Assignment 4 Answers

Q1. (a) Consider these steps:

1. Order and receive $1,000 of steel from a supplier.

Payables go up by $1,000 (Credit), and raw materials inventory goes up by $1,000 (Debit).

2. Pay the supplier (typically 30 days later).

Payables go down by $1,000 (Debit), and cash goes down by $1,000 (Credit).

3. Move the steel onto the shop floor, and start fabrication.

Raw materials inventory goes down by $1,000 (Credit), and work in progress (WIP) goes up by $1,000 (Debit).

4. Incur $1,000 of shop labor costs in making the product.

Cash goes down by $1,000 (since people cash their payroll checks right away) (Credit), and work in progress goes up by an additional $1,000 (Debit).

5. Finish fabrication of an item with a cost of $2,000 of which the raw steel's cost is $1,000 and shop floor labor is $1,000, and move it to finished product inventory.

Work in progress goes down by $2,000 (Credit), and finished product inventory goes up by $2,000 (Debit). An item sits in inventory at the cost of making it, not at its expected sale price.

6. Sell the material to a customer for $2,500.

There are four entries here (two offsetting sets).

(1) Finished product inventory goes down by $2,000 (Credit), and cost of goods sold (COGS) goes up by $2,000 (Debit). It is at this point that the cost of the item is moved from an asset account (inventory) to an expense account (COGS). This ensures that the expense is recorded in the same time period as the sale.

(2) Sales revenue goes up by $2,500 (Credit), and accounts receivable goes up by $2,500 (Debit). The difference between sales revenue and cost of goods sold will be recognized in the income statement as contribution margin.

7. The customer pays (typically 30 days later).

Accounts receivable goes down by $2,500 (Credit), and cash goes up by $2,500 (Debit).

(b) Accounting is conservative, and an accountant would never recognize a speculative value (what she *thinks* she can sell something for) in advance of the sale. So the book value should be $2,000.

Note: Financial statements are built up from numerous small transactions to which rigorous accounting rules have been applied. A manager does not need to know bookkeeping but should have a general concept of its necessity and its value as the first step in the preparation of financial statements.

Q2. Answer:

A great deal of judgment goes into whether to classify an item as COGS or SG&A. It is very important is to be consistent within a company so that year-to-year trends can be seen. The answers below are one person's assessment.

1. Circuit boards that go into the manufactured item	COGS
2. Stationery	SG&A
3. The pay of the receptionist in the sales office	SG&A
4. The pay of the receptionist in the manufacturing plant	SG&A
5. Miscellaneous screws and fittings	SG&A
6. Telephone charges	SG&A
7. Raw steel for structural members	COGS
8. The pay of a welder brought in on contract	COGS
9. The pay of a welder on salary	SG&A
10. The pay of the floor sweeper in the manufacturing plant	SG&A
11. The cost of contract cleaning in the manufacturing plant	SG&A
12. The cost of the crew of a service vehicle	COGS
13. The maintenance charges of a service vehicle	COGS
14. The annual registration cost of a service vehicle	SG&A
15. The cost of annual business permits	SG&A
16. Welding consumables (i.e., welding rod)	Maybe (Usually SG&A, because they are too small amounts to be tracked towards specific products)
17. The pay of the shipping department	Maybe (Usually, SG&A for the internal staff; COGS for external contractor)
18. Part or all of the company president's salary	SG&A
19. Freight on inbound materials	COGS
20. Freight on outbound products	COGS (assuming sale point is remote from the factory)

Consumables such as welding rods are only treated as COGS if they are a significant cost in a manufactured item. The pay of the shipping department would only be treated as COGS if staff were hired or laid off in approximate proportion to sales. Freight to the point of sale would be COGS if it were paid for by the manufacturer.

Q3.

1. **Meter Sales**
2. **$75,500**
3. **$2,777,800_**
4. **$425,500**
5. **23.5%_**
6. **18%_**
7. **Meter Service**

Q4.

Loan	Interest of year 1	Current liability of the loan
Straight line repayment (5-year term)	**$2,000,000**	**$5 million**
Balloon payment (5-year term)	**$2,000,000**	**0**
Mortgage (20-year term)	**$2,000,000**	**$546,250**

Q5. The approximate balance sheet is as follows:

In Class Balance Sheet ($000)
Second Example

Assets			**Liabilities**	
Current Assets			**Current Liabilities**	
Cash		—	Short-term credit line	7,600
Receivables		6,000	Accounts payable	2,400
Short-term investments		—	Accrued expenses	100
Inventory		7,200	Taxes payable	—
Prepaid expenses		—	Current portion of long-term debt	300
		13,200		10,400
Fixed Assets			**Long-Term Debt**	
Land, building, and equipment at cost	8,000		Repayable grants	—
Less accumulated depreciation	1,600		Long-term debt	2,100
		6,400		
			Shareholders' Equity	
Long-term investments		—	Capital shares	5,600
Goodwill		—	Retained earnings	1,500
Total assets		19,600	**Total liability and equity**	19,600

Working capital	2,800
Working capital ratio	1.27

1. The company has total assets of $19.6 million of which $13.2 million are current and $6.4 million are fixed. For this business, the current assets, inventory, and receivables far exceed the equipment.
2. The business has total short-term debt of $7.6 million. Given the large value of receivables and inventory, this is not too surprising.
3. The working capital is $2.8 million (current assets minus current liabilities). The short-term lender would have some specific covenants regarding working capital, but at first look, there is not an obvious problem here.
4. If the cumulative dividend had been $1.8 million rather than $300,000, then retained earnings would be zero, and the short-term debt would be higher by $1.5 million, i.e., it would be $9.1 million. A short-term lender would be more nervous with this situation: the working capital is positive but low, and the working capital ratio is 1.11 (quite low). Again, the real test would be the specific agreement between the lender and the company.
5. If the inventory were cut in half, i.e., from $7.2 million to $3.6 million, then short-term debt would be reduced by $3.6 million as well. However, working capital does not change: it is still $2.8 million! The only way to increase working capital is by an adjustment below the current line, i.e., by injecting long-term debt (refinancing) or shareholder equity. This is an important point to learn. However, reducing inventory while leaving working capital unchanged will increase the working capital ratio from 1.28 to 1.41. (Some short-term lenders emphasize working capital ratio, and they would be more comfortable with the lower inventory.)

Q6.

Growthco Balance Sheet ($000)

		This Year		**Next Year**	**Source**	**Use**
Assets						
Current Assets						
Cash		—		—		—
Receivables		877		1,140		263
Short-term investments		—		—		—
Inventory		589		754		165
Prepaid expenses		54		66		12
		1,520		1,960		
Fixed Assets						
Land, building, and equipment at cost	6,200		6,200			—
Less accumulated depreciation	1,520		2,140		620	
		4,680		4,060		
Long-term investments		—		—		—
Goodwill		—		—		—
Total Assets		6,200		6,020		

Liabilities				
Current Liabilities				
Short-term credit line	609	53		556
Accounts payable	387	477	90	
Accrued expenses	67	93	26	
Taxes payable	15	33	18	
Current portion of long-term debt	60	60	—	
	1,138	716		
Long-Term Debt				
Repayable grants	—	—		
Long-term debt	$480	$420		$60
Shareholders' Equity				
Capital shares	$4,000	$4,000	$-	
Retained earnings	$582	$884	$302	
Total liability and equity	$6,200	$6,020		
Sources/uses of funds			$1,056	$1,056

Growthco Statement of Cash Flow ($000)

	Next Year
Operating Activities	
Net earnings for the year	502
Depreciation	620
Changes in non-cash working capital	–306
Subtotal	816
Investing Activities	
Additions to fixed assets	—
Additions to goodwill and intangibles	—
Subtotal	—
Financing Activities	
Dividends	–200
Net new long-term borrowings	–60
Net new capital shares	—
Subtotal	–260
Funds flow	556
Cash on hand (start of year)	–609
Cash on hand (end of year)	–53
Change in cash position	556

Several comments can be made about Growthco:

- After one year, the owners of Growthco have appeared to make some very wise decisions. The new investment they did this year has paid off in higher sales for next year. Margins are steady, and growth in SG&A is limited, so net earnings have increased substantially. Growthco needed more non-cash working capital next year to support the higher sales, but this is easily funded from operating cash flow, so from the SCF, net cash from operating activities is increasing.

- Growthco does not invest in new equipment this year, and the dividend is substantial but low compared to net cash from operating activities. The owners take next year as a period of consolidation, and they use the net cash from operations largely to reduce the short-term debt. Growthco's banker would be pleased to see this prudent action. Growthco has breathing room to ride out a bad year should one occur. Growthco can also look at future business expansion if opportunities exist or can increase its dividend next year. Its banker would support either move.

The balance sheet of Growthco with sources/uses identified is shown followed by the statement of changes in financial position. The balance sheet with sources and uses was not required for the solution but is presented here for completeness.