

Chapter 2

Accounting Review: Income Statements and Balance Sheets

2.1 Chapter Overview

2.2 The Income Statement

2.3 The Balance Sheet

2.4 The Importance of Accounting for Business Operations

After studying Chapter 2, you should be able to:

- Construct a basic income statement.
- Identify and define each item on a basic income statement.
- Construct a basic balance sheet.
- Identify and define each item on a basic balance sheet.
- Describe the difference between accounting data and cash.
- Explain the importance of accounting to a business.
- Identify the major ways in which a firm may legally manipulate its financial data.

Chapter Overview

At most schools, accounting is a prerequisite for the introductory finance course. Thus, you have probably recently taken an accounting course (or perhaps even two) and you may be tempted to skip this chapter. **DON'T!!!**

As finance professors, it has been our experience that students exiting basic accounting courses (though often well versed in accounting) do not have an adequate understanding of the structure and construction of, and basic relationships between, company income statements and balance sheets. Without this understanding, it is impossible to master financial statement analysis - which comprises the next three chapters of this book. Thus, even if you think your accounting background is strong, we still suggest that you read this chapter. And, if you find yourself struggling excessively through the remaining chapters of this section of the book, we recommend that you re-read this chapter - several times if necessary!

In this chapter, we outline the structure and composition of the two main financial statements used by businesses: the income statement and the balance sheet. Specifically, we present a basic description of the most common account items found on financial statements. Keep in mind that the descriptions presented in this chapter are from the point of view of a financial manager as opposed to an accountant. A financial manager is not particularly interested in how accounts are kept or recorded (i.e., T-accounts). A financial manager must, however, intuitively understand the nature of financial statement accounts before effective financial analysis and management can be achieved.

2.1 The Income Statement

The income statement, also called an earnings statement or a profit and loss statement, is an accounting statement that matches a company's revenues with its expenses over a period of time, usually a quarter or a year. The components of the income statement involve a company's recognition of income and the expenses related to earning this income. Revenue less expenses results in a profit or loss.

The income statement is a flow measure statement meaning that each value on an income statement represents the cumulative amount of that item through the given accounting period. Thus, the revenue on a first quarter income statement equals the cumulated amount of all sales during the first three months of the firm's fiscal year. The revenue on the second quarter income

statement equals the cumulated amount of all sales during the second three months of the firm's fiscal year. The same applies to expenses and therefore profits.

Consider the following monthly data for Bixel, Inc. for January through June:

<u>Month</u>	<u>Sales</u>	<u>Expenses</u>
January	\$20,000	\$15,000
February	\$30,000	\$20,000
March	\$40,000	\$30,000
April	\$30,000	\$20,000
May	\$50,000	\$40,000
June	\$20,000	\$15,000

Problem 2.1a Assuming that the first quarter of 2003 includes the months of January, February and March, what would Bixel, Inc. report as revenue on its first quarter income statement? What would Bixel, Inc. report as expenses on its first quarter income statement? What would Bixel, Inc. report as profit (or loss) on its first quarter income statement?

Answers: \$90,000; \$65,000; \$25,000

Problem 2.1b Assuming that the second quarter includes the months of April, May and June, what would Bixel, Inc. report as revenue on its second quarter income statement? What would Bixel, Inc. report as expenses on its second quarter income statement? What would Bixel, Inc. report as profit (loss) on its second quarter income statement?

Answer: \$100,000; \$75,000; \$25,000

Problem 2.1c What would Bixel, Inc. report as profit (loss) on its income statement covering the period January through June?

Answer: \$50,000

It is important to realize that profit on an income statement seldom corresponds with a company's actual cash flow. In fact, while all companies seek to maximize their cash flow (since cash is necessary to pay bills, salaries, loans, dividends and so on), not all companies attempt to maximize reported earnings. In fact, many companies actually try to minimize reported earnings in an attempt to reduce taxes.

The reason why income and cash flow seldom match is that most companies elect to prepare their income statements (and thereby their balance sheets) using accrual accounting as opposed to cash accounting. Accrual accounting recognizes revenues as earned when sales are transacted, regardless of when the company actually receives payment. Likewise, expenses are recognized when they are incurred rather than when the actual payment is made. In contrast, cash accounting recognizes revenues as earned only when payment is received and recognizes expenses as costs only when cash is actually paid out. As we will see in chapter four, one part of the statement of cash flows (specifically, cash flows from operating activities) represents the conversion of an accrual accounting income statement into a cash accounting income statement.

The basic structure of a multi-step income statement is outlined in Table 2.1. The term multi-step means that four profit measures are designated on the statement: **gross profit**, **operating profit** (sometimes referred to as operating income, Earnings before Interest and Taxes, or EBIT), **profit before taxes** (sometimes referred to as Earnings before Taxes or EBT), and **net income** (also referred to simply as earnings). These profit measures will be discussed in greater detail in Chapter 5.

Note that these are not the only accounts that may appear on an income statement and some income statements may utilize slightly different terminology. Some companies offer more detail on their statements than others. Certain expense items that are important for one company may be minor or nonexistent for another company. Nonetheless, these are the major items and

delineations that appear on most standard income statements and this is the income statement structure that we will use throughout the remainder of this section of the book.

Table 2.1

Income Statement
Company Name
For the Time Period Ending Date

Net sales
- Cost of goods sold
Gross profit
- Operating expenses
Operating profit
- Interest expense
Profit before taxes
- Taxes
Net income

Net sales - Sales revenue is recorded when a product is shipped, or more precisely, when ownership of the product (or service) is transferred from the seller to the buyer. Whereas identifying this point in time is relatively easy for merchandise sold at a retail store, it is often more complicated to pinpoint the exact transfer time of services. For example, a health club membership provides membership services over a period of time. When is revenue recognized? The law allows the income recognition to take place as soon as the member signs a contract. Although this is not exactly correct in terms of the definition, it is nonetheless allowed and used.

In general, companies prefer to record revenue as soon as possible. Accurate reporting, however, must note that some of this revenue may never actually be collected. Often times people sign a service contract (for example, a health club membership) and then cancel without ever paying any cash. Companies and individuals sometimes purchase products on credit but do not pay when their bill arrives. Consumer rights legislation, lemon laws, money-back guarantees, trial periods, credit card company stop-payment return policies, defaults, and so on, mean that not all sales will result in full payment.

To account for this fact and possibility, firms calculate net sales as follows:

$$\text{Net sales} = \text{Gross sales} - (\text{Returns and Allowances}).$$

Some firms also offer sales discounts for large volume purchases - in such cases, these are also netted out of gross sales. Often returns and allowance numbers are estimates. If actual returns turn out to be less than estimated returns, a credit is made to net sales during the next accounting period. If, however, actual returns turn out to be greater than estimated returns, the allowance account should be increased during the next accounting period to reflect this fact.

Problem 2.2 In 2003, Tanner, Inc. had gross sales of \$1,253,400. The company's management reported a Returns and Allowances estimate of \$53,400 in 2003. What did Tanner, Inc. report as Net sales in 2003?

Answer: \$1,200,000.

Cost of goods sold - Whenever a product is manufactured or sold, certain direct costs are incurred. These costs are designated on the income statement as cost of goods sold, or COGS. For a retail company, direct costs are simply the cost of materials purchased for resale. For a manufacturing company, direct costs can also include labor costs, manufacturing overhead, and depreciation expenses associated with production. Since service companies incur few direct costs, their income statements usually do not include cost of goods sold. For uniformity and simplicity, unless otherwise specifically noted, we will assume throughout this section of the text that all firms are retailers, or at least that COGS is equal to materials purchased for resale.

Whenever an item is sold, that item must be allocated a certain cost, that is, a cost of goods sold. If a retail company sells 25 shirts in a given accounting period (assume one day), each of the 25 shirts must be assigned a cost. If the retail company purchased the 25 shirts from a manufacturer for \$10 per shirt, cost of goods sold would be \$250. Assume, however, that the retail company actually purchased 45 shirts from the manufacturer during the accounting period in batches of 20 shirts at \$8 per shirt, 15 shirts at \$10 per shirt and 10 shirts at \$14 per shirt. Thus, the retailer purchased \$450 worth of shirts from the manufacturer (at an *average* cost of \$10 per shirt). If the retailer only sells 25 shirts during the accounting period, he must assign a cost to these 25 shirts as cost of goods sold and record the remaining amount as inventory. If the retailer chooses to assign the *average* purchase cost to each shirt, cost of goods sold will be \$250 and ending inventory will be \$200.

In general,

$$\text{Cost of goods sold} = \text{Beginning inventory} + \text{Materials purchases} - \text{Ending inventory.}$$

Thus,

$$\begin{aligned}\text{Cost of goods sold} &= \$0 + \$450 - \$200 \\ &= \$250.\end{aligned}$$

Firms can choose between three methods of inventory valuation (and thereby cost of goods sold valuation): FIFO, LIFO, and Average Cost. Refer to a basic accounting text for more information on the three methods if necessary. Here, suffice to say that different inventory valuation methods can produce different cost of goods sold values.

Operating expenses - Operating expenses are expenses other than cost of goods sold that a company incurs in the normal course of business. These include items such as management salaries, advertising expenditures, repairs and maintenance costs, research and development expenditures, lease payments, and general and administrative expenses. This latter category includes everything from salaries of office staff to paper clips. As mentioned above, for a manufacturer, depreciation expense is considered as a cost of goods sold; for a retailer, depreciation is included in operating expenses. Because we are limiting our focus to retail companies only, depreciation will be noted throughout the text as an operating expense - often times listed separately on the income statement.

Interest expense - Interest expense is the cost to the firm of borrowing money. It depends on the overall level of firm indebtedness and the interest rate associated with this debt. Interest expense is generally a small fraction of total firm expenses, however, this expense as a percent of revenue can fluctuate dramatically with changes in the firm's borrowing requirements or with the general level of interest rates in the economy.

Taxes - Income taxes are a necessary part of business for all profitable for-profit firms. Earned income can be taxed at the federal, state and/or local levels and the provision for income taxes can be calculated using published tax tables from the respective government agencies. Because taxes are paid on an estimated basis throughout the year (with the minimum estimated tax being equal to what was owed in the prior year) and taxes owed are calculated at the end of the year based on the firm's actual profit before taxes, reported taxes and actual cash taxes paid will often differ. This difference is reported on the balance sheet under the deferred tax account.

Net income - Net income (also called net profit or earnings) is the “bottom line” of the income statement. It represents the base profit earned by a firm in a given accounting period. Net income divided by the number of common shares outstanding is referred to as earnings per share, or EPS. This value represents the profit earned for each share of stock. The current market price of the stock divided by EPS is called a P/E ratio. Analysts often consider EPS and P/E ratios to be important indicators of a firm’s current and potential future performance. These measures and their significance will be explained in greater detail later in the book.

Problem 2.3a In 2003, Burghoff, Inc. (a hardware retail company) sold 10,000 units of its product at an average price of \$400 per unit. The company reported estimated Returns and allowances in 2003 of \$200,000. Burghoff actually purchased 11,000 units of its product from its manufacturer in 2003 at an average cost of \$300 per unit. Burghoff began 2003 with 900 units of its product in inventory (carried at an average cost of \$300 per unit). Operating expenses (excluding depreciation) for Burghoff, Inc. in 2003 were \$400,000 and depreciation expense was \$100,000. Burghoff had \$2,000,000 in debt outstanding throughout all of 2003. This debt carried an average interest rate of 10 percent. Finally, Burghoff’s tax rate was 40 percent. Burghoff’s fiscal year runs from January 1 through December 31. Given this information, construct Burghoff’s 2003 multi-step income statement.

Answer:

**Income Statement
Burghoff, Incorporated
For the 12 month period Ending December 31, 2003**

Net sales	\$3,800,000
Cost of goods sold	<u>3,000,000</u>
Gross profit	800,000
Operating expenses (excl. depreciation)	400,000
Depreciation expense	<u>100,000</u>
Operating income	300,000
Interest expense	<u>200,000</u>
EBT	100,000
Taxes	<u>40,000</u>
Net income	60,000

Notes: Net sales = Gross sales – Returns and Allowances = (10,000) (\$400) – 200,000.
Cost of goods sold = # units sold x Cost per unit = (10,000) (\$300).
Interest expense = (Debt outstanding) (Average interest rate) = (\$2,000,000) (.10).
Taxes = (EBT) (Tax rate) = (\$100,000) (.40).

Problem 2.3b What was Burghoff's 2003 ending inventory balance (in both units and in dollars)?

Answer: 1,900 units and \$570,000

A firm's income statement indicates a great deal about the health of a company. Analysis of this statement, in particular analysis of trends over time, provides a firm's managers, creditors and stockholders with important insights into the future potential of the company. Good analysis will also highlight areas where changes need to be considered.

Hopefully, you now understand the basic structure and composition of an income statement. This understanding is essential before any type of meaningful financial analysis or management can occur. To verify the former, try to complete the following problem without looking back over this section of the book. Be sure that you can properly define, identify and classify each item on this company's income statement. If you can do so, then you are ready to go on. If not, be sure that you carefully reread this section of the book.

Problem 2.4 Prepare a multi-step income statement for the Appully Company (a clothing retailer) for the year ending December 31, 2003 given the information below:

Advertising expenditures	68,000
Beginning inventory	256,000
Depreciation	78,000
Ending inventory	248,000
Gross Sales	3,210,000
Interest expense	64,000
Lease payments	52,000
Management salaries	240,000
Materials purchases	2,425,000
R&D expenditures	35,000
Repairs and maintenance costs	22,000
Returns and allowances	48,000
Taxes	51,000

Answer:

**Income Statement
The Appully Company
For the 12 month period Ending December 31, 2003**

Net sales	3,162,000
Cost of goods sold	<u>2,433,000</u>
Gross profit	729,000
Operating expenses (excluding depreciation)	417,000
Depreciation	<u>78,000</u>
Operating profit	234,000
Interest expense	<u>64,000</u>
Earnings before taxes	170,000
Taxes	<u>51,000</u>
Net income	119,000

2.2 The Balance Sheet

The balance sheet is a summary statement of what a company owns (or is owed) and what a company owes (or what others own) at a specific point in time. It categorizes all of a company's resources as assets, liabilities, and owner's equity.

The basic structure of a balance sheet is shown in Table 2.2. Note, as with the income statement, that these are not the only accounts that may appear on a balance sheet and some balance sheets may utilize slightly different terminology. Some companies offer more detail on their statements than others. Certain accounts that are important for one company may be minor or nonexistent for another company. Nonetheless, these are the major items and delineations that appear on most standard balance sheets and this is the balance sheet structure that we will use throughout the remainder of this section of the book.

Table 2.2
Balance Sheet
Company Name
For the Time Period Ending Date

ASSETS

Cash

Net accounts receivable

Inventories

Total current assets

Gross fixed assets

(Less Accumulated depreciation)

Net fixed assets

Total assets

LIABILITIES

Notes payable

Accounts payable

Accrued expenses

Current portion of L. T. debt

Total current liabilities

Long-term (L.T.) debt*

Total liabilities

Preferred stock

Common stock

Retained earnings

Total liabilities and equity

* excluding current portion.

The basic balance sheet identity is:

Total Assets = Total Liabilities + Shareholders Equity.

It is very important to note that a balance sheet is a stock measure statement, meaning that each value on a balance sheet is the value of that account on the specific date associated with the balance sheet. The value of the account (particularly liquid asset and liability accounts) at a later date may differ substantially from that reported on the balance sheet.

Consider the following monthly data for Bixel, Inc. for January through June:

<u>Month</u>	<u>Ending Accounts Receivable</u>	<u>Ending Inventory</u>
January	\$2,000	\$ 5,000
February	\$3,000	\$ 8,000
March	\$4,000	\$10,000
April	\$3,000	\$16,000
May	\$5,000	\$12,000
June	\$2,000	\$ 9,000

Problem 2.5a What would Bixel, Inc. report as Accounts receivable on its first quarter balance sheet (the balance sheet for the 3 month period ending March 30, 2003)? What would Bixel, Inc. report as Inventory on its first quarter balance sheet?

Answer: \$4,000; \$10,000

Problem 2.5b What would Bixel, Inc. report as Accounts receivable on its second quarter balance sheet (the balance sheet for the 3 month period ending June 30, 2003)? What would Bixel, Inc. report as Inventory on its second quarter balance sheet?

Answer: \$2,000; \$9,000

2.2.1 Asset Accounts

Cash - Items on the balance sheet are listed in order of liquidity and the most liquid asset account is cash. Companies hold cash for various reasons and in various forms, some of which are restricted for special purposes. Cash is most frequently represented by demand deposits at banks that are available for use in a company's operations via checks or in temporary interest-bearing investments.

It is important to note that the availability of reported cash may be restricted if interest-bearing deposits are pledged against debt. Likewise, compensating balances, which may be required for support of bank credit, may also be unavailable for operations. If a company has

declared a dividend to be paid on January 10, 2003 and on December 31, 2002 reports cash on its balance sheet, some of the reported cash has actually already been spent. If a company has foreign bank accounts, these accounts must be translated into dollars at the prevailing exchange rate on the balance sheet statement date. Exchange rate fluctuations can substantially alter the value of the account. In summary, although cash is the most liquid asset on the balance sheet, it is not *necessarily* true that a company with a large cash balance can pay its bills as they come due.

Some companies temporarily invest excess cash in marketable securities such as certificates of deposits (CDs), Treasury bills, notes, and bonds, other US government securities, bankers' acceptances, or high-grade corporate commercial paper. These temporary investments can earn interest income until the cash is needed in the business. Appropriate marketable securities are highly liquid and maintain a stable market value. For all practical purposes, marketable securities are essentially equivalent to cash and, in fact, are often included in cash on the balance sheet as opposed to being separately listed.

Net accounts receivable - When a company sells its products or services on credit it is shown on the balance sheet as an accounts receivable. Credit sales often stipulate payment terms that allows the purchaser to pay within a specified time and may offer a discount as an incentive for early payment. Accounts receivable remain on the balance sheet until they are collected.

Some amount of accounts receivable will never be collected and, therefore, constitute a bad debt, or loss. A company prepares for this by calculating the percentage of possible bad debt (from prior actual experience) and creating a corresponding reserve that is deducted from its gross accounts receivable. This reserve is often referred to as an allowance for doubtful accounts. Thus,

Net accounts receivable

= Gross accounts receivable - allowance for doubtful accounts.

Expensing for bad debts on the income statement as an operating expense can regularly increase the allowance account. This way, when an account is determined to be uncollectible, it is charged against the allowance for doubtful accounts instead of directly to the income statement. This in turn insulates the income statement from a sudden loss resulting solely from a poor credit decision.

Problem 2.6a Boswell, Inc. is a temporary help service company. All of the company's services are sold on credit (most customers pay in approximately 60 days). Due to the economy and a lenient credit policy, Boswell's bad debt (i.e., accounts that are never collected) is relatively large and highly variable from year to year. Boswell had annual gross sales, gross accounts receivable and actual bad debt amounts as follows for the years ending December 31, 1999 through 2003:

<u>Year</u>	<u>Gross Sales</u>	<u>Gross Accounts Receivable</u>	<u>Actual Bad Debt</u>
1999	\$1,000,000	\$167,000	\$ 50,000
2000	\$2,000,000	\$333,000	\$150,000
2001	\$3,000,000	\$500,000	\$225,000
2002	\$4,000,000	\$667,000	\$ 75,000
2003	\$5,000,000	\$833,000	\$250,000

Assume that for financial statement reporting purposes, Boswell estimates an allowance for doubtful accounts of 5 percent of annual sales. Accordingly, what did Boswell report as Net sales and Net accounts receivable on its 1999 through 2003 income statements and balance sheets?

Answer:

<u>Year</u>	<u>Allowance for Doubtful Accounts</u>	<u>Reported Net Sales</u>	<u>Reported Net Accounts Receivable</u>
1999	\$ 50,000	\$ 950,000	\$117,000
2000	\$100,000	\$1,900,000	\$233,000
2001	\$150,000	\$2,850,000	\$350,000
2002	\$200,000	\$3,800,000	\$467,000
2003	\$250,000	\$4,750,000	\$583,000

Problem 2.6b Instead assume that Boswell did not estimate an allowance for doubtful accounts but merely subtracted actual bad debt from gross sales and gross accounts receivable to determine net sales and net accounts receivable. (Ignore the potential timing and identification of bad accounts problem – this example is merely presented for illustration purposes). Under these circumstances, what did Boswell report as Net sales and Net accounts receivable on its 1999 through 2003 income statements and balance sheets?

Answer:

<u>Year</u>	<u>Actual Bad Debt</u>	<u>Reported Net Sales</u>	<u>Reported Net Accounts Receivable</u>
1999	\$ 50,000	\$ 950,000	\$117,000
2000	\$150,000	\$1,850,000	\$183,000
2001	\$225,000	\$2,775,000	\$275,000
2002	\$ 75,000	\$3,925,000	\$592,000
2003	\$250,000	\$4,750,000	\$583,000

If you compare the answers to problem 2.6a and 2.6b, you should notice that reported net sales and reported net accounts receivable are less volatile through the five year period when Boswell uses an estimated allowance for doubtful accounts (i.e., 5 percent of annual sales) as opposed to merely reporting sales and accounts receivable net of actual bad debt. That is, use of the allowance account allows a firm to “smooth” out these numbers. Additional information concerning the use (and abuse) of allowance accounts is contained in the following chapter.

Inventories - There are three forms of inventories: raw materials, work in process, and finished goods. For a retailer, finished goods constitute the bulk of all inventories. A manufacturer possesses all three forms of inventory and it is very important to monitor the distribution between the three inventory levels over time. As noted above, inventory can be valued using

either the FIFO, LIFO, or average cost valuation method. Just as different inventory valuation methods can produce different cost of goods sold values, they can also produce different inventory values on the balance sheet.

Total current assets - The sum of the items listed above constitutes total current assets. A current asset is, in general, an account that is expected to be converted into cash in less than one year. Note that this definition is somewhat arbitrary and not necessarily applicable to all firms and to all current asset accounts.

Gross fixed assets, Accumulated depreciation and Net fixed assets - Fixed assets include equipment, buildings, vehicles, tools, computers, office equipment, leasehold improvements, furniture - in general, any items of a fairly permanent nature that are required for the normal conduct of a business. Accounting standards dictate that balance sheets report the value of fixed assets at book value. Book value is defined as the original historical cost (the purchase price paid by the company) minus allowable depreciation to date.

All fixed assets, with the exception of land, are assumed to lose their economic value over time. When it is purchased, a fixed asset is initially valued at cost. Each year thereafter it is depreciated. (As such, depreciation merely reflects the fact that most fixed assets wear out and must eventually be replaced). The asset is expensed on the income statement and valued at a progressively lower value (i.e., book value) on the balance sheet. In the end, the asset is considered to be either without value or to have reached a salvage value, below which it cannot be reduced any further.

There are two primary methods for figuring annual depreciation: the straight-line method and the accelerated cost recovery system method. Most firms choose to use the straight-line method for reporting purposes (because it tends to smooth earnings through time) and the accelerated method for tax purposes. We will only assume the use of straight-line depreciation throughout the remainder of this book.

By law, a firm needs only to report Net fixed assets on its balance sheet. However, some companies offer additional detail on the fixed asset portion of their balance sheets. Specifically, they include gross fixed assets and accumulated depreciation along with net fixed assets. (If these additional accounts are not specifically listed on the balance sheet, they should appear in a footnote to the statement). The relationship between these three accounts is illustrated below using the fixed asset section of the Robert Dunnick Company Balance Sheet:

The Robert Dunnick Company
Fixed Asset Portion of Balance Sheet
For the Years Ending December 31, 2001, 2002, and 2003
(all figures in thousands of dollars)

	<u>2001</u>	<u>2002</u>	<u>2003</u>
Gross fixed assets	0	120,000	180,000
Less Accumulated Depreciation	<u>0</u>	<u>10,000</u>	<u>25,000</u>
Net fixed assets	0	110,000	155,000

The Dunnick Company began operations on January 1, 2002 - thus, the balance sheet for December 31, 2001 lists \$0 fixed assets. In 2002, the company purchased fixed assets (plant and equipment) for \$120,000,000, depreciated on a straight-line basis over 10 years to a \$20,000,000 salvage value (i.e., annual depreciation of \$10,000,000). The \$10,000,000 in depreciation for 2002 is listed on the income statement and added to the accumulated depreciation account on the balance sheet (\$0 + \$10,000,000). In 2003, the company purchased another \$60,000,000 of fixed assets, causing the gross fixed asset account to grow from \$120,000,000 to \$180,000,000. Assuming that the new assets are being depreciated on a straight-line basis over 10 years to a \$10,000,000 salvage value, or at \$5,000,000 per year, the company will list depreciation of \$15,000,000 on its income statement (\$10,000,000 for the assets purchased in 2002 and \$5,000,000 for the new assets purchased in 2003). The accumulated depreciation account grows to \$10,000,000 + \$15,000,000 = \$25,000,000 and net fixed assets equals gross fixed assets less accumulated depreciation = \$180,000,000 - \$25,000,000 = \$155,000,000.

Note that if all the company listed on its balance sheet was net fixed assets, the change in gross fixed assets can be determined by adding depreciation for the year to the change in net fixed assets. Thus, for 2003, the cash spent on new plant and equipment equals depreciation for the year as listed on the income statement of \$15,000,000 plus the change in net fixed assets of \$45,000,000 (\$155,000,000 - \$110,000,000). The resulting amount, \$15,000,000 + \$45,000,000 = \$60,000,000 represents the actual cash outflow that occurred in 2003 for fixed assets.

Problem 2.7a Accumulated depreciation on the Bentley, Incorporated 2002 Balance sheet was \$386,000. Accumulated depreciation on the Bentley, Incorporated 2003 Balance sheet was \$454,000. Bentley did not sell any existing fixed assets in 2003. What did Bentley report as depreciation expense on its 2003 Income statement?

Answer: \$68,000.

Problem 2.7b Assume that Bentley, Incorporated reported gross fixed assets of \$3,256,000 on its 2003 balance sheet, assume that Bentley did not buy or sell any fixed assets in 2004, and assume that depreciation expense reported on Bentley's 2004 income statement was \$70,000. What did Bentley report as Net fixed assets on its 2003 balance sheet? What did Bentley report as Accumulated depreciation on its 2004 balance sheet? What did Bentley report as Net fixed assets on its 2004 balance sheet?

Answer: \$2,802,000; \$524,000; \$2,732,000.

Total Assets - The sum of all current and long-term assets equals total assets. These are the items that a firm uses to produce revenue. Efficiency dictates that firms generate as much revenue as possible using as few total assets as necessary. Thus, many efficiency statistics and measures focus on the relationship between assets and sales. This is true because assets are not free. Every item on the left hand side of the balance sheet must be financed with items on the right hand side of the balance sheet. For example, when a firm sells a product on credit (creates an accounts receivable), the purchase of that product by the firm must be financed in some way. If it is financed with a bank loan, the cost of that bank loan is interest and the higher the interest expense the lower the firm's net income or profit. In order to maximize profit, firms should try to finance assets with the lowest cost funds available. That is, for profitability (and other) reasons, not only is it important for a firm's financial managers to focus on assets, they must focus on the structure and composition of liabilities and net worth as well.

2.2.2 Liability Accounts

Notes payable - Notes payable frequently represent the short-term borrowing of a company from a bank for the seasonal financing of current assets, in particular, accounts receivable and inventory. For example, a retail company may use notes payable (that is, its line of credit) to finance a buildup of inventory just prior to the Christmas selling season. As the company sells its products it creates accounts receivable (assuming sales on store credit). When these accounts are collected, the company uses the proceeds to reduce the line of credit loan.

The time period between the purchase of inventory and the collection of cash to be used to pay down the loan may be several months. This time period is sometimes referred to as the cash conversion cycle. Specifically, the cash conversion cycle is equal to the inventory conversion period (the average number of days from the purchase of raw materials or finished goods inventory to the sale of the final good) plus the receivables conversion period (the average number of days from the sale of the final good to the collection of cash). The longer the cash conversion cycle, the longer notes payable will be carried as a positive amount on the balance sheet, and therefore the greater the annual interest cost to the company. Thus, all else constant, reducing the cash conversion cycle can increase a company's net income. For this reason, many firms carefully monitor their cash conversion cycle.

For seasonal companies, short-term bank debt (notes payable) obviously fluctuates throughout the year. Depending on when in the cash conversion cycle a company's fiscal year-end falls, the company may report a large or zero notes payable year-end balance. Because a company's balance sheet tends to look most favorable when inventory, accounts receivable and notes payable are at their minimal levels, most companies choose their fiscal year-ends to correspond with this time. That is why many retail firms choose March 31 as a fiscal year-end as opposed to December 31.

Accounts payable - Whereas accounts receivable represent sales made by the company to customers on credit, trade accounts payable represent purchases (usually for inventory) made by the company from suppliers on credit. Thus, accounts payable owed by the purchasing company are shown as accounts receivable on the supplier's balance sheet. Accounts payable are, in general, a source of "interest free" financing for a company in the sense that if the company pays its accounts in a timely manner, financing always remains available for additional purchases. If, however, the company does not pay its suppliers when payment is due, its suppliers may discontinue the extension of credit for future purchases. Then the company will have to find alternative financing sources (for example, notes payable) to purchase inventory. An analysis of

trade credit terms and the relative cost of alternative financing sources will be discussed in Chapter 5.

Accrued expenses - Accruals represent specific direct and operating costs that a company has expensed on its income statement which in fact have yet to be paid at the close of the reporting period. These expenses are usually paid at regular intervals and include such items as utilities, rent, wages and salaries, and taxes. For example, if wages are paid every two weeks and the firm's balance sheet is prepared in the middle of the pay period, wages owed as of that date would be reported as an accrual.

Current portion of long-term debt - Sometimes firms borrow long-term money on an installment basis. That is, the firm makes periodic payments over the life of the loan that includes principal reduction as well as interest. The current portion of long-term debt, sometimes called current maturities of long-term debt, represent the principal portion of these installment payments that is due over the next 12 months. Note that the sum of current portion of long-term debt and long-term debt is the total long-term debt that a firm has outstanding at any point in time. Designating some debt as current is merely a transfer process.

Problem 2.8a On June 1, 2003, Brooks, Incorporated borrowed \$5,000,000 from the bank. This loan has a term of 10 years and this loan represents the only debt that the company has outstanding. Brooks is required to make a \$500,000 principal payment on the loan every year for the next 10 years, with the first payment due on June 1, 2004. An interest payment of 8 percent of the principal balance that was outstanding for the prior 12 month period is also due with each principal payment. How should Brooks classify this loan on its December 31, 2003 balance sheet? What would Brooks list as interest expense on its 2003 income statement?

Answer:

Current portion of Long-term debt	\$ 500,000*
Long-term debt	\$4,500,000

* Note that as of December 31, 2003, a payment of \$500,000 is due during the following 12 months (specifically, on June 1, 2004).

Interest expense on 2003 income statement = $(\$5,000,000) (.08) = \$400,000$.

Problem 2.8b How would Brooks classify this loan on its December 31, 2004 balance sheet? What would Brooks list as interest expense on its 2004 income statement?

Answer:

Current portion of Long-term debt	\$ 500,000
Long-term debt	\$4,000,000

Interest expense on 2004 income statement = $(\$4,500,000) (.08) = \$360,000$.

Total current liabilities - The sum of the items listed above constitutes total current liabilities. Similar to a current asset, a current liability is, in general, a liability that is expected to be paid off in less than one year. As with current assets, this definition is somewhat arbitrary and not necessarily applicable to all firms and to all current liability accounts. A company normally pays off its current liabilities as current assets are converted into cash.

Long-term debt - Long-term debt represents liabilities with maturities in excess of one year. It is usually used to finance long-term assets such as land, buildings, and equipment. Occasionally long-term debt is used to finance “permanent” current assets. These are the base level of inventory and accounts receivable maintained by a firm in a normal (non-peak) season. For example, a greeting card retailer maintains a base level of birthday, get well, and friendship cards throughout the year. This base level of “permanent” inventory is increased during the month of February with Valentine’s Day cards, May with Mother’s Day cards, June with Father’s Day cards, and so on.

Preferred stock - Preferred stock is a hybrid security including both elements of debt and equity. It promises a fixed periodic payment similar to debt. However, if this payment must be skipped due to insufficient earnings, preferred stockholders have no recourse, similar to equity. Preferred stock is usually cumulative, meaning that skipped payments accrue and must be paid when earnings allow. Finally, preferred stock often does not include voting rights.

Only a small number of companies actually issue preferred stock and most of those that do are regulated companies. For this reason, and for general simplicity, we will ignore this account throughout the remainder of this section of the book.

Common stock - On many balance sheets common stock is divided into two components: common stock at par value and additional paid-in capital (or, capital surplus). The first component can be used to determine the number of shares currently outstanding. The second component represents the additional money (over and above par value) generated when the company actually sold the stock.

Consider the following example:

**The Robert Dunnick Company
Equity Section of Balance Sheet
For the Year Ending December 31, 2003**

Common stock (\$0.50 par value)	\$10,000,000
Additional paid-in capital	44,000,000
Retained earnings	<u>32,000,000</u>
Total shareholders equity	\$86,000,000

The Robert Dunnick Company's common stock has a par value of \$0.50 per share. Common stock par value is an arbitrary value that is established when a company authorizes shares to be issued. \$10,000,000 of common stock at \$0.50 per share implies that the Dunnick Company has $\$10,000,000 / \$0.50 = 20,000,000$ shares of stock outstanding. The total amount of money raised by the Dunnick Company from the sale of all of its stock through time has been:

Common stock at par + Additional paid-in capital

= \$10,000,000 + \$44,000,000

= \$54,000,000.

This amount represents an average value of \$2.70 per share. If in fact all 20,000,000 shares had been issued on the same day, the sale price per share would have been \$2.70.

Retained earnings - Retained earnings represent the cumulative total of all net income that has been reinvested into the company. Many companies retain some of their annual profit to fund the expansion (replacement) of assets to reduce their reliance on outside capital markets. The annual *addition* to retained earnings is equal to:

Net income - Dividends paid.

Retained earnings on the balance sheet are equal to the prior year's retained earnings balance plus this year's *addition* to retained earnings.

For the Robert Dunnick Company example above, assume that the company's net income for the year ending December 31, 2003 was \$12,000,000 and that common stock dividends paid were \$3,000,000. Thus, the addition to retained earnings was:

$$\text{\$12,000,000} - \text{\$3,000,000} = \text{\$9,000,000}$$

implying that Retained earnings on the balance sheet for the year ending December 31, 2002 must have been:

$$\text{\$32,000,000} - \text{\$9,000,000} = \text{\$23,000,000}.$$

A common error concerning retained earnings is that the amount listed on the balance sheet for a given year (e.g. \$32,000,000 for the Dunnick Company as of December 31, 2003) can be used by the firm to cover future losses or to pay off debt. That is, that retained earnings is similar to cash. This is not the case. Retained earnings is money that has been used over the years to purchase assets. Retained earnings cannot be "re-spent" unless a firm wants to liquidate assets previously purchased.

The sum of common stock at par value, additional paid-in capital, and retained earnings is called a company's net worth, owners' equity, or shareholders' equity. It can also be called the book value of the firm's equity. Thus, the book value of Robert Dunnick Company's equity is \$86,000,000. If Dunnick's stock trades in the stock market at a current price per share of \$6.00, then the market value of Dunnick's equity would be:

$$\text{20,000,000 shares} \times \text{\$6.00 per share} = \text{\$120,000,000}.$$

Note that the market value of equity calculated in this manner already includes retained earnings. Why? Assume that you own 10 percent of a company's stock. If your firm retains money in any given year, it will usually use this money to purchase additional assets causing the asset value of your firm to grow. You will now own 10 percent of a larger company and this will be reflected as an increase in the firm's stock price. Thus, the current stock price of any firm reflects, in addition to other things, all accumulated retained earnings.

Problem 2.9 Over its three year history, the Bunker Company has issued common stock on three separate occasions. The company issued 250,000 shares of stock on March 10, 2001 at an issue price of \$6.50 per share. Another 400,000 shares were issued on July 18, 2002 at \$8.75 per share. Finally, an additional 350,000 shares were issued on October 24, 2003 at \$12.25 per share. All common stock is recorded on the company's balance sheet at a par value of \$2.00 per share. Bunker's fiscal year runs from January 1 through December 31 and Bunker reported net income of \$2,420,000 on its 2001 income statement, \$3,680,000 on its 2002 income statement and \$4,840,000 on its 2003 income statement. Bunker paid dividends of \$420,000 in 2001, \$680,000 in 2002 and \$840,000 in 2003. Using this information, fill in the table below:

**The Bunker Company
Equity Section of Balance Sheet
For the Years Ending December 31, 2001, 2002 and 2003**

	<u>2002</u>	<u>2003</u>	<u>2004</u>
Common stock (\$2.00 par value)	_____	_____	_____
Additional paid-in capital	_____	_____	_____
Retained earnings	_____	_____	_____
Total shareholders equity	_____	_____	_____

Answer:

	<u>2002</u>	<u>2003</u>	<u>2004</u>
Common stock (\$2.00 par value)	\$ 500,000	\$ 1,300,000	\$ 2,000,000
Additional paid-in capital	1,125,000	3,825,000	7,412,500
Retained earnings	<u>2,000,000</u>	<u>5,000,000</u>	<u>9,000,000</u>
Total shareholders equity	\$3,625,000	\$10,125,000	\$18,412,500

Total liabilities and equity - The sum of total liabilities and total stockholders' equity equals total liabilities and equity which, by definition, must be equal to total assets - a balance sheet must balance. The fact that the items on the right hand side of the balance sheet show how the items on the left hand side of the balance sheet have been purchased, or more appropriately, how they have been financed, means that balance sheets can tell a great deal about a company's past and reveal certain information concerning its future. This fact also applies to income statements. That is why financial managers, analysts, creditors, and stockholders carefully investigate financial statements.

Hopefully, you now understand the basic structure and composition of a balance sheet. As was stated earlier concerning the income statement, this understanding is essential before any type of meaningful financial analysis or management can occur. To verify the former, try to complete the following problem without looking back over this section of the book. Be sure that you can properly define, identify and classify each item on this company's balance sheet. If you can do so, then you are ready to go on. If not, be sure that you carefully reread this section of the book.

Problem 2.10 Using the following (scrambled) accounts prepare a balance sheet for Bhatti, Incorporated (a retail company) for the year ending December 31, 2003 (assume that these are the only balance sheet accounts):

Accounts payable	39,000
Accrued expenses	8,000
Accumulated depreciation	51,000
Additional paid-in capital	86,000
Allowance for doubtful accounts	2,000
Cash	23,000
Common stock (\$0.20 par)	45,000
Current portion of L.T. Debt	6,000
Gross accounts receivable	40,000
Gross fixed assets	486,000
Inventories	54,000
Long term debt	210,000
Net accounts receivable	38,000
Net fixed assets	435,000
Retained earnings	138,000
Short-term bank loan (notes payable)	18,000

Answer:

Balance Sheet
Bhatti, Incorporated
For the 12 month period Ending December 31, 2003

Cash	23,000
Gross accounts receivable	40,000
Allowance for doubtful accounts	<u>(2,000)</u>
Net accounts receivable	38,000
Inventories	<u>54,000</u>
Current assets	115,000
Gross fixed assets	486,000
Accumulated depreciation	<u>(51,000)</u>
Net fixed assets	<u>435,000</u>
Total assets	550,000
Short-term bank loan (notes payable)	18,000
Accounts payable	39,000
Accrued expenses	8,000
Current portion of L.T. Debt	<u>6,000</u>
Current liabilities	71,000
Long term debt	<u>210,000</u>
Total liabilities	281,000
Common stock (\$0.20 par)	45,000
Additional paid-in capital	86,000
Retained earnings	<u>138,000</u>
Total liabilities and equity	550,000

2.3 The Importance of Accounting for Business Operations

Accounting, in its most fundamental sense, is merely a system of record keeping. Income statements and balance sheets are the formalized documents used to summarize and report accounting data. Firms engage in real and monetary activities and these must be recorded and reported to tax authorities, creditors, equity holders, and the firm's managers. The following story is offered as an example of how financial statements can be used to summarize the operations of small firms as well as large. It also demonstrates that financial statements can be constructed for any time period - a day, a week, a quarter, a year, or any other period.

One summer Saturday morning as Richie, an energetic and enterprising six year old, and his dad, a finance professor, were eating breakfast, Richie noticed an ad in the newspaper for a Nintendo Game Cube video game player. The sale price of \$199.99 included, if purchased that

week, a free second controller as well as a coupon for \$50 off the regular retail price of the video game, RedCard Soccer 2003. Earlier that week Richie and his dad had discussed the possibility of Richie getting a Game Cube for Christmas. Given this discussion, the free controller, the coupon, and the fact that, to Richie, Christmas was at least another 5,000 days away, Richie asked his dad if they could get the video game player that afternoon.

“Dad,” said Richie, “you can just buy my Christmas present early this year.” “And dad,” he continued, “if you get me a Game Cube today, you can play with my game anytime you like.” Although Richie’s dad was tempted, because he wanted a Game Cube at least as much as Richie did, instead he decided to use this opportunity to teach Richie a lesson about money. “Richie,” he said, “if you can earn one-fourth of the money on your own, which is \$50, I will put in the rest of the money and buy you a Game Cube.”

Richie, though very excited about the offer, had absolutely no idea how a six year old could earn \$50. After much discussion, however, he and his dad decided that Richie should start a business and that the best business for a six year old to operate was a lemonade stand. The day was perfect for selling lemonade - it was hot and given the rain earlier in the week, most of the people in the neighborhood would be cutting grass and working in their yards. Thus began Richie’s venture into the world of business and corporate finance. Surely, thought Richie’s dad, this will be a lesson my son will never forget!

Richie’s dad loaned him \$30 (interest free) to start his business. With the money, Richie bought 10 two-quart packets of lemonade mix for \$1.00 per packet, 100 plastic cups for \$5.00 (5 cents per cup), a poster board and magic marker to make a sign for \$3.00, a table and chair at a local garage sale for \$8.00, and a small box in which to keep his money for \$2.00. Richie’s dad agreed to loan Richie a two-quart pitcher and mixing spoon for \$1.00 per day and to sell him water and ice from the kitchen for \$0.50 per pitcher (in business, there is no such thing as a free lunch). Richie negotiated terms of net 5 on these items, meaning that the rent and cost of water and ice had to be paid within 5 days of when they were incurred.

Richie priced his lemonade at \$0.50 per glass. By the end of the day, he had sold 60 glasses of lemonade. Since each pitcher produced 10 glasses of lemonade, he used 6 packets of mix during the day. All sales were for cash, except for 2 glasses that he sold to his dad while he was cutting the grass and 4 glasses that he sold to his mom for that evening’s dinner. Neither Richie’s mom nor dad had cash with them when they bought the lemonade so Richie agreed to sell them the lemonade on credit with credit terms of net 2 days.

After dinner that evening, dad explained to Richie the importance of officially recording the day's activities. The current state and operating history of any business, dad explained, are best summarized with an income statement and a balance sheet. To track actual cash flow, he continued, it is best to use a statement of cash flows, which nets all cash outflows against cash inflows for a given time period. Accordingly, Richie and his dad sat down at the computer to create a set of financial statements for the lemonade business. The statements they created, together with explanations for each item/account are shown in Table 2.3.

Problem 2.11 Before looking at Table 2.3, try to create an income statement for Richie's Lemonade Stand (using accrual accounting) on your own in the space below.

Problem 2.12 Before looking at Table 2.3 try to create a balance sheet for Richie's Lemonade Stand (using accrual accounting) on your own in the space below.

Table 2.3

**Richie's Lemonade Stand
Income Statement
For the First Day of Operations**

Sales revenue	\$30	60 glasses @ \$0.50 per glass
Cost of goods sold	<u>9</u>	6 packet lemonade mix @ \$1.00 per packet + 60 plastic cups @ \$0.05 per cup
Gross profit	21	
Operating expenses	<u>4</u>	rent for pitcher and spoon + 6 pitchers of water and ice @ \$0.50 per pitcher
Operating profit	17	
Interest expense	<u>0</u>	loan from dad interest free
Net income	\$17	

**Richie's Lemonade Stand
Balance Sheet
For the Day Ending the First Day of Operations**

Cash	\$29	plug figure necessary to balance total assets and total liabilities (also see Table 2.4)
Accounts receivable	3	6 glasses to mom and dad @ \$0.50 per glass
Inventories	6	4 packets of lemonade mix @ \$1.00 per packet + 40 plastic cups @ \$0.05 per cup
Fixed assets	<u>13</u>	poster board and magic marker @ \$3.00 + table and chair @ \$8.00 + money box @ \$2.00
Total assets	\$51	
Accounts payable	\$ 4	see operating expenses negotiated at net 5 days
Loan	30	from dad to start business
Retained earnings	<u>17</u>	net income for first day of operations
Total Claims	\$51	

As seen in Table 2.3, Richie's lemonade stand produced net income of \$17 on total sales revenue of \$30. Unfortunately, some of this revenue was not actually collected (the \$3 in credit sales to mom and dad) during the accounting period - in this case one day. Likewise, some of the expenses in the income statement were not actually paid during the accounting period (the \$1 rent for the pitcher and spoon and the \$3 for the water and ice which were negotiated at terms of net 5 days). These two noncash flows are shown on the balance sheet as accounts receivable and accounts payable. This illustrates a fundamental relationship between income statements and balance sheets: most current asset and current liability accounts on company balance sheets represent cash inflows or cash outflows which are reported on the income statement but which in reality have yet to occur.

Problem 2.10 The income statement reports net income of \$17. What was the actual cash flow from operations for Richie's Lemonade Stand?

Net cash flow from operations = cash collected - cash outlays

$$= (\$30 - \$3) - (\$13 - \$4)$$

$$= \$18.$$

The entire simplified statement of cash flows, which includes cash outflows for asset purchases and cash flows from/to financing sources is shown in Table 2.4.

Table 2.4

**Richie's Lemonade Stand
Simple Statement of Cash Flows
For the First Day of Operations**

Cash Inflows:	
Cash collected from customers	\$27
Loan from dad	<u>\$30</u>
Total cash inflows	\$57
Cash Outflows:	
Purchase of lemonade mix	\$10
Payment for marker, board, table, chair and money box	\$13
Purchase of plastic cups	<u>\$ 5</u>
Total cash outflows	\$28
 <i>NET CASH FLOW</i>	 <i>\$29</i>

Table 2.4 indicates that Richie should have ended the day with \$29 in his moneybox - he began the period with \$0 and experienced a net cash flow during the first day of operations of \$29. In fact, he did end the day with \$29 in his moneybox. And, not surprisingly, this amount corresponds with the plug figure for cash on the balance sheet in Table 2.3. A more detailed description of the statement of cash flows appears in chapter 4.

Postnote to the lemonade stand story: After completing the financial statements, partly because selling and record keeping was not his idea of fun, Richie concocted a brilliant scheme. He sold his table and chair, pitcher and spoon, and magic marker to his mom for \$11. Richie then went to visit his grandparents (who lived 2 blocks away) and sweet talked them into giving him \$10 for the remaining 4 packets of lemonade mix, 40 plastic cups, and the first sign that their grandchild made for his first venture into the world of business. Richie then reasoned that one item that he forgot to include in the income statement was wages to himself for working the lemonade stand all day. He figured that \$50 (the amount of cash that he had in his money box plus the \$11 he just got from his mom and the \$10 that he got from his grandparents) was an appropriate wage payment, so he extracted \$50 in cash from the business.

With this \$50, Richie went to have a talk with his dad. “Dad,” Richie said, “you told me that if I could earn \$50, you would put in the rest and buy me a Game Cube video game player and a Tony Hawk’s Pro Skater 2 video game. Well, here is the \$50.” Richie then explained to his dad how he got the money.

Somewhat surprised, Richie’s dad said, “All that is fine and good, but it doesn’t work that way because \$30 of that money is mine. Remember, I loaned you \$30 to start your business.”

“Oh, one thing that I forgot to tell you dad is that I decided to declare bankruptcy. As the sole creditor to the business, you are free to repossess all of my remaining assets which, given that I have sold everything else, is my business’s accounts receivable - the \$1 that you owe me and the \$2 that mom owes me. And dad, thanks for the lesson in business. I sure learned a lot.”

Surely, thought Richie’s dad, I have learned a lesson that I will never forget! He then took Richie to the store.

The next three chapters in this book are devoted to the interpretation and analysis of financial statements. Hopefully this accounting review has solidified your understanding of the basic structure and construction of income statements and balance sheets. Because, as Richie’s dad tried to explain to Richie before his business went bankrupt, to fully appreciate analysis, one must first understand what he/she is analyzing. Now, if Richie’s dad could only figure out how to analyze a six year old.

Assignment 2.1

Solve the following problems in the space provided

Prepare a multi-step income statement for Freida, Incorporated (a furniture retailer) for the year ending December 31, 2003 given the information below:

Interest expense	17,090
Beginning inventory	63,210
Depreciation expense	12,510
Management salaries	17,950
Advertising expenditures	12,930
Ending inventory	68,390
Gross Sales	462,720
Taxes	3,270
Returns and allowances	10,210
Lease payments	39,270
Materials purchases	228,580
R&D expenditures	4,890
Repairs and maintenance costs	2,910

- a. What is Frieda's gross profit, operating profit, earnings before taxes, and net income?

- b. What is Frieda's net profit margin? (Note: net profit margin is net income divided by net sales. We will discuss this concept in detail in Chapter 5).
- c. Assuming that on Frieda's December 31, 2002 Balance Sheet, Accumulated depreciation was \$212,820 and that during 2003 Frieda did not sell any fixed assets, what would Frieda's Accumulated depreciation value be on December 31, 2003?

Assignment 2.2

Solve the following problems in the space provided

From the following accounts, prepare a balance sheet for the Windcharter Company for the year ending December 31, 2003 (assume that these are the only balance sheet accounts - use cash as a plug figure to balance the balance sheet):

Gross fixed assets	284,950
Inventories	136,500
Long term debt (excluding current portion)	134,300
Accrued expenses	11,850
Accumulated depreciation	82,310
Short-term bank loan (notes payable)	32,570
Preferred stock	8,000
Retained earnings	89,280
Current portion of L.T. Debt	4,080
Net accounts receivable	105,770
Additional paid-in capital	71,600
Accounts payable	50,830
Common stock (\$0.20 par)	60,000
Cash	??

- a. What are Windcharter's Current assets, Current liabilities, Total liabilities, Net fixed assets and Total liabilities and net worth?

- b. Assuming that Windcharter's net income for 2003 was \$25,400 and Retained earnings reported on the 2002 annual balance sheet was \$79,880, what was Windcharter's dividend payment per share in 2003?
- c. If Windcharter's Net fixed assets on its 2002 balance sheet was \$184,660 and depreciation on Windcharter's 2003 income statement is \$10,260, what amount of cash did Wincharter spend on fixed assets in 2003?

Assignment 2.3

Solve the following problems in the space provided

1. In 2002, Jackson Incorporated had gross sales of \$4,269,200. For 2002, management estimated that returns and allowances would be 5 percent of gross sales. What did Jackson report as net sales on its 2002 income statement?

In 2003, Jackson Incorporated had gross sales of \$4,183,820. For 2003, management estimated that returns and allowances would be 2 percent of gross sales. What did Jackson report as net sales on its 2003 income statement?

Assuming that Jackson only reports net sales on its income statement (a muddled discussion concerning gross sales and estimated allowances is buried in the firm's footnotes), what do you find curious about your answers to the above two questions?

2. The inventory accounts for Billings, Incorporated for the years ending December 31, 2001, 2002 and 2003 are shown in the table below (all figures are in dollars):

	<u>2001</u>	<u>2002</u>	<u>2003</u>
Inventories	250,200	272,300	260,100

Billings purchased \$196,400 of materials in 2002 and \$206,300 of materials in 2003.

- a. What did Billings report as cost of goods sold on its income statement in 2002?
- b. What did Billings report as cost of goods sold on its income statement in 2003?
3. On its December 31, 2002 balance sheet, the Jones Company reported gross fixed assets of \$3,200,000 and net fixed assets of \$1,920,000. On its December 31, 2003 balance sheet, Jones reported gross fixed assets of \$4,620,000 and net fixed assets of \$3,080,000. Assuming that the Jones Company did not sell any fixed assets in 2003, what did the company list as depreciation expense on its income statement for 2003?

Additional Questions and Problems

1. Define and/or provide examples for each of the following terms:
 - a. Accrual accounting
 - b. Cash accounting
 - c. Stock measure statement
 - d. Flow measure statement
 - e. Gross revenue
 - f. Allowance for doubtful accounts
 - g. Cost of goods sold
 - h. Gross profit

- i. Operating profit
- j. Current assets
- k. Current liabilities
- l. Marketable securities
- m. Accumulated depreciation vs. Depreciation expense
- n. Cash conversion cycle
- o. Permanent current assets
- p. Accrued expenses
- q. Par value of common stock
- r. Additional paid-in capital or Capital surplus
- s. Book value of equity
- t. Addition to retained earnings

2. Sam's Siding had sales of \$100,000 in 2003. The cost of goods sold was \$65,000, operating expenses (excluding depreciation) were \$10,000, interest expenses were \$5,000 and depreciation expense was \$10,000. The firm's tax rate is 35 percent.
 - a. What is earnings before interest and taxes (i.e., operating profit)?
 - b. What is net income?
3. Using the following accounts from the Quest-Mar, Incorporated (a retail clothing store) income statement for the year ending December 31, 2003, answer the questions below (all figures in thousands of dollars):

Research & Development expenditures	\$ 50
Cost of goods sold	600
Lease payments	30
Advertising	20
Taxes	35
Repairs and maintenance expenses	40
Management salaries	100
Interest expense	30
Net sales	1,000
Depreciation	60

- a. Quest-Mar's gross profit is \$_____.
 - b. Quest-Mar's operating profit is \$_____.
 - c. Quest-Mar's net profit is \$_____.
4. In 2002, the Chau Company purchased 180,000 units from its supplier at a cost of \$42.50 per unit. Chau sold 192,000 units of its product in 2002 at a price of \$58.75 per unit. Chau began 2002 with \$1,360,000 in inventory (inventory is carried at a cost of \$42.50 per unit). Using this information, compute Chau's gross profit for 2002 and compute the company's 2002 ending inventory balance.
5. In 2003, Canandra's, Inc. (a retail clothing company) sold 250,000 units of its product at an average price of \$20 per unit. The company reported estimated Returns and allowances in 2003 of 2 percent of gross revenue. Canandra's actually purchased 240,000 units of its product from its manufacturer in 2003 at an average cost of \$14 per unit. Canandra's began 2003 with 20,000 units of its product in inventory (carried at an average cost of \$14 per unit). Operating

expenses (excluding depreciation) for Canandra's, Inc. in 2003 were \$1,000,000 and depreciation expense was \$100,000. Canandra's had \$10,000,000 in debt outstanding throughout all of 2003. This debt carried an average interest rate of 5 percent. Finally, Canandra's's tax rate was 40 percent. Canandra's's fiscal year runs from January 1 through December 31. Given this information, construct Canandra's's 2003 multi-step income statement.

6. Blooming Plants, Incorporated sold 3,200 plants to Freda's Florist Shop for \$10 per plant in 2003. These plants cost Blooming Plants \$6 to produce. In addition, Blooming spent \$4,000 on general selling expenses and administration in 2003. Blooming Plants, Inc. borrowed \$20,000 on January 1, 2003 on which it paid 14 percent interest. Both interest and principal were paid on December 31, 2003. Blooming's tax rate is 30 percent. Depreciation for the year was \$3,000. Compute Blooming's gross profit, operating profit, Earnings before taxes (EBT) and net income for 2003.
7. Classify each of the following balance sheet items as either an asset, a liability or equity and as either current or noncurrent:

Inventory	Retained earnings
Accounts receivable	Accounts payable
Long-term debt	Accrued wages and taxes
Common stock (par value)	Notes payable (bank loans)
Plant and equipment	Marketable securities
Cash	Prepaid expenses

8. Construct a balance sheet for Taylor's Tables given the following data (assume that the items listed below are the only entries on Taylor's balance sheet). What is total shareholders' equity?

Cash = \$100,000
 Long-term debt = \$1,700,000
 Net Property = \$1,000,000
 Accounts receivable = \$220,000
 Inventory = \$2,000,000
 Accounts payable = \$170,000
 Total shareholders' equity = ???

9. Using the following accounts from the Quest-Mar, Incorporated balance sheet for the year ending December 31, 2003, answer the questions below (all figures in thousands of dollars) – use cash as a plug figure.

Current portion of L.T. Debt	\$ 60
Leasehold improvements	300
Accrued expenses	40
Accumulated depreciation	200
Gross fixed assets	900
Accounts payable	90
Inventories	190
Common stock (\$1.00 par)	400
Short-term bank loan	20
Net accounts receivable	100
Long-term bank loan	600
Retained earnings	200
Cash	???

- a. Quest-Mar's current assets are \$_____.
- b. Quest-Mar's current liabilities are \$_____.
- c. Quest-Mar's total assets are \$_____.
- d. Quest-Mar's total liabilities are \$_____.
- e. Quest-Mar's total stockholder's equity is \$_____.

10. The following long-term asset accounts appeared in the Creech, Inc. balance sheets for the years ending December 31, 2001 and 2002:

	<u>2001</u>	<u>2002</u>
Gross fixed assets	\$32,652,400	\$44,286,300
Accumulated Depreciation	<u>(8,342,200)</u>	<u>(9,124,400)</u>
Net fixed assets	\$24,310,200	\$35,161,900

- a. Assuming that the company did not sell any long-term assets in 2002, what did Creech report as Depreciation expense on its 2002 income statement?
 - b. If Creech, Inc. purchased \$10,246,200 of machinery and equipment in 2003 (and did not sell any long-term assets in 2003), what did Creech report as Gross fixed assets on its 2003 balance sheet?
 - c. If Creech, Inc. reported Depreciation expense of \$943,100 on its January 1 through December 31, 2003 income statement, what did the company report as Net fixed assets on its 2003 balance sheet? (Assume that the event described in question b occurred in 2003).
11. The Crump Company borrowed \$4,200,000 from a local bank on March 1, 1994. The loan requires the company to repay \$280,000 in principal every year (the first principal payment on the loan was due and paid on March 1, 1995). Assuming that this is the only long-term loan that the company has ever made and that all principal payments to date have been made on time, fill in the accounts below from Crump's December 31, 2000 through 2003 balance sheets:

The Crump Company
Long-term Debt Accounts
For the Years Ending December 31, 2001 and 2002

	<u>2000</u>	<u>2001</u>	<u>2002</u>
Current portion of Long-term debt	_____	_____	_____
Long-term debt (excl. current portion)	_____	_____	_____

12. Consider the equity portion of the Danborn Company's balance sheet for the fiscal years ending December 31, 2002 and 2003.

The Danborn Company
Equity Section of Balance Sheet
For the Years Ending December 31, 2002 and 2003
(all figures in thousands)

	<u>2002</u>	<u>2003</u>
Common stock (\$2 par)	\$1,100	\$1,250
Capital surplus	7,600	9,200
Retained earnings	2,400	3,200

Danborn reported net income for 2002 of \$1,100 and net income for 2003 of \$1,500. Given this information, answer the following questions.

- a. How many new shares of stock did Danborn issue in 2003?
 - b. Assuming that all new stock was issued at the same time, at what price per share did the new stock sell?
 - c. What was Danborn's dividend per share payout in 2003?
13. The year-end 2002 balance sheet for Brad's Copy, Inc. lists common stock (\$1.00 par value) at \$5,000,000, capital surplus at \$10,000,000 and retained earnings at \$45,000,000. On the 2003 year-end balance sheet, retained earnings are listed as \$47,000,000. The firm's net income in 2003 was \$8,000,000. No stock was issued or repurchased in 2003. What were total dividends paid by the firm in 2003? What were dividends per share paid by the firm in 2003?

14. Cecil's Camper Company has an operating profit of \$400,000. Interest expense for the year was \$28,000, taxes paid were \$111,600, and common stock dividends paid were \$80,000. Cecil has 42,400 shares of common stock outstanding.
- Calculate the earnings per share and the common dividends per share for Cecil's Camper Company.
 - What was the increase (decrease) in retained earnings for the year?
 - If Cecil issues 3,000 additional shares of common stock and uses the proceeds from the sale to pay down the firm's debt, interest expense would be reduced to \$12,000, but taxes would increase to \$115,100. Using the same information concerning operating income and dividends given above, calculate Cecil's earnings per share and common dividends per share assuming the 4,000 shares are issued.
15. The Lunder Company has assets of \$200,000, current liabilities of \$25,000, and long-term liabilities of \$70,000. The firm has 20,000 shares of common stock outstanding.
- Compute the firm's book value per share (that is, book value of equity divided by number of shares of common stock outstanding).
 - If there is \$11,000 in earnings available to common stockholders and Lunder has a P/E ratio of 15 times earnings per share, what is the current price of the stock?
 - What is the ratio of the current price per share of the stock to the book value per share of the stock? What do you think is the significance of this relationship, specifically for Lunder, as well as in general?

16. Condensed (incomplete) balance sheets for Moab Lines, Inc for 2002 and 2003 are shown below (assume that Moab neither issued nor repurchased any stock in 2003):

Moab Lines, Inc. Balance Sheets
For the Years Ending December 31, 2002 and 2003
(figures in dollars)

	2002	2003
Current assets	60,000	74,000
Net fixed assets	<u>400,000</u>	<u>500,000</u>
Total assets	460,000	574,000
Current liabilities	20,000	30,000
Long-term debt	300,000	400,000
Owners' equity	<u>???</u>	<u>???</u>
Total liabilities & equity	460,000	574,000

- a. What was owner's equity in 2002? In 2003?
- b. Compute Net income for 2003 assuming the Moab paid total dividends of \$6,000 in 2003.
- c. If Moab purchased \$140,000 in new fixed assets in 2003, what must have been depreciation expense on the 2003 income statement?
- d. Net working capital is defined as Current assets minus Current liabilities. What was the change in Net working capital between 2002 and 2003?
- e. If Moab borrowed \$150,000 of new long-term debt in 2003, how much long-term debt must have been repaid in 2003?

17. Condensed (incomplete) balance sheets for 2002 and 2003 and the (incomplete) income statement for 2003 for Eli's Everything Shop are shown below:

Eli's Everything Shop Balance Sheets
For the Years Ending December 31, 2002 and 2003
(figures in dollars)

	2002	2003
Current assets	40,000	62,000
Net fixed assets	<u>200,000</u>	<u>318,000</u>
Total assets	240,000	380,000
Current liabilities	20,000	38,000
Long-term debt	120,000	232,000
Shareholders' equity	<u>???</u>	<u>???</u>
Total liabilities & equity	240,000	380,000

Eli's Everything Shop Income Statement
For the Period January 1 to December 31, 2003
(figures in dollars)

Revenue	180,000
Cost of goods sold	104,000
Operating expenses (excluding depreciation)	32,000
Depreciation	10,000
Interest expense	24,000

- a. What is shareholder's equity in 2002? In 2003?
- b. What is Net working capital (see part d of question 16) in 2002? In 2003?
- c. Compute Earnings before taxes in 2003.
- d. Assuming that Eli's pays taxes equal to 30 percent of taxable income, compute Taxes for 2003.
- e. Assuming that no fixed assets were sold in 2003, compute the total dollar expenditure on the purchase of new fixed assets (i.e., the change in gross fixed assets from 2002 to 2003) in 2003.
- f. If Eli reduced Notes payable by \$4,000 in 2003, what was the increase or decrease in all other current liabilities in 2003?