budgeted cost should be recalculated at 75% of the expected cost and compared with actual. This may give a better comparison with the actual cost.

	Budgeted cost				Actual cost	Variance	
	Fixed	*Original variable*	*Revised variable*	*Total*		*(F) = favourable (A) = adverse*	
	£	£	£	£	£	£	
Direct labour	–	36,000	27,000	27,000	30,000	3,000	(*A*)
Indirect labour	6,000	8,000	6,000	12,000	14,000	2,000	(*A*)
Indirect materials	–	4,000	3,000	3,000	3,500	500	(*A*)
Power	3,000	12,000	9,000	12,000	9,000	3,000	(*F*)
Maintenance materials	–	5,000	3,750	3,750	3,000	750	(*F*)
Maintenance labour	5,000	4,000	3,000	8,000	15,000	7,000	(*A*)
Depreciation	85,000	–	–	85,000	75,000	10,000	(*F*)
Production overhead	–	20,000	15,000	15,000	15,000	–	

The revised table suggests that the bench assembly department manager should not be quite so complacent as was indicated from the earlier table. The labour costs appear to be higher than would be expected for a power failure period, unless the explanation is that they have been paid overtime rates to catch up on the work. Questions also need to be asked about the maintenance labour. It may be that the explanation is that additional maintenance was undertaken during the enforced idleness, although this explanation depends on being able to undertake maintenance without an electricity supply.

C23.2

(a) For explanation of responsibility accounting see the chapter.

(b) Manager of distribution depot needs:

- area totals for demand (5 columns)
- area totals for running costs of floats
- area totals for drivers' wages and managers' salaries
- area totals for cash collection and note on areas of slow payment problems, with action taken
- copy of area returns as backup if required
- exception report from each area manager highlighting problem areas and action taken
- ratios identifying relationships of key variables.

Area manager needs:

- depot totals for demand (10 columns)
- depot totals for running costs of floats
- depot totals for drivers' wages and managers' salaries
- depot totals for cash collected and note on dealing with slow payers
- copy of depot returns as backup if required
- ratios identifying relationships of key variables.

Depot manager needs:

- delivery demand analysed by driver
- running costs of float analysed by driver
- drivers' wages for each employee
- cash collection analysed by driver
- ratios relating input to output.

Chapter 24

Test your understanding

A24.19

(a) £92.60; (b) £85.70; (c) £79.40.

A24.20

(a) £82.20; (b) £74.70; (c) £68.10.

Application

B24.1 Projects Ltd

Payback period

The cumulative cash flows are:

End of year	£
1	10,000
2	25,000
3	45,000
4	70,000

The payback of £50,000 occurs one-fifth of the way into Year 4, i.e. payback is 3.2 years.

Accounting rate of return

Total profit over 5 years is £95,000 less depreciation of £40,000, i.e. £55,000.
Average profit is therefore £11,000 per annum.
Accounting rate of return is 11,000/50,000 = 22%.

Net present value

(Using assumed discount rate of 10%.)

Using the formula approach the net present value is calculated as:

$$\frac{10{,}000}{(1.10)} + \frac{15{,}000}{(1.10)^2} + \frac{20{,}000}{(1.10)^3} + \frac{25{,}000}{(1.10)^4} + \frac{*35{,}000}{(1.10)^5} - 50{,}000$$

$$= 9{,}090 + 12{,}397 + 15{,}026 + 17{,}075 + 21{,}732 - 50{,}000$$

$$= 75{,}320 - 50{,}000$$

$$= 25{,}320$$

*Cash flow forecast for Year 5 plus scrap value expected at end.

Using the discount tables the net present value is calculated as:

End of year	*Cash flow* £	*Discount factor*	*Present value* £
1	10,000	0.909	9,090
2	15,000	0.826	12,390
3	20,000	0.751	15,020
4	25,000	0.683	17,075
5	35,000	0.621	21,735
			75,310
Less initial outlay			(50,000)
Net present value			25,310

(Difference from formula-based answer is due to rounding.)

B24.2

Difference = 122 + 58 = 180.
IRR = 22 + 2(122/180) = 23.36%.

B24.3

	Machine A	*Machine B*
Capital expenditure required	£65,000	£60,000
Estimated life in years	4	4
Residual value	nil	nil
Cash flow after taxation each year	£25,000	£24,000
Payback	2 + 15/25 = 2.6 years	2 + 12/60 = 2.2 years
NPV	79,225 – 65,000 = 14,225	76,056 – 60,000 = 16,056
Profitability index	79,225/65,000 = 1.22	76,056/60,000 = 1.26

On payback Machine A is preferable; on NPV and profitability index Machine B is preferable but in all cases the answers are close so that other non-financial factors may also need to be considered.

B24.4

Year	*Net cash flows*	*Discount factor at 8%*	*Present value*
	£000	*£000*	*£000*
1	50	.926	45.1
2	200	.857	171.4
3	225	.794	178.7
4	225	.735	165.4
5	100	.681	681.0
			1,241.6
	Cost		–500.0
	NPV		741.6

Problem solving and evaluation

C24.1 Offshore Services Ltd

		ALPHA		*BRAVO*		*CHARLIE*		*DELTA*	
	Yr	*£000s*	*Disct*	*£000s*	*Disct*	*£000s*	*Disct*	*£000s*	*Disct*
Outlay	–	(600)	(600)	(300)	(300)	(120)	(120)	(210)	(210)
Cash flow benefits:									
	1	435	395	–		48	44	81	74
	2	435	359	–		48	40	81	67
	3	–		219	164	48	36	81	61
	4	–		219	150	48	33	81	55
	5	–		219	136	48	30	81	50
Total PV			754		450		183		307
NPV			154		150		63		97
Total PV/outlay			1.26		1.50		1.53		1.46
Internal rate of return		28.8%		22.0%		28.6%		26.8%	

All the projects are acceptable because they all have a positive net present value but the maximisation of net present value from an investment of £1m requires selection of the projects which give the highest net present value per £ of investment. This is most conveniently estimated by comparing the total present value with the outlay (sometimes referred to as the *profitability index*). The order of preference is therefore:

Bravo, Charlie, Delta, Alpha.

The highest net present value within a £1m limit would be £309,000 obtained from Bravo, Charlie and Delta. If the additional funding can be borrowed then Alpha is also desirable.

C24.2 Advanced plc

This question requires evaluation of the investment of £1,150,000 as compared with continuing on the existing basis with no investment.

	Year 1	*Year 2*	*Year 3*	*Year 4*	*Year 5*
	£000s	*£000s*	*£000s*	*£000s*	*£000s*
Existing sales volume at £10 each	4,000	4,500	5,000	6,000	7,500
Proposed sales volume at £8.50	4,760	5,355	5,950	7,140	8,925
Incremental cash flow from sales	760	855	950	1,140	1,425
Existing production outflow at £7.50	3,150	3,263	3,788	4,575	5,475
New production outflow at £6.20	3,497	3,949	4,309	5,208	6,473
Incremental cash outflow on production	347	686	521	633	998
Excess inflow over outflow	413	169	429	507	427
Incremental scrap value					130
	413	169	429	507	557
Discount factors at 12%	0.893	0.797	0.712	0.636	0.567
Present value	369	135	305	322	316

Total present value = 1,447,000.

Investment required is £1,150,000 and there is 'lost' scrap value of £30,000, giving a total outlay of £1,180,000.

So compare present value of £1,447,000 with outlay of £1,180,000. Net present value is positive therefore investment is acceptable.

Other matters – is demand sustainable, are production costs controllable at lower level, is scrap value forecast realistic?