

Section B

SOLUTIONS TO EXERCISES

2.2

Joe Conday

(a)

Balance sheet as at 1 March			
	£		£
Bank	<u>20,000</u>	Capital	<u>20,000</u>
Balance sheet as at 2 March			
	£		£
Bank	14,000	Capital	20,000
Fixtures and fittings	6,000	Creditors	8,000
Stock	<u>8,000</u>		
	<u>28,000</u>		<u>28,000</u>
Balance sheet as at 3 March			
	£		£
Bank	19,000	Capital	20,000
Fixtures and fittings	6,000	Creditors	8,000
Stock	<u>8,000</u>	Loan	<u>5,000</u>
	<u>33,000</u>		<u>33,000</u>
Balance sheet as at 4 March			
	£		£
Bank	11,800	Capital	19,800
Fixtures and fittings	6,000	Creditors	8,000
Stock	8,000	Loan	5,000
Motor car	<u>7,000</u>		
	<u>32,800</u>		<u>32,800</u>
Balance sheet as at 5 March			
	£		£
Bank	9,300	Capital	19,300
Fixtures and fittings	6,000	Creditors	8,000
Stock	8,000	Loan	5,000
Motor car	<u>9,000</u>		
	<u>32,300</u>		<u>32,300</u>
Balance sheet as at 6 March			
	£		£
Bank	10,300	Capital	21,300
Fixtures and fittings	6,000	Creditors	8,000
Stock	8,000	Loan	4,000
Motor car	<u>9,000</u>		
	<u>33,300</u>		<u>33,300</u>

(b)

Joe Conday

Balance sheet as at 6 March

	£	£
<i>Fixed assets</i>		
Fixtures and fittings		6,000
Motor car		<u>9,000</u>
		15,000
<i>Current assets</i>		
Stock-in-trade	8,000	
Bank	<u>10,300</u>	
	18,300	
<i>Less Current liabilities</i>		
Creditors	<u>8,000</u>	
		<u>10,300</u>
		25,300
<i>Less Long-term liabilities</i>		
Loan		<u>4,000</u>
		<u>21,300</u>
Capital		<u>21,300</u>

2.3

Balance sheet as at a particular point in time

	£000	£000	£000
Fixed assets			
Freehold premises			245
Plant and machinery			127
Delivery vans			<u>54</u>
			426
Current assets			
Stock-in-trade	46		
Trade debtors	<u>34</u>		
		80	
Less: Current liabilities			
Trade creditors	23		
Bank overdraft	<u>22</u>		
		<u>45</u>	
			<u>35</u>
			461
Less: Long-term liabilities			
Loan from Industrial Finance Company			<u>100</u>
			<u>361</u>
Capital			<u>361</u>

2.5

Balance sheet as at the end of the week

Assets	£	Claims	£
Freehold premises	145,000	Capital (203,000 + 11,000 - 8,000 + 23,000 - 17,000 + 100,000 + 10,000)	322,000
Furniture and fittings	63,000	Bank overdraft (43,000 - 11,000 - 18,000 - 100,000 + 13,000)	(73,000)
Motor van (+ 10,000)	10,000	Trade creditors (23,000 + 14,000 - 13,000)	24,000
Stock-in-trade (28,000 - 8,000 - 17,000 + 14,000)	17,000		
Trade debtors (33,000 + 23,000 - 18,000)	38,000		
	<u>£273,000</u>		<u>£273,000</u>

Since the bank balance has now moved into the 'black', we can rewrite this balance sheet as:

Balance sheet as at the end of the week

Assets	£	Claims	£
Freehold premises	145,000	Capital	322,000
Furniture and fittings	63,000	Trade creditors	24,000
Motor van	10,000		
Stock-in-trade	17,000		
Trade debtors (33,000 + 23,000 - 18,000)	38,000		
Cash at bank	73,000		
	<u>£346,000</u>		<u>£346,000</u>

3.2

Singh Enterprises

Profit and loss account (extract) for the year ended 31 December 2000

	£
Depreciation - machinery	2,000

Balance sheet (extract) as at 31 December 2000

	£
Machinery at cost	10,000
<i>Less</i> Accumulated depreciation	<u>2,000</u>
	8,000

Profit and loss account (extract) for the year ended 31 December 2001

		£
Depreciation - machinery	(2,000 + 2,500)	4,500

Balance sheet (extract) as at 31 December 2001

		£
Machinery at cost		25,000
<i>Less</i> Accumulated depreciation	(4,000 + 2,500)	<u>6,500</u>
		18,500

Profit and loss account (extract) for the year ended 31 December 2002

		£
Depreciation - machinery		4,500
Loss on sale of machine	(10,000 - 6,000 - 3,000)	1,000

Balance sheet (extract) as at 31 December 2002

		£
Machinery at cost		15,000
<i>Less</i> Accumulated depreciation	(2 x 2,500)	<u>5,000</u>
		10,000

3.4

Spratley Ltd

FIFO

	<i>Purchases</i>			<i>Cost of sales</i>		
	<i>No. of tonnes</i>	<i>Cost per tonne £</i>	<i>Total £</i>	<i>No. of tonnes</i>	<i>Cost per tonne £</i>	<i>Total £</i>
Sept						
1	20	18	360			
2	48	20	960			
4	15	24	360			
6	10	25	250			
7				20	18	360
				40	20	800
	<u>93</u>		<u>1,930</u>	<u>60</u>		<u>1,160</u>
Opening stock + purchases			1,930			
Cost of sales			(1,160)			
Closing stock			<u>770</u> (that is, 8 @ £20 + 15 @ £24 + 10 @ £25)			

LIFO

	<i>Purchases</i>			<i>Cost of sales</i>		
	<i>No. of tonnes</i>	<i>Cost per tonne £</i>	<i>Total £</i>	<i>No. of tonnes</i>	<i>Cost per tonne £</i>	<i>Total £</i>
Sept						
1	20	18	360			
2	48	20	960			
4	15	24	360			
6	10	25	250			
7				10	25	250
				15	24	360
				35	20	700
	<u>93</u>		<u>1,930</u>	<u>60</u>		<u>1,310</u>
Opening stock + purchases			1,930			
Cost of sales			(1,310)			
Closing stock			<u>620</u> (that is, 20 @ £18 + 13 @ £20)			

AVCO

	<i>No. of tonnes</i>	<i>Purchases Cost per tonne £</i>	<i>Total £</i>	<i>No. of tonnes</i>	<i>Cost of sales Cost per tonne £</i>	<i>Total £</i>
Sept						
1	20	18	360			
2	48	20	960			
4	15	24	360			
6	<u>10</u>	<u>25</u>	<u>250</u>			
	<u>93</u>	<u>20.8</u>	<u>1,930</u>			
7				<u>60</u>	<u>20.8</u>	<u>1,248</u>
Opening stock + purchases			1,930			
Cost of sales			(1,248)			
Closing stock			<u>682</u>			

3.5

TT and Co

Balance sheet as at 31 December 2004

<i>Assets</i>	£	<i>Claims</i>	£
Delivery van (+ 9,500 + 13,000 - 5,000)	17,500	Capital (+ 76,900 - 20,000 + 37,705)	94,605
Stock-in-trade (+ 65,000 + 67,000 + 8,000 - 89,000 - 25,000)	26,000	Trade creditors (+ 22,000 + 67,000 - 71,000)	18,000
Trade debtors (+ 19,600 + 179,000 - 178,000)	20,600	Accrued expenses (+ 860 + 690)	1,550
Cash at bank (+ 750 - 20,000 -15,000- 1,300 - 13,000 - 36,700 - 1,820- 8,000 + 54,000 +178,000 - 71,000 - 16,200)	49,730		
Prepaid expenses (325)	325		
	<u>114,155</u>		<u>114,155</u>

Profit and loss account for the year ended 31 December 2004

	£	£
Sales (+ 179,000 + 54,000)		233,000
less: Cost of stock sold (+ 89,000 + 25,000)		<u>114,000</u>
Gross profit		119,000
less:		
Rent (5,000 + 15,000)	20,000	
Rates (300 + 975)	1,275	
Wages (- 630 + 36,700 + 860)	36,930	
Electricity (- 620 + 1,820 + 690)	1,890	
Van depreciation (2,500 + 2,500)	5,000	
Van expenses (16,200)	<u>16,200</u>	
Net profit for the year		<u>81,295</u> <u>37,705</u>

The balance sheet could now be rewritten in a more stylish form as follows:

TT and Co

Balance sheet as at 31 December 2004

	£	£	£
Fixed assets			
Motor van			17,500
Current assets			
Stock-in-trade	26,000		
Trade debtors	20,600		
Prepaid expenses	325		
Cash	<u>49,730</u>		
		96,655	
Less: Current liabilities			
Trade creditors	18,000		
Accrued expenses	<u>1,550</u>	<u>19,550</u>	
			<u>77,105</u>
			<u>94,605</u>
Capital			
Opening balance			76,900
Add: Net profit			<u>37,705</u>
			114,605
Less: Drawings			<u>20,000</u>
			<u>94,605</u>

4.2

- (a) A dividend is a drawing of capital made by shareholders. Usually, but not necessarily, it is in the form of cash. It often reflects the level of profit made during the year to which it relates, but it is perfectly legal to pay a dividend out of past, retained profits. Broadly that part of the owners' claim that can be reduced through payment of a dividend, is limited to that which arose from normal realised trading profits and realised gains from disposals of fixed assets.
- (b) A debenture is a long-term loan (evidenced by a deed). Many businesses borrow on a long-term basis where the rate of interest, the interest payment date and the capital repayment date are defined in the contract between the company and the lenders. Debenture loans are usually secured on some asset (typically land and buildings) of the business.
- (c) A share premium account is a reserve, part of the owners' claim, which arises from shares being issued at above their par or nominal value. This reserve is not part of the owners' claim that can be reduced by paying a dividend.

4.3

- (a)
 - (i) The Companies Acts establish the basic requirement that the directors of companies must prepare and publish a set of accounts annually which represents a true and fair view of the company's position and performance. Company law also sets out the basic framework of the published financial statements and reports. This includes both the form, that is, the layout and order of the statements and the content, that is, what must be disclosed. Though the law concerns itself, to some extent, with the valuation rules, it tends not to take this very far.
 - (ii) Accounting standards tend to augment, clarify and standardise the way in which the accounts of companies are prepared within the framework set out by the Companies Acts.
 - (iii) The Financial Services Authority's role is very much more limited than that of either the law or accounting standards. For a start, its rules only apply to businesses listed on the Stock Exchange, which is a minority of UK businesses. Even for the businesses that are affected, the requirements of the Financial Services Authority are fairly limited and so the burden of compliance is not great.
- (b) The three elements of the, so-called, 'regulatory framework' establish rules of layout, disclosure and valuation which may not meet the company's management requirements at all. Managers may feel that a completely different format or even completely different types of statement would be much more useful to them. Managers may find the valuation rules established by accounting standards do not meet their needs at all.

It is totally open to the managers to prepare what statements they choose, following whatever rules they choose, for management information purposes. When they are preparing accounts for publication, however, they must follow the rules of the 'regulatory framework'.

4.5

Rose Limited

Balance sheet as at 31 March 2003

	£000	£000
Fixed assets (2,728 - 74 + 16)		2,670
Current assets		
Stocks (1,583 - 2)	1,581	
Debtors (996 + 34)	1,030	
Cash	<u>26</u>	
	<u>2,637</u>	
Creditors; amounts due within one year		
Trade creditors	(1,118)	
Other creditors (417 + 16 + 1)	(434)	
Tax	(421)	
Dividends	(300)	
Overdraft	<u>(296)</u>	
	<u>(2,569)</u>	
Net current assets		<u>68</u>
		2,738
Creditors; amounts due after more than one year		
Secured loan (2008)		<u>(300)</u>
		<u>2,438</u>
Capital and reserves		
Share capital		
(50p shares, fully paid)		750
Share premium		250
Retained profit		<u>1,438</u>
		<u>2,438</u>

Profit and loss account for the year ended 31 March 2003

	£000	£000
Sales (12,080 + 34)		12,114
Cost of sales		<u>6,282</u>
Gross profit		5,832
Labour cost (2,658 + 1)	2,659	
Depreciation (625 + 74)	699	
Other operating costs (1,003 + 2)	<u>1,005</u>	
		<u>4,363</u>
Net profit before interest and tax		1,469
Interest payable		<u>66</u>
Net profit before tax		1,403
Tax payable (1,403 x 30%)		<u>421</u>
Net profit after tax		982
Dividend payable		<u>300</u>
Retained profit for the year		682
Retained profit brought forward		<u>756</u>
Retained profit carried forward		<u>1,438</u>

5.2

Juno plc

Cash flow from operations

		£m
Net operating profit		187
Add: Depreciation		<u>55</u>
Net increase in working capital from operations		242
Less: Increase in stock		<u>4</u>
		238
Add: Decrease in debtors	1	
Increase in creditors	<u>2</u>	<u>3</u>
Net cash inflow from operating activities		<u>241</u>

5.4

Chen plc

Cash flow statement for the year ended 31 December 2003

	£m	£m
Net cash inflows from operating activities		48
(see calculation below)		
Returns from investment and servicing of finance		
Interest paid	(4)	
<i>Net cash outflow from returns on investment and servicing of finance</i>		(4)
Taxation		
Corporation tax paid	(11)	
(see note below)		
<i>Net cash flow for taxation</i>		(11)
Capital expenditure		
Land and buildings	(30)	
Plant and machinery	(6)	
(see note below)		
<i>Net cash outflow for capital expenditure</i>		(36)
		(3)
Equity dividends paid		
Dividends paid (see note below)	(18)	
<i>Net cash flow for equity dividends paid</i>		(18)
		(21)
Management of liquid resources		-
Financing		-
		-
Net decrease in cash		<u>(21)</u>

Analysis of cash during the year ended 31 December 2003

	£m
Balance at 1 January 2003	19
Net cash outflow	<u>(21)</u>
Balance at 31 December 2003	<u>(2)</u>

Analysis of cash balances as shown in the balance sheet

	2003	2002	Change in year
	£m	£m	£m
Cash at hand and in bank	-	19	(19)
Overdraft	<u>(2)</u>	-	<u>(2)</u>
	<u>(2)</u>	19	<u>(21)</u>

Calculation of net cash inflow from operating activities

		£m
Net operating profit (from the profit and loss account)		29
Add: Depreciation		
Land and buildings	10	
Plant and machinery	<u>12</u>	
		<u>22</u>
		51
Less: Increase in stocks (25 - 24)	1	
Decrease in creditors (23 - 20)	<u>3</u>	<u>4</u>
		47
Add: Decrease in debtors (26 - 25)		<u>1</u>
		<u>48</u>

Notes

Taxation

Amount outstanding at 1 January 2003	8
Corporation tax charge for the year	<u>6</u>
	14
Less: amount outstanding at 31 December 2003	<u>3</u>
Amount paid during the year	<u>11</u>

Dividends	2002	2003
	£m	£m
Total for the year (profit and loss account)	18	18
Still outstanding at the end of the year (balance sheet)	<u>14</u>	<u>14</u>
Paid during the year (interim dividend)	<u>4</u>	<u>4</u>

Thus the amount paid during 2003 was £14m from 2002, plus £4m for 2003, that is, £18m in total.

Fixed asset acquisitions	L and B	P and M
	£m	£m
Position at 31 December 2002	110	62
<i>Less:</i> 2003 depreciation	<u>10</u>	<u>12</u>
	100	50
Position at 31 December 2003	<u>130</u>	<u>56</u>
Acquisitions	<u>30</u>	<u>6</u>

5.5

Nailsea plc

Cash flow statement for the year ended 30 June 2004

	£000	£000
Net cash inflows from operating activities		397
(see calculation below)		
Returns from investment and servicing of finance		
Interest paid	(27)	
<i>Net cash outflow from returns on investment and servicing of finance</i>		(27)
Taxation		
Corporation tax paid	(125)	
(see note below)		
<i>Net cash outflow for taxation</i>		(125)
Capital expenditure		
Land and buildings	(400)	
Plant and machinery	(250)	
<i>Net cash outflow from capital expenditure</i>		(650)
		(405)
Equity dividends paid		
Dividends paid	(80)	
<i>Net cash outflow for equity dividends paid</i>		(80)
		(485)
Management of liquid resources		-
Financing		
Additional share capital (200 + 100)	300	
Debentures	300	
<i>Net cash inflow from financing</i>		600
Net increase in cash		<u>115</u>

Analysis of cash during the year ended 30 June 2004

	£000
Balance at 1 July 2003 (overdraft)	(32)
Net cash inflow	<u>115</u>
Balance at 30 June 2004	<u>83</u>

Analysis of balances of cash as shown in the balance sheet

	2004	2003	Change in year
	£000	£000	£000
Cash in bank	83	-	83
Overdraft	-	(32)	<u>32</u>
	<u>83</u>	<u>(32)</u>	<u>115</u>

Calculation of net cash inflow from operating activities

		£000
Net operating profit (from the profit and loss account)		342
Add: Depreciation		
Plant and machinery		<u>320</u>
		662
Less: Increase in stocks (450 - 275)	175	
Increase in debtors (250 - 100)	<u>150</u>	<u>325</u>
		337
Add: Increase in creditors (190 - 130)		<u>60</u>
		<u>397</u>

Taxation

Amount outstanding at 1 July 2003	55
Corporation tax charge for the year	<u>140</u>
	195
Less: amount outstanding at 30 June 2004	<u>70</u>
Amount paid during the year	<u>125</u>

Dividends

It is clear that the dividend declared in one year is paid in the next and so the 2003 dividend will be paid in 2004.

6.3

Conday and Co Ltd

(a)

Return on capital employed

$\frac{\text{Net profit before long-term interest and tax}}{\text{Long-term capital}} \times 100\%$

$$= \frac{(320 + 24^*)}{1,265} \times 100\% \quad 27.2\%$$

* interest on debentures.

Return on ordinary shareholders' funds

$\frac{\text{Net profit after tax}}{\text{Share capital + reserves}} \times 100\%$

$$= \frac{225}{1,065} \times 100\% \quad 21.1\%$$

Gross profit margin

$\frac{\text{Gross profit}}{\text{Sales}} \times 100\%$

$$= \frac{980}{2,600} \times 100\% \quad 37.7\%$$

Net profit margin

$\frac{\text{Net profit before interest and tax}}{\text{Sales}} \times 100\%$

$$= \frac{398}{2,600} \times 100\% \quad 15.3\%$$

Sales to capital employed (asset turnover)

$\frac{\text{Sales}}{\text{Long-term capital employed}}$

$$= \frac{2,600}{1,265} \quad 2.1 \text{ times}$$

Average settlement period for debtors

$\frac{\text{Trade debtors}}{\text{Credit sales}} \times 365$

$$= \frac{820}{2,600} \times 365 \quad 115 \text{ days}$$

Stock turnover period

$$\frac{\text{Stock held}}{\text{Cost of sales}} \times 365$$

$$= \frac{600}{1620} \times 365$$

135 days

The above ratios reveal that Conday and Co Ltd is profitable. In particular, the return on ordinary shareholders' funds and ROCE ratios seem to be high in relation to the returns achieved by more secure forms of investment such as government securities. However, whether this level of return is sufficient in relation to the risks involved is difficult to judge from the information available.

The settlement period for debtors seems very high which may be due to the nature of the business. However, this high ratio combined with the fact that the bad debts of the business account for more than 6% of total sales, suggests that some tightening of credit control procedures may be required. The stock turnover figure also seems high. The business is carrying more than 4 months' stock. This may indicate a need to improve stock control procedures. At present, the business has a large bank overdraft and so major improvements in stock control and credit control procedures may have a significant effect on both the liquidity and profitability of the business.

Given the high level of bank borrowing, it is difficult to understand why such a large proportion of the profits generated for the year was distributed in the form of dividend. This is not a very prudent policy. The sales to capital employed ratio seems quite low. This is due, at least in part, to the high levels of stock and debtors that are being carried.

(b) Though the business is profitable there are some doubts as to the quality of its management. The business has high levels of stock and debtors and a large overdraft. It is possible that better management would have not allowed this situation to arise. It is possible that better management of existing assets would eliminate the need for external sources of funds for expansion. It is interesting to speculate how £200,000 received from the issue of shares might be used by the managers. Would it be used to finance even higher levels of stocks and debtors without there being a corresponding increase in sales?

The share price of £6.40 is much higher than the net asset value of the shares. At present the net assets (assets less liabilities) are £1,065,000 and there are 700,000 shares in issue. This gives a net asset value per share of £1.52. To justify paying £6.40, the investor would have to be convinced the business would generate high profits in the future.

6.4

Helena Beauty Products Ltd

	2003	2004
<i>Profitability ratios</i>		
Net profit margin	$(80/3,600) \times 100\%$ = <u>2.2%</u>	$(90/3,840) \times 100\%$ = <u>2.3%</u>
Gross profit margin	$(1,440/3,600) \times 100\%$ = <u>40%</u>	$(1,590/3,840) \times 100\%$ = <u>41.4%</u>
ROCE	$(80/2,668) \times 100\%$ = <u>3.0%</u>	$(90/2,874) \times 100\%$ = <u>3.1%</u>
<i>Efficiency ratios</i>		
Stock turnover period	$[(320 + 400)/2]/2,160] \times 365$ = <u>61 days</u>	$[(400 + 500)/2]/2,250] \times 365$ = <u>73 days</u>
Average collection period	$(750/3,600) \times 365$ = <u>76 days</u>	$(960/3,840) \times 365$ = <u>91 days</u>
Asset turnover (sales to capital employed)	$3,600/2,668$ = <u>1.3 T</u>	$3,840/2,874$ = <u>1.3T</u>

These ratios reveal a low net profit margin in both years. The gross profit margin, however, is quite high in both years. This suggests that the business has high overheads. There was a slight improvement of 1.4% in the gross profit margin during 2004 but this appears to have been largely swallowed up by increased overheads. As a result, the net profit margin improved by only 0.1% in 2004. The low net profit margin is matched by a rather low asset turnover ratio in both years. The combined effect of this is a low ROCE in both years. The ROCE for each year is lower than might be expected from investment in risk-free government securities and should be regarded as unsatisfactory.

The stock turnover period and average collection period for debtors have both increased over the period. The average collection period seem to be high and should be a cause for concern. Though the profit (in absolute terms) and sales improved during 2004, the directors should be concerned at the low level of profitability and efficiency of the business. In particular, an investigation should be carried out concerning the high level of overheads and the higher investment in stocks and debtors.

6.5

Threads Ltd

(a)

	2003	2004
ROCE	234/756 = 31.0%	(159 + 8*)/845 = 19.8%
	* Assumes interest relates to long-term loan only	
Net profit margin	234/1180 = 19.8%	(159 + 8)/1200 = 13.9%
Gross profit margin	500/1180 = 42.4%	450/1200 = 37.5%
Current ratio	253/199 = 1.3:1	396/238 = 1.7:1
Acid-test ratio	105/199 = 0.5:1	160/238 = 0.7:1
Average settlement period for debtors	(102/1180) x 365 = 32 days	(156/1200) x 365 = 47 days
Average settlement period for creditors	(60/680*) x 365 = 32 days	(76/750*) x 365 = 37 days
	* Based on the cost of sales figure as the credit purchases figure is not available.	
Average stock turnover period	(148*/680) x 365 = 79 days	(236*/750) x 365 = 115 days
	* Based on the year-end figures.	

(b) A supplier seeking to sell a substantial amount of goods to the business will be concerned with both liquidity and longer term viability (where there is a continuing relationship) as measured by profitability ratios. The supplier will also be interested in the average time taken by the business to pay its current suppliers.

- The liquidity ratios reveal an improvement over the two years. However, for a manufacturing business, the liquidity ratios seem low and the supplier may feel some concern. The increase in stocks over the period has led to a greater improvement in the current ratio than in the acid test ratio. The improvement in the acid test ratio has not been very great and some concern over the business's liquidity position must remain.
- The average credit period for debtors has increased substantially in 2004. This may be a deliberate policy. However, if this is the case, the effect of a more liberal credit policy has not proved to be very successful as there has only been a slight improvement in sales in 2004. The increase may be due, on the other hand, to other factors such as poor credit control or certain customers experiencing financial difficulty. The effect of this change in the debtors ratio should be carefully noted by the supplier as the increase in debtors outstanding seems to be partly financed by an increase in the average period taken to pay trade creditors.
- The stock turnover period has increased significantly in 2004. This may be due to stock building in anticipation of future sales. However, it may indicate that certain lines are not selling as well as expected and are therefore remaining in stock.
- The gross profit margin and net profit margins are both lower in 2004. Lower margins have, in turn led to a lower return on capital employed. The lower profit margins, the increase in the average credit period allowed to trade debtors and the increase in the stock turnover period may suggest that the business has a product range which is becoming obsolete and therefore more difficult to sell. It may, however, also suggest a more competitive business environment.

The ratios calculated above do not indicate any serious problems for Threads Ltd. However, it is clear that 2004 proved to be a more difficult year. Things may well improve in the future though, at this point, the supplier would be well advised to be cautious in his/her dealings with the business. Certainly the supplier should not rely too heavily on Threads Ltd for future sales.

7.1

(a)

Firstly we need to deduce the total contribution per product. This will enable us to determine the contribution per £ of labour and hence the relative profitability of the three products, given a shortage of labour. Strictly, we should use the contribution per hour, but we do not know the number of hours involved. Since all labour is paid at the same rate, using labour cost will give us the same order of priority as using hours.

Product	Alpha £000	Beta £000	Gamma £000
Variable costs:			
Materials	6	4	5
Labour	9	6	12
Expenses	<u>3</u>	<u>2</u>	<u>2</u>
Total variable cost	18	12	19
Sales	<u>39</u>	<u>29</u>	<u>33</u>
Contribution	<u>21</u>	<u>17</u>	<u>14</u>
Contribution per £ of labour	2.333	2.833	1.167
Order of profitability	2	1	3

Since 50% of each budget (and, therefore, £13,500 of labour) is committed, only £6,500 of labour is left uncommitted (that is, £20,000 - 13,500).

The £6,500 should be deployed as:

Beta	£3,000
Alpha	<u>£3,500</u>
	<u>£6,500</u>

Total labour committed to each product and resultant profit are as follows:

Product	Alpha £	Beta £	Gamma £	Total £
Labour				
50% of budget	4,500	3,000	6,000	
Allocated above	<u>3,500</u>	<u>3,000</u>	<u>-</u>	
Total	<u>8,000</u>	<u>6,000</u>	<u>6,000</u>	<u>20,000</u>
Contribution per £ of labour	2.333	2.833	1.167	
Contribution per product	18,667	17,000	7,000	42,667
Less: Fixed costs				<u>33,000</u>
Maximum profit (subject to minor rounding errors)				<u>9,667</u>

This answer assumes that all costs are variable, except where it is indicated to the contrary. Also, that the budgeted sales figures are the maximum sales which can be achieved.

(b)

The steps include:

- Using all of the surplus labour to produce Betas (the most efficient user of labour). This is to say could the business sell more than £29,000 of this product? It might be worth reducing the price, though still keeping the contribution per labour £ above £2.33, in order to expand sales.
- Abandoning the commitment to 50% of budget on each product, in favour of producing the maximum of the higher yielding products.
- Finding another source of labour.
- Subcontracting the labour intensive part of the work.

Some, possibly all of these approaches may not be practical in the circumstances, but they seem worth considering.

7.2

(a)

Lannion and Co

	October	November
Sales (units of the service)	<u>200</u>	<u>300</u>
Sales (£)	5,000	7,500
Costs (balancing figure) (£)	<u>4,000</u>	<u>5,300</u>
Operating profit (£)	<u>1,000</u>	<u>2,200</u>

The increase in output of 100 units (that is, 300 - 200) gives rise to additional costs of £1,300 (that is, £5,300 - 4,000) or £13 per unit (that is, £1,300/100). This is the variable cost.

For October, total variable cost = 200 x £13 = £2,600. Therefore the fixed cost must be £1,400 (that is, £4,000 - 2,600).

This can be checked using the November figures. Total variable cost = 300 x £13 = £3,900. Fixed cost = £5,300 - 3,900 = £1,400.

Sales revenue per unit = £5,000/200 or 7,500/300 = £25.

Break-even point = Fixed cost/contribution = £1,400/(25 - 13) = 116.67 or 117 units per month.

(b)

Knowing the break-even point is useful because it enables the management of the business to make some judgement about how close the planned level of activity is to the point at which no profit will be made. This enables some assessment of riskiness to be made.

7.3

Hotel group

(a) The variable element and, therefore, the fixed element of the hotel's costs can be deduced by comparing any two quarters.

		Sales £000	Profit (loss) £000	Total cost £000
Quarter	1	400	(280)	680
	2	<u>1,200</u>	360	<u>840</u>
Difference		<u>800</u>		<u>160</u>

Thus the variable element of the sales price is 20% (that is, 160/800).

The fixed costs for **Quarter 1** = Total cost - variable costs

$$= £680,000 - (20\% \times 400,000) = £600,000.$$

To check that this calculation is correct and consistent for all four quarters, we can 'predict' the total costs for the other three quarters and then check the predicted results against those that can be deduced from the question.

Quarter 2

$$\begin{aligned} \text{Total cost} &= \text{fixed costs} + \text{variable costs} \\ &= £600,000 + (20\% \times 1,200,000) = £840,000. \text{ Agrees with the question.} \end{aligned}$$

Quarter 3

$$\begin{aligned} \text{Total cost} &= \text{fixed costs} + \text{variable costs} \\ &= £600,000 + (20\% \times 1,600,000) = £920,000. \text{ Agrees with the question.} \end{aligned}$$

Quarter 4

$$\begin{aligned} \text{Total cost} &= \text{fixed costs} + \text{variable costs} \\ &= £600,000 + (20\% \times 800,000) = £760,000. \text{ Agrees with the question.} \end{aligned}$$

Had the fixed and variable elements been deduced graphically, the consistency of the fixed and variable cost elements over the four quarters would have been obvious because a straight line would have emerged.

Table of provisional results for this year

	Total	Per visitor (50,000 visitors)
	£000	£
Sales	4,000	80
Variable costs (20% of sales)	<u>800</u>	<u>16</u>
Contribution	3,200	64
Fixed costs	<u>2,400</u>	<u>48</u>
Profit	<u>800</u>	<u>16</u>

(b) (i)

Next year

At the same level of occupancy as for this year and incorporating the increase in variable costs of 10%, the sales revenue will need to be:

	£000
Fixed costs	2,400
Variable costs (800,000 x 110%)	<u>880</u>
Total costs	3,280
Target profit	<u>1,000</u>
Sales target	<u>4,280</u>

Sales revenue per visitor = £4,280,000/50,000 = £85.60

(ii) If the sales revenue per visitor remains at this year's rate, the contribution per visitor will be £80 - (£16 x 110%) = £62.40. To cover the fixed costs and the target profit, would take 54,487 (approx.) visitors [that is, (£2,400,000 + 1,000,000)/62.40].

(c)

The major assumptions of profit-volume analysis is that costs can be divided between those that vary with the volume of activity (and with that factor alone) and those that are totally unaffected by volume changes.

A further assumption is that variable costs vary at a steady rate (straight line relationship) with volume.

These assumptions are unlikely to be strictly valid in reality. Variable costs are very likely not to vary in strictly a straight-line manner, relative to volumes. For example, at higher levels of output there may be economies of scale in purchasing (such as bulk discounts) or the opportunity, not available at lower output levels, to use materials or labour more effectively. On the other hand, the opposite may be the case. At higher levels of output, cost per unit may increase because the higher output level creates a shortage.

8.2

Bodgers Ltd

(a) The business predetermines the rate at which overheads are to be charged to jobs because, for most of the reasons that full costing information could be useful, costs usually need to be known either before the job is done or, more or less, immediately afterwards. The two main reasons why businesses identify full costs are for pricing decisions and income measurement purposes.

For pricing, usually the customer will want to know the price in advance of placing the order. Thus it is not possible to wait until all of the costs have actually been incurred, and are known, before the price can be deduced. Even where production is not for an identified customer, the business still needs to have some idea of whether it can produce the good or service at a price that the market will bear.

In the context of income measurement, valuing stock and work in progress is the purpose for which full costs are required. If managers and other users are to benefit as much as possible from accounting information, that information must speedily follow the end of the period to which it relates. This usually means that waiting to discover actual cost is not practical.

- (b) Predetermining the rate at which overheads are charged to jobs requires that three judgements be made:
- 1 predicting the overheads for the period concerned;
 - 2 deciding on the basis of charging overheads to jobs (for example, rate per direct labour hour); and
 - 3 predicting the number of units of the basis factor (for example, number of direct labour hours) that are expected to occur during the period concerned.

1 and 3 are difficult to do, but there will normally be some past experience, for example the current period, that might provide guidance. 2 is obviously a matter of judgement and opinion.

(c) The problems of using predetermined rates are really linked to the ability to predict 1 and 3, above. The desired result is that the total of the overheads, but no more than the total of the overheads, becomes part of the cost of the various jobs worked on in the period. Only if 1 and 3 are both accurately predicted will this happen, except by lucky coincidence. There is clearly the danger that jobs will either be undercharged or overcharged with overheads, relative to the total amount of overheads incurred during the period. In fact, it is almost certain that one of these two will happen, to some extent, simply because perfect prediction is impossible. Minor errors will not matter, but major ones could well lead to bad decisions.

8.4

Pieman Products Ltd

Indirect costs:

	£
Indirect labour	25,000
Depreciation	8,000
Rent and rates	10,000
Heating, lighting and power	5,000
Indirect materials	2,000
Other indirect costs	<u>1,000</u>
Total indirect costs	<u>51,000</u>

This list does not include the direct costs because we shall deal with the direct costs separately.

Probably a direct labour hour basis of charging overheads to jobs is most logical in this case (see below).

Overhead recovery rate per direct labour hour.

$$£51,000/16,000 = £3.1875 \text{ per direct labour hour.}$$

Full cost of the trailer

		£
Direct materials		1,150.000
Direct labour	(250 x (£80,000/16,000))	1,250.000
Indirect costs	(250 x £3.1875)	<u>796.875</u>
Total cost		<u>3,196.875</u>

that is, about £3,200

Direct labour hours are probably the most logical basis for charging overheads to the job. They probably provide the only measurable thing about the work that the business does that is a reasonable assessment of the size/complexity/importance of each job relative to the others undertaken. The business's work is probably labour intensive. It is probably difficult to introduce very much machine-controlled work into making trailers to individual specifications.

8.5

Athena Ltd

(a) *Budgeted overheads for next year*

	Total	Machining Department	Finishing Department
	£	£	£
Heating and lighting	25,000	12,500	12,500
Machine power	10,000	10,000	-
Indirect labour*	50,000	37,500	12,500
Depreciation	<u>30,000</u>	<u>30,000</u>	
	<u>115,000</u>	<u>90,000</u>	<u>25,000</u>

* This is divided 150,000:50,000, that is, in proportion to direct labour.

Note that direct labour and materials are not included in this schedule because they are not indirect costs.

(b) *Machining Department*

The machine hour rate = £90,000/20,000 = £4.50 per hour

Fitting Department

The direct labour hour rate = £25,000/(150,000/5) = £0.83 per hour. (Note that the direct workers are paid £5 an hour, so the hours to be worked is 150,000/5.)

(c) *Job price*

Direct materials		£	
			1,200
Direct labour:			
Machining Department	10 hours x £5	50	
Fitting Department	40 hours x £5	200	
Overheads	50 hours x £4.50	225	
	40 hours x £0.83	<u>33</u>	(to the nearest £)
		508	
Profit loading	20% x £508	<u>102</u>	(to the nearest £)
		<u>£610</u>	

Thus the price will be £610.

9.1

Budgets

(a) A budget is a financial plan for a future period. A forecast is an assessment/estimation of what is expected to happen in the environment. 'Plan' implies an intention to achieve. Thus a budget of what the business intends to achieve during the period of the budget. Relevant forecasts may well be taken into account when budgets are being prepared, but there is a fundamental difference between budgets and forecasts.

Though a year is a popular period for detailed budgets to be drawn up, there is no strong reason of principle why they have to be of this length.

(b) The layout described is generally regarded as a useful approach. Budgets are documents exclusively for the use of managers within the business. For this reason those managers can use whatever layout best suits their purpose and tastes. In fact, there is no legal requirement that budgets are prepared at all, let alone that they are prepared in any particular form.

(c) It is probably true to say that any manager worth employing would not want to work for a business which did not have an effective system of budgeting. Without budgeting, the advantages of:

- co-ordination
- motivation
- focusing on the future
- provision of the basis of a system of control

would all be lost.

Any good system of budgeting would almost certainly have individual managers participating heavily in the preparation of their own budgets and targets. It would also be providing managers with demanding, but rigorous, targets. This would give good managers plenty of scope to show flair and initiative, yet be part of a business that is organised, in control and potentially successful.

(d) Any sensible person would probably start with the budget for the area in which lay the 'limiting factor', that is, that factor which will, in the end, restrict the business from achieving its objectives to the extent which would be possible were it not for that factor.

It is often true that sales demand is the limiting factor. In those cases the sales budget is probably the best place to start. The limiting factor could, however, be, say, a shortage of suitable labour or materials. In this case the labour or materials budget would be the sensible place to start.

The reason why the starting point is important is simply that it is easier to start with the factor that is expected to limit the other factors and for those factors to fit in.

9.2

Daniel Chu Ltd

Finished goods stock budget for the six months ending 30 September (in units of production)

	April units	May units	June units	July units	Aug units	Sept units
Opening stock (Note 1)	zero	500	600	700	800	900
Production (Note 2)	<u>500</u> 500	<u>600</u> 1,100	<u>700</u> 1,300	<u>800</u> 1,500	<u>900</u> 1,700	<u>900</u> 1,800
less: Sales (Note 3)	–	<u>500</u>	<u>600</u>	<u>700</u>	<u>800</u>	<u>900</u>
Closing stock	<u>500</u>	<u>600</u>	<u>700</u>	<u>800</u>	<u>900</u>	<u>900</u>

Raw materials stock budget for the six months ending 30 September (in units)

	April units	May units	June units	July units	Aug units	Sept units
Opening stock (Note 1)	zero	600	700	800	900	900
Purchases (Note 2)	<u>1,100</u> 1,100	<u>700</u> 1,300	<u>800</u> 1,500	<u>900</u> 1,700	<u>900</u> 1,800	<u>900</u> 1,800
less: Production (Note 4)	<u>500</u>	<u>600</u>	<u>700</u>	<u>800</u>	<u>900</u>	<u>900</u>
Closing stock	<u>600</u>	<u>700</u>	<u>800</u>	<u>900</u>	<u>900</u>	<u>900</u>

Raw materials stock budget for the six months ending 30 September (in financial terms)

	April £	May £	June £	July £	Aug £	Sept £
Opening stock (Note 1)	zero	24,000	28,000	32,000	36,000	36,000
Purchases (Note 2)	<u>44,000</u> 44,000	<u>28,000</u> 52,000	<u>32,000</u> 60,000	<u>36,000</u> 68,000	<u>36,000</u> 72,000	<u>36,000</u> 72,000
less: Production (Note 4)	<u>20,000</u>	<u>24,000</u>	<u>28,000</u>	<u>32,000</u>	<u>36,000</u>	<u>36,000</u>
Closing stock	<u>24,000</u>	<u>28,000</u>	<u>32,000</u>	<u>36,000</u>	<u>36,000</u>	<u>36,000</u>

Trade creditors budget for the six months ending 30 September

	April £	May £	June £	July £	Aug £	Sept £
Opening balance (Note 1)	zero	44,000	28,000	32,000	36,000	36,000
Purchases (Note 5)	<u>44,000</u> 44,000	<u>28,000</u> 72,000	<u>32,000</u> 60,000	<u>36,000</u> 68,000	<u>36,000</u> 72,000	<u>36,000</u> 72,000
less: Cash payment	<u>zero</u>	<u>44,000</u>	<u>28,000</u>	<u>32,000</u>	<u>36,000</u>	<u>36,000</u>
Closing balance	<u>44,000</u>	<u>28,000</u>	<u>32,000</u>	<u>36,000</u>	<u>36,000</u>	<u>36,000</u>

Trade debtors budget for the six months ending 30 September

	April £	May £	June £	July £	Aug £	Sept £
Opening balance (Note 1)	zero	zero	50,000	60,000	70,000	80,000
Sales (Note 3)	<u>zero</u>	<u>50,000</u>	<u>60,000</u>	<u>70,000</u>	<u>80,000</u>	<u>90,000</u>
	zero	50,000	110,000	130,000	150,000	170,000
less: Cash received	<u>zero</u>	<u>zero</u>	<u>50,000</u>	<u>60,000</u>	<u>70,000</u>	<u>80,000</u>
Closing balance	<u>zero</u>	<u>50,000</u>	<u>60,000</u>	<u>70,000</u>	<u>80,000</u>	<u>90,000</u>

Cash budget for the six months ending 30 September

	Apr £	May £	June £	July £	Aug £	Sept £
<i>Inflows</i>						
Share issue	300,000					
Receipts: debtors (Note 6)	<u>zero</u>	<u>zero</u>	<u>50,000</u>	<u>60,000</u>	<u>70,000</u>	<u>80,000</u>
	<u>300,000</u>	<u>zero</u>	<u>50,000</u>	<u>60,000</u>	<u>70,000</u>	<u>80,000</u>
<i>Outflows</i>						
Payments to creditors (Note 7)	zero	44,000	28,000	32,000	36,000	36,000
Labour (Note 3)	10,000	12,000	14,000	16,000	18,000	18,000
Overheads:						
Production	17,000	17,000	17,000	17,000	17,000	17,000
Non-production (Note 8)	10,000	10,000	10,000	10,000	10,000	10,000
Fixed assets	<u>250,000</u>					
Total outflows	<u>287,000</u>	<u>83,000</u>	<u>69,000</u>	<u>75,000</u>	<u>81,000</u>	<u>81,000</u>
Net inflows /(outflows)	<u>13,000</u>	<u>(83,000)</u>	<u>(19,000)</u>	<u>(15,000)</u>	<u>(11,000)</u>	<u>(1,000)</u>
Balance c/fwd	<u>13,000</u>	<u>(70,000)</u>	<u>(89,000)</u>	<u>(104,000)</u>	<u>(115,000)</u>	<u>(116,000)</u>

Notes

- 1 The opening balance is the same as the closing balance from the previous month.
- 2 This is a balancing figure.
- 3 This figure is given in the question.
- 4 This figure derives from the finished stock budget.
- 5 This figure derives from the raw materials stock budget.
- 6 This figure derives from the trade debtors budget.
- 7 This figure derives from the trade creditors budget.
- 8 This figure is the non-productive overheads less depreciation.

9.5

Mowbray Ltd

	Original	Budget		Actual
		1,200	Flexed	
Output (units) (production and sales)	<u>1,200</u>		<u>1,000*</u>	<u>1,000*</u>
	£	£		£
Sales	24,000	20,000		18,000
Raw materials	(9,000)	(7,500) (3,000 kg)		(7,400) (2,800 kg)
Labour	(2,700)	(2,250) (500 hrs)		(2,300) (510 hrs)
Fixed overheads	<u>(4,320)</u>	<u>(4,320)</u>		<u>(4,100)</u>
Operating profit	<u>7,980</u>	<u>5,930</u>		<u>4,200</u>

* The sales of £18,000 were at 10% below standard price, that is, at £18 each. Sales volume was, therefore, 1,000 units (that is, £18,000/18).

Sales variances

Volume (7,980 - 5,930)	= £2,050(A)
Price (20,000 - 18,000)	= £2,000(A)

Direct materials variances

Usage [(1,000 x 3) - 2800] x £2.50	= £500(F)
Price (2,800 x £2.50) - £7,400	= £400(A)

Direct labour variances

Efficiency [(1,000 x 0.5) - 510] x £4.50	= £45(A)
Rate (510 x £4.50) - £2,300	= £5(A)

Fixed overhead variances

Spending (4,320 - 4,100)	= £220(F)
-----------------------------	-----------

(The budgeted fixed overheads were £3.60 x 1,200 = £4,320)

Budgeted profit = (1,200 x £6.65) = £7,980

Variances

Sales:	Volume	2,050(A)	
	Price	<u>2,000(A)</u>	(4,050)
D. materials:	Usage	500(F)	
	Price	<u>400(A)</u>	100
D. labour:	Efficiency	45(A)	
	Rate	<u>5(A)</u>	(50)
F. overheads:	Expenditure		<u>220</u>
			<u>4,200</u>

Since the low sales demand, and the reaction to it of dropping sales prices, seem to be caused by factors outside the control of managers of Mowbray Ltd, there are strong ground for dividing the sales volume and price variances into those which are controllable and those which are not (planning variances).

10.2

C. George (Controls) Ltd

(a) and (b)

The potential variable cost savings per unit of the product is as follows:

	£	
Labour	2.10	(that is, £3.30 - £1.20)
Materials	0.45	(that is, £3.65 - £3.20)
Variable overheads	<u>0.18</u>	(that is, £1.58 - £1.40)
	<u>2.73</u>	x 50,000

= £136,500 each year

Incremental cash flows

	Year 0	Year 1	Year 2	Year 3	Year 4
	£000	£000	£000	£000	£000
Variable cost savings		136.5	136.5	136.5	136.5
New equipment	(670.0)				70.0
Old equipment	150.0				(40.0)
Working capital	<u>130.0</u>				<u>(130.0)</u>
	<u>(390.0)</u>	<u>136.5</u>	<u>136.5</u>	<u>136.5</u>	<u>36.5</u>
Discount factors	1.000	0.893	0.797	0.712	0.636
Present values	(390.0)	121.9	108.8	97.2	23.2
NPV	<u>(38.9)</u>				

(c) Since the NPV is negative, the project would have an adverse effect on the wealth of the shareholders of the business and should not be pursued.

(d) Cash flows are used rather than cash flows since it is cash which gives command over resources. It is only when the cash is paid or received that the opportunity to deploy it elsewhere is lost or gained respectively.

In the long run, profit and cash flows should be equal, however, the timing of the flows will be different.

10.3

The accountant

(a)

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
	£000	£000	£000	£000	£000	£000
Sales revenue		450	470	470	470	470
Working capital recovered		<u>450</u>	<u>470</u>	<u>470</u>	<u>470</u>	<u>180</u> <u>650</u>
Materials		126	132	132	132	132
Labour		90	94	94	94	94
Overheads		30	30	30	30	30
Working capital	180					
New equipment	<u>500</u>					
	<u>680</u>	<u>246</u>	<u>256</u>	<u>256</u>	<u>256</u>	<u>256</u>
Incremental cash flows	(680)	204	214	214	214	394

Notes:

- Working capital invested in this project at the start will be recovered at the end of the project's life.
- The relevant overheads figure is £30,000 per year additional cost that the project is expected to cause.
- Depreciation is not a cash flow.
- Interest on the working capital investment, and indeed on other aspects of this investment, is dealt with by discounting.
- The development cost is not a relevant cost, since it has been incurred already and is not affected by the decision to be made.
- The cost of the equipment to start this project is the £500,000 that must be spent. The book value of the old machine is not relevant since this does not represent an outlay or an opportunity cash flow.

(b) (i)

Payback period	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
	£000	£000	£000	£000	£000	£000
Incremental cash flows	(680)	204	214	214	214	394
Cumulative incremental cash flows	(680)	(476)	(262)	(48)	166	560

Thus the payback point occurs in Year 4, that is, after just over 3 years (assuming cash flows accrue evenly over the year).

(ii) NPV

	Year 0 £000	Year 1 £000	Year 2 £000	Year 3 £000	Year 4 £000	Year 5 £000
Incremental cash flows	(680)	204	214	214	214	394
Discount factor	1.000	0.893	0.797	0.712	0.636	0.567
Present values	(680)	182.2	170.6	152.4	136.1	223.4
NPV		<u>184.7</u>				

(c) A memo to the board might include the following points:

- The fact that the project has a significant positive NPV, which would increase shareholder wealth.
- The fact that the project has a relatively short payback period.
- The figures in the analysis ignore taxation, which should be considered before a final decision is made.
- The question of risk should be considered before a final decision is made.

10.4

Arkwright Mills plc

(a) and (b)

Incremental cash flows

	Year 0 £m	Year 1 £m	Year 2 £m	Year 3 £m	Year 4 £m	Year 5 £m	Year 6 £m
Profit before tax and after depreciation		0.20	0.30	0.30	0.30	0.30	
Depreciation		0.20	0.20	0.20	0.20	0.20	
Corporation tax (50%)			(0.10)	(0.15)	(0.15)	(0.15)	(0.15)
Working capital investment	(0.60)					0.60	
Fixed asset investment	(1.00)						
Annual net cash flows	<u>(1.60)</u>	<u>0.40</u>	<u>0.40</u>	<u>0.35</u>	<u>0.35</u>	<u>0.95</u>	<u>(0.15)</u>
Discount factor 10%	1.000	0.909	0.826	0.751	0.683	0.621	0.564
Present value	(1.600)	0.364	0.330	0.263	0.239	0.590	(0.085)
NPV							<u>0.101</u>

On the basis of NPV, the project should be undertaken (the NPV of the project is positive).

Note: For the sake of simplicity, the question assumes that the depreciation charge will be allowable for tax calculation purposes. However, in practice, the tax authorities will normally make a separate calculation (referred to as a capital allowance calculation) to replace the depreciation charge when calculating liability for corporation tax.

(b)

	Year 0 £m	Year 1 £m	Year 2 £m	Year 3 £m	Year 4 £m	Year 5 £m	Year 6 £m
Annual net cash flows	(1.60)	0.40	0.40	0.35	0.35	0.95	(0.15)
Cumulative net cash flows	(1.60)	(1.20)	(0.80)	(0.45)	(0.10)	0.85	0.70

(c) The payback period is the time taken for the initial investment to be recouped. In this case, the investment will pay back by the end of year 5

11.2

International Electric plc

(a) The approximate equivalent annual percentage cost of allowing 2% discount for receiving cash 40 days earlier is:

$$(365/40) \times 2\% = \underline{18.25\%}$$

(b)

	Old scheme £m	New scheme £m
Debtors owing		
$\frac{1}{2}(\text{£}365\text{m} \times 30/365)$	15.0	15.0
$\frac{1}{2}(\text{£}365\text{m} \times 70/365)$	35.0	
$\frac{1}{4}(\text{£}365\text{m} \times 30/365)$		7.5
$\frac{1}{4}(\text{£}365\text{m} \times 70/365)$	<u>50.0</u>	<u>17.5</u>
		<u>40.0</u>

(c)

$$\text{Cost of discounts allowed} = (\frac{3}{4} \times \text{£}365\text{m}) \times 2\% = \underline{\text{£}5,475,000}$$

(d)

	£	£
Cost of discounts		5,475,000
<i>Less</i>		
Interest charges saved (£10m @ 12%)	1,200,000	
Bad debt savings	<u>300,000</u>	<u>1,500,000</u>
Net cost		<u>3,975,000</u>

The calculations reveal that the costs of the discounts scheme heavily outweigh the benefits.

(e) To manage its debtors the business should do the following:

- establish clear policies concerning who should receive credit and how long the credit period should be.
- establish a system for investigating creditworthiness.
- ensure that customers are invoiced promptly and that statements and reminders are issued at appropriate points.
- establish systems for monitoring and controlling debtors such as ageing schedules, average settlement period ratios and so on.
- set up procedures for dealing with slow payers.

11.3

Sparkrite Ltd

(a)

	last year	this year
<i>Stock turnover period</i>		
$\frac{(160 + 200)/2}{1,080} \times 365$	61 days	

$\frac{(200 + 250)/2}{1,125} \times 365$		73 days
--	--	---------

**Average settlement period*

$\frac{375}{1,800} \times 365$	76 days	
--------------------------------	---------	--

$\frac{480}{1,920} \times 365$		91 days
--------------------------------	--	---------

**Year-end debtors figures were used because opening figures were not available in both years.*

(b) (i) Ways in which the business can exercise control over stock levels include:

- Use of sales forecasting methods in order to assess demand for stocks.
- Use of stock management models in order to determine the economic order quantity.
- Proper authorisation procedures for ordering stock.
- Establishing an accurate stock recording system.
- Use of just-in-time method, improving supplier lead times and so on to minimise stock holding.
- Regular physical stock checks to ensure accuracy of stock records and to identify slow moving and obsolete stocks.
- Ensuring levels of stock monitoring and security are appropriate to the value of the stocks held.

(ii) Ways in which the business can exercise control over debtor levels include:

- Establishing creditworthiness checks on potential customers.
- Establishing credit limits.
- Offering discounts for prompt payment.
- Charging interest on late payment.
- Calculating average settlement periods and preparing ageing schedules of debtors outstanding.
- Invoicing customers promptly and sending reminders and statements at appropriate points.
- Checking to see where credit limits have been breached.
- Establishing a policy for dealing with late payers.
- Factoring (that is, allowing a finance institution to manage the debtors and obtaining finance on the strength of the debts owing to the business) where appropriate.

11.4

Plastic Toys Ltd

(a) The following methods can be used to assess the creditworthiness of a potential customer:

- *Bank references* These can be obtained with the customer's agreement. However, they are not usually very revealing since banks are reluctant to write anything which might add further to a customer's problems.
- *Trade references* These can be quite helpful. However, it is important to ensure that references are obtained from a representative sample of trade suppliers.
- *Credit agencies* These agencies use various sources to obtain information about businesses and the results can be very revealing. The amount of information received will be determined largely by how much you are prepared to pay.
- *The business's financial statements* These can be a very important source of information. If they are obtained from Companies House, however, it is possible that they will not be as up to date as required. However, the customer may offer more up to date information on request.
- *Sales staff* These may offer valuable information concerning a potential customer that has been gleaned from direct and indirect sources. However, where members of the sales staff are keen to make a sale, this source of information must be viewed with caution.

(b) The accounting controls used to monitor debtors include:

- Average settlement period ratios
- Ageing schedules of debtors.

These methods are described in the text.

Information concerning any breaches of agreed credit limits should also be provided in the form of a schedule for management action.

(c) **Ratio analysis**

	year 1	year 2	year 3
ROCE	16.6%	16.9%	(26.1%)
Net profit margin	12.5%	11.2%	(23.4%)
Current ratio	1.2	1.1	0.9
Acid test ratio	0.5	0.5	0.3
Stock turnover period*	91 days	82 days	183 days
Average settlement period for debtors	64 days	60 days	91 days
Sales (£000)	800	980	640

* Using sales figure rather than cost of sales which is unavailable.

The above figures reveal that Year 3 was a disastrous year for the business. Sales and profitability fell dramatically. The fall in sales does not appear to have been anticipated as stock levels have risen dramatically in Year 3. The fall in profitability and increase in stocks has created a strain on liquidity that should cause acute concern. The liquidity ratios are very low and it seems the business is in a parlous state. Extreme caution must therefore be exercised in any dealings with the business.

Before considering the proposal, the business should establish why Plastic Toys Ltd wishes to change its suppliers. In view of the problems that it faces, there may well be problems with current suppliers. Given three months credit, the business will be committed to supplying 6,000 kilos before payment is due. At a marginal cost of £7 per kilo, this means an exposure of £42,000.

The risks of non-payment seem to be very high unless there is information concerning Plastic Toys that indicates that its fortunes will improve in the near future. If the business is determined to supply the goods to Plastic Toys Ltd then some kind of security should be required in order to reduce the risk to Plastic Manufacturers Ltd.

12.3 Venture capital is long-term capital provided by certain institutions to help businesses exploit profitable opportunities. The businesses of interest to the venture capitalist will have higher levels of risk than would normally be acceptable to traditional providers of finance such as the major clearing banks. Venture capital providers may be interested in a variety of businesses including:

- business start-ups
- acquisitions of existing businesses by a group of managers
- young, expanding businesses requiring additional capital
- the buyout of one of the owners from an existing business.

The risks associated with the business can vary, in practice, but are often due to the nature of the products or the fact that it is a new business, which either lacks a trading record or has new management. Although the risks are higher, the businesses also have potentially higher levels of return - hence their attraction to the venture capitalist. The type of businesses helped by venture capitalists are normally small or medium-size businesses rather than large businesses listed on the stock exchange.

Venture capitalists will often make a substantial investment in the business and this will normally take the form of ordinary shares. However, they are also prepared to invest in preference shares and loan capital. In order to keep an eye on the sums invested, the venture capitalist will often require a representative on the board of directors as a condition of the investment. The venture capitalist may not be looking for a quick return and may well be prepared to invest in a business for five years or more. The return may take the form of a capital gain on the realisation of the investment. When considering an investment the venture capitalist will take into consideration such factors as:

- the quality of management
- the quality of the business plans
- the quality of the products and their likely demand
- the state of the industry in which the business operates
- the level of risk and the ways in which risk may be managed
- the possible exit route when the investment period ends.

12.4

Gainsborough Fashions

(a) The major factors that a bank should take into account are as follows:

Purpose What is the purpose of the overdraft? Is it to help finance a temporary cash shortage? Will the purpose ensure that the overdraft is self-liquidating, if not, how will the overdraft be repaid?

Repayment period When will the overdraft be repaid? Has a cash flow forecast been prepared clearly showing the repayment period and financing requirements? Are the underlying assumptions of the forecast valid and reliable?

Security What assets can be offered as security for the overdraft? Are the assets readily realisable?

Financial strength What is the financial position and performance of the business? What are the risks involved in the business in which it is engaged? Can the business cope with a downturn in sales?

Directors What is the ability and character of the directors? Can they manage the business efficiently? Would they make every effort to repay the overdraft when required?

Track record Has the business taken out loans before and, if so, did the business comply with the terms of these loans?

(b) A number of points can be made concerning the business's request for an overdraft:

Ability to repay The information available does not indicate how the proposed increase in overdraft might be repaid. In order to reduce the average credit period taken from three months to one month, the finance required will be £108,000 (that is, $2/3 \times £162,000$). This is more than four times the current net profit after taxation of the business. It does not seem likely, therefore, that the overdraft, which is meant to be a short-term form of borrowing, could be repaid out of short-term future profits. As the purpose of the overdraft is to repay trade creditors, the overdraft will not generate further cash flows for the business and so will not be self-liquidating.

It is interesting to note that the debentures are due for repayment in the very near future. Any repayment of the debentures before the overdraft is due for repayment is likely to make it even more difficult for the business to repay the overdraft.

Risk The purpose of the overdraft is to replace one form of short-term borrowing with another. This will mean that the financing risks will be transferred from the trade creditors to the bank. These financing risks are quite high. If the overdraft were granted for one year, the annual interest payments would increase by approximately £13,000 (that is, £108,000 @ 12%). Assuming profits remain constant, this would reduce the interest cover ratio of the business from 7.6 times to 2.1 times. The total debt liabilities to total asset ratio would remain unchanged by the new financing arrangements. However, the ratio is already high at 85.1% (that is, £201,000/£275,000) and the new arrangements would increase the banks exposure.

Security The balance sheet of the business does not reveal any assets, which the bank is likely to find particularly attractive as security for the loan. Although it is possible that the directors may be able to provide personal guarantees, it should be noted that they already offer personal guarantees in respect of the debentures outstanding. (However, if the debentures were repaid this would release some debt capacity.)

Under-capitalisation The main problem with the business appears to be one of under-capitalisation. The business really requires an injection of long-term finance in order to provide a sounder financial base. Given the high level of gearing of the business, lenders are likely to expect a significant proportion of any new long-term finance to be raised through the issue of equity shares. At present, the return to equity shareholders is very high at 56.1% (that is, £23,000/£41,000) and so raising additional equity finance may not be a problem. An issue of equity shares to raise all the necessary finance would mean that, if profits remain constant, the return to equity would still be 15.4% (that is, £23,000/£149,000) that may well prove attractive to investors.

Overall the request for an overdraft is unlikely to prove successful. Instead, the business should attempt to improve the long-term financial structure of the business. It should also review its current asset management (for example, average stock turnover period, average settlement period for debtors etc) to see if there is scope for improvement.

12.5

Telford Engineers plc

(a)

	Loan capital	Equity
	£m	£m
Profit before interest and tax	21.00	21.00
Interest payable	<u>7.80</u>	<u>5.00</u>
Profit before taxation	13.20	16.00
Corporation tax (40%)	<u>5.28</u>	<u>6.40</u>
Profit after tax	7.92	9.60
Dividends payable	<u>4.00</u>	<u>5.00</u>
Retained profit	<u>3.92</u>	<u>4.60</u>
<i>Capital and reserves</i>		
Share capital 25p shares	20.00	25.00
Share premium	-	15.00
Reserves	<u>46.92</u>	<u>47.60</u>
	66.92	87.60
<i>Loans</i>	<u>50.00</u>	<u>30.00</u>
	<u>116.92</u>	<u>117.60</u>

(b) **Earnings per share**

Loan capital (7.92/80)	9.9p	
Equity (9.6/100)		9.6p

(c) The loan alternative will raise the gearing ratio and lower the interest cover of the business. This should not provide any real problems for the business as long as profits reach the expected level for Year 10 and remain at that level. However, there is an increased financial risk as a result of higher gearing and the adequacy of the additional returns expected to compensate for this higher risk, must be carefully considered by shareholders. The figures above suggest only a marginal increase in EPS compared to the equity alternative at the expected level of profit for Year 10.

The equity alternative will have the effect of reducing the gearing ratio and is less risky. However, there may be a danger of dilution of control by existing shareholders under this alternative and may, therefore, prove unacceptable to them. An issue of equity may, however, provide greater opportunity for flexibility in financing future projects.

Information concerning current loan repayment terms and the attitude of shareholders and existing lenders towards the alternative financing methods would be very useful.