



# Balance Sheet

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15.501/516 **Accounting**  
Spring 2004

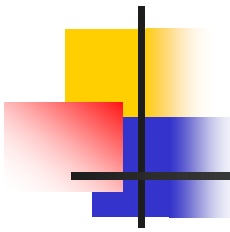
**Professor S.Roychowdhury**

**Sloan School of Management  
Massachusetts Institute of Technology**

**Feb 09, 2003**



# Some residual administrative matters



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- Access web page
- Pass/Fail – Yes
- Audit – No
- First point of contact: TAs
- Syllabus



# Questions from last class

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- Do private companies file with the SEC?
- Only if they have public debt outstanding.



# Financial Statements – the Annual Report

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- Management Discussion
- Auditors Report
- Consolidated Balance Sheet
- Consolidated Net Income
- Consolidated Statement of Stockholders Equity
- Consolidated Cash Flow Statements
- Notes to Accounts



# Balance Sheet: Assets

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## ■ **Assets**

- Probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events.
- The specific types of assets a firm owns depends on the nature of its business -- manufacturing (e.g., General Motors) vs. merchandising (e.g., K mart) vs. financial (e.g., Citicorp) vs. service (e.g., H & R Block) business.



# Balance Sheet: Assets

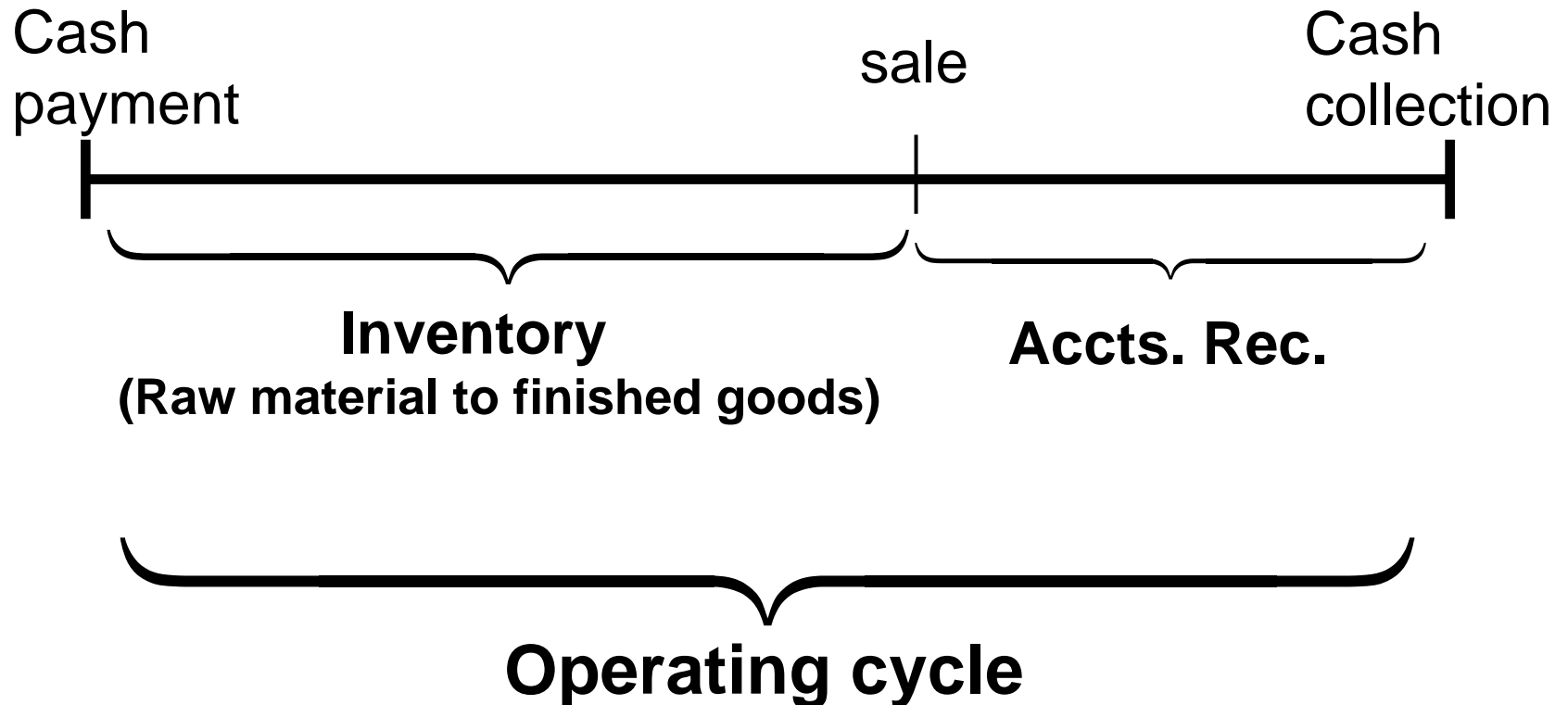
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## ■ **Current assets**

- Cash and other assets that are reasonably expected to be realized in cash or consumed during the normal operating cycle of the business or within one year, **whichever is longer**.
  - Cash and cash equivalents
  - Short-term investments -- at market value -- We will discuss this in detail later.
  - Accounts receivable -- Net realizable value
  - Inventory -- Lower of Historical Cost or Market Value (current replacement cost)
  - Prepaid expenses

# The Operating Cycle

- Definition: an operating cycle is defined as the elapsed time between the start of production and the eventual receipt cash from customers from the sale of the product





# Balance Sheet: Assets

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- **Long-Term Investments**

- Investments intended to be held for a period of time usually extending beyond one year.
- Debt and equity securities such as stocks, bonds, and long-term notes receivable.
- Tangible assets not currently used in operations, e.g., land held for investment purposes.





# Balance Sheet: Assets

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## ■ **Property, Plant, and Equipment**

- Assets of a durable nature that are to be used in the production or sale of goods, or rendering of services, rather than being held for sale.
  - Machinery, Factory Building, etc.
- Carried at Cost (-) Accumulated Depreciation
- Land on which the company conducts its operations is carried on the balance sheet at the original cost – no depreciation.
  - Distinguish from land held for investment purposes.



# Balance Sheet: Assets

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## ■ Intangible Assets

- Non-current, non-physical assets of a business, the possession of which provides uncertain future benefits to the owner
  - E.g., goodwill, trademarks, patents, copyrights, etc.
- Is accounts receivable an intangible asset?
  - Not for accounting purposes
- Intangible assets are carried on the balance sheet at cost (-) accumulated **amortization**.
- Cost = Whatever was **paid** to acquire them.
- Internally generated intangible assets are not shown as assets



# Balance Sheet: Liabilities

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## ■ Liabilities

- **Probable future economic sacrifices** arising from **present obligations** of a particular entity **to transfer assets or provide services** to other entities **in the future** as a **result of past transactions or events**.

## ■ Current Liabilities

- Obligations that are expected to be paid (or services expected to be performed) with the use of assets that are listed in the current section of the balance sheet.



# Balance Sheet: Liabilities

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- Examples of current liabilities
  - accounts payable, wages payable, interest payable, income taxes payable, deferred revenues.
- Current portion of long-term debts are classified as current liabilities.
- However, debt expected to be refinanced through another long-term debt are treated as long-term liabilities.
  - What is the intuition here?



# Balance Sheet: Liabilities

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## ■ Long-Term Liabilities

- Obligations usually expected to require payment over a period of time beyond one year.
- Usually financing obligations, e.g., arising from issuance of bonds, long-term notes, and mortgages.
- The maturity date, the rate of interest, and any security pledged to support the borrowing agreement should be clearly shown.



# Balance Sheet: Owners' Equity

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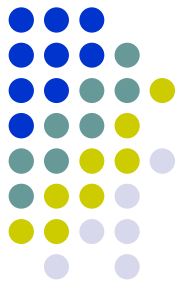
- **Stockholders' Equity**
  - The **residual interest** in the assets that remain after deducting the liabilities.
- **Contributed Capital**
  - A measure of the capital contributed to the company by its owners.
  - Contribution can be through cash, noncash assets, or valuable services.
- Different classes of capital: Common stock and Preferred stock
- **Retained earnings**



# Financial Statements: Retained Earnings & Shareholders' Equity

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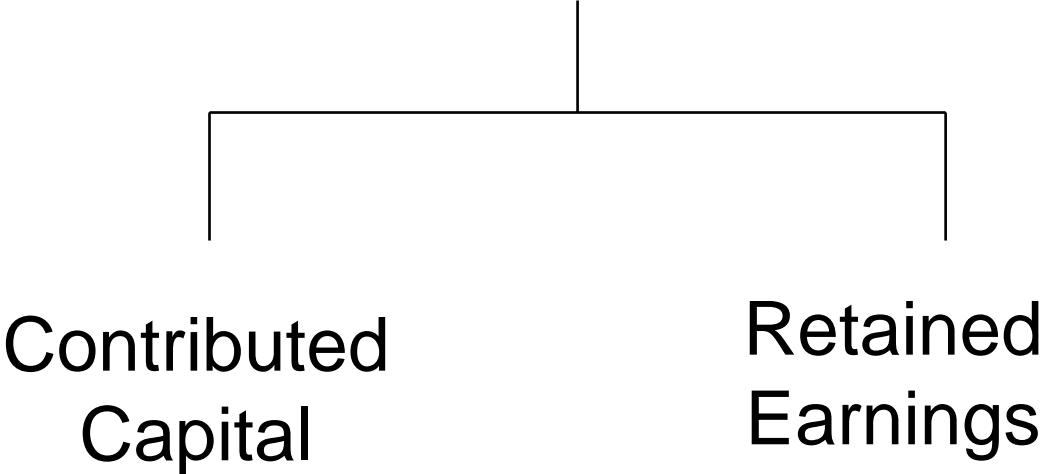
- Retained earnings
  - A measure of undistributed profits of a business
  - Do not include capital contributed by owners
- Retained earnings =  
Cumulative sum of profits earned from the inception of business –  
Cumulative sum of all “dividends” distributed to the owners from the inception of business
- How does retained earnings change **over a period of time** (e.g., a year)
  - Beginning balance in retained earnings
  - **Add** Net income earned during the period
  - **Subtract** Dividends distributed during the period
  - Ending balance in retained earnings



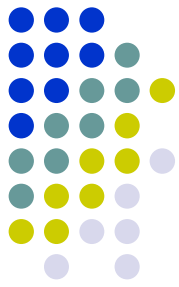
# The Mechanics of Financial Accounting

## Fundamental Accounting Equation

$$\text{Assets} = \text{Liabilities} + \text{Owners' Equity}$$



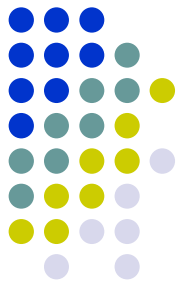




# What type of account?

## Identify assets, liabilities, or equity

- Equipment
- Retained Earnings
- Patent
- Common Stock
- Dividend Payable
- Accumulated depreciation
- Prepaid Expense

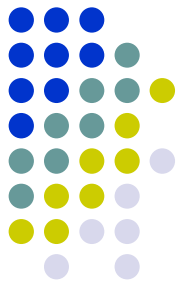


# What type of account?

## Identify assets, liabilities, or equity

- Supplies Inventory
- Accounts Receivable
- Land
- Goodwill developed by firm
- Unsettled damage suit
- Factory
- Increase in value of land
- Employee payroll taxes payable

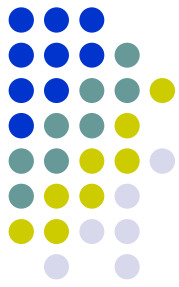
# Should we recognize the asset?



## Assets arise from transactions and events

- A firm issues a \$12m check to an insurance company for liability insurance over the next year.
- A firm issues a check for \$500K as a deposit on a custom-built machine.
- A firm buys stock in another firm for \$325K
- A firm acquires chemicals to be used as raw materials for \$800K.

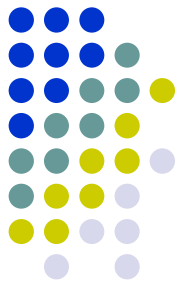
# Should we recognize the asset?



## Assets arise from transactions and events

- A well-known scientist is hired to manage the R&D function for 480K a year. Employment starts next month.
- The firm receives an order for \$15K in products.
- The firm writes a check for \$1M to obtain an option to purchase a tract of land.
- A firm receives notice from a supplier that it has shipped raw materials of \$200K. The firm has title to the goods while in transit.
- The firm purchases a patent from its creator for \$1.2M

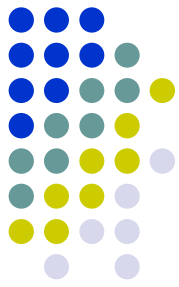
# Should we recognize the liability?



Liabilities arise from transactions and events

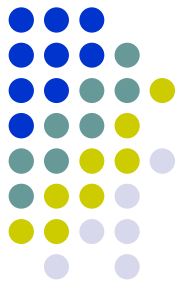
- The firm owes its attorneys \$50K in legal expenses.
- The firm provides warranties on its products.
- The firm borrows \$60K from the bank for a 90-day period.

# Accounting Transactions



- What business transactions are recorded in the financial accounting system?
  - Exchange of assets and liabilities with other entities
  - As opposed to “executory” transactions
    - Supplier: I will supply 5,000 units six months from now.
    - Customer: I will pay when I receive the goods
    - Exchange of promises
- How do transactions affect the accounting equation?
  - The accounting identity is always maintained

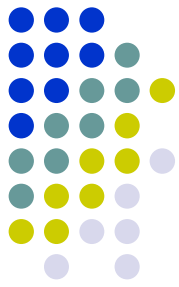




# Transactions and the Accounting Equation

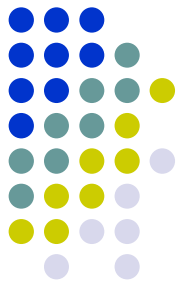
<b>Cash</b>	<b>+</b>	<b>A/R</b>	<b>+</b>	<b>Equip.</b>	<b>=</b>	<b>L/P</b>	<b>+</b>	<b>C. Cap.</b>	<b>+</b>	<b>R/E</b>
<hr/>										
+10,000								+10,000		





(2) The **company** borrows \$3,000 from a bank

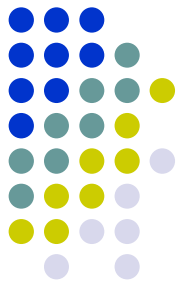
- Assets = Liabilities + Owners' Equity
- Cash                      Loans Payable
- +\$3,000                      +\$3,000



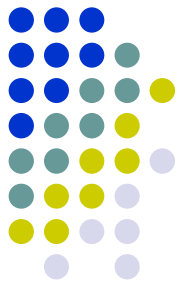
# Transactions and the Accounting Equation

<b>Cash</b>	<b>+</b>	<b>A/R</b>	<b>+</b>	<b>Equip.</b>	<b>=</b>	<b>L/P</b>	<b>+</b>	<b>C. Cap.</b>	<b>+</b>	<b>R/E</b>
+10,000								+10,000		
+ 3,000						+ 3,000				

### (3) Company purchases equipment for \$5,000 cash



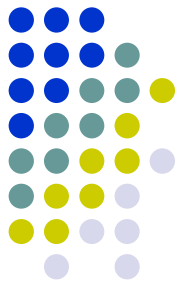
- Assets = L + OE
- Cash      Equipment
- -\$5,000    +\$5,000



# Transactions and the Accounting Equation

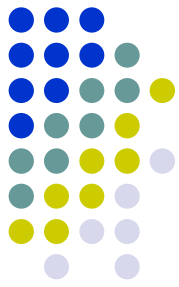
<b>Cash</b>	<b>+</b>	<b>A/R</b>	<b>+</b>	<b>Equip.</b>	<b>=</b>	<b>L/P</b>	<b>+</b>	<b>C. Cap.</b>	<b>+</b>	<b>R/E</b>
+10,000								+10,000		
+ 3,000						+ 3,000				
- 5,000				+ 5,000						

(4) Company performs service for \$12,000. The customer pays \$8,000 in cash and promises to pay the balance at a later date.



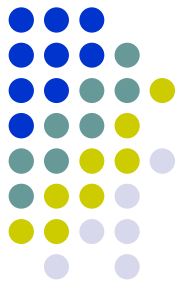
● Assets	=	L	+	Owners' Equity
● Cash		Receivables		Retained Earnings
● +\$8,000		+4,000		+\$12,000

# Transactions and the Accounting Equation



<b>Cash</b>	<b>+</b>	<b>A/R</b>	<b>+</b>	<b>Equip.</b>	<b>=</b>	<b>L/P</b>	<b>+</b>	<b>C. Cap.</b>	<b>+</b>	<b>R/E</b>
+10,000								+10,000		
+ 3,000						+ 3,000				
- 5,000				+ 5,000						
+ 8,000		+ 4,000								+12,000



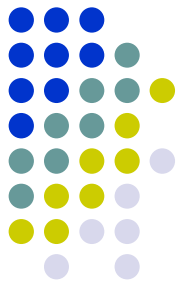


# Transactions and the Accounting Equation

<b>Cash</b>	<b>+</b>	<b>A/R</b>	<b>+</b>	<b>Equip.</b>	<b>=</b>	<b>L/P</b>	<b>+</b>	<b>C. Cap.</b>	<b>+</b>	<b>R/E</b>
+10,000								+10,000		
+ 3,000						+ 3,000				
- 5,000				+ 5,000						
+ 8,000		+ 4,000								+12,000
- 9,000										- 9,000

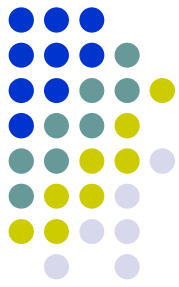






## Transactions and the Accounting Equation

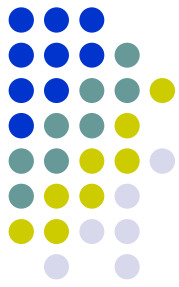
<b>Cash</b>	<b>+</b>	<b>A/R</b>	<b>+</b>	<b>Equip.</b>	<b>=</b>	<b>L/P</b>	<b>+</b>	<b>C. Cap.</b>	<b>+</b>	<b>R/E</b>
+10,000								+10,000		
+ 3,000						+ 3,000				
- 5,000				+ 5,000						
+ 8,000		+ 4,000								+12,000
- 9,000										- 9,000
- 1,000										- 1,000
<b>6,000</b>		<b>4,000</b>		<b>5,000</b>		<b>3,000</b>		<b>10,000</b>		<b>+ 2,000</b>



## Balance Sheet as at December 31, 1997

<b>Assets</b>	<b>Amount</b>	<b>Liabilities and Owners' Equity</b>	<b>Amount</b>
Cash	6,000	Loans Payable	3,000
Receivables	4,000	Contributed Capital	10,000
Equipment	5,000	Retained Earnings	2,000
	<hr/>		<hr/>
<b>Total Assests</b>	<b>\$15,000</b>	<b>Total Liabilities and Owners' Equity</b>	<b>\$15,000</b>
	<hr/>		<hr/>

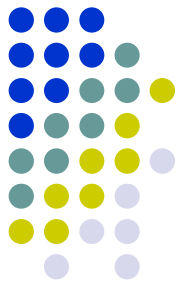
# Transactions and Accounting Equation



Cash	+ A/R	+ Equip.	= L/P	+ C. Cap.	+ R/E
<hr/>					
+10,000				+10,000	
+ 3,000			+ 3,000		
- 5,000		+ 5,000			
+ 8,000	+ 4,000				<b>+12,000</b>
- 9,000					<b>- 9,000</b>
- 1,000					<b>- 1,000</b>
<hr/>					
6,000	4,000	5,000	3,000	10,000	+ 2,000
<hr style="border: 2px solid black;"/>					

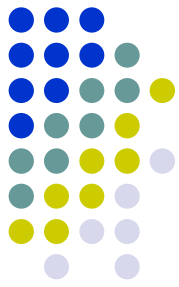
# Income Statement

For the year ended December 31, 1997

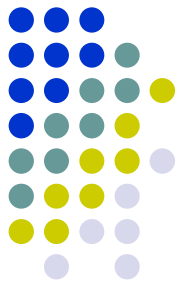


<b>Revenues: Fees earned for service</b>	<b>\$12,000</b>
<b>Expenses: Wages, interest, maintenance</b>	<b><u>\$ 9,000</u></b>
<b>Net income</b>	<b><u>\$ 3,000</u></b>

# Transactions and Accounting Equation



Cash	+	A/R	+	Equip.	=	L/P	+	C. Cap.	+	R/E
<del>+ 10,000</del>								+10,000		
+ 3,000						+ 3,000				
- 5,000				+ 5,000						
+ 8,000		+ 4,000								+12,000
- 9,000										- 9,000
- 1,000										- 1,000
6,000		4,000		5,000		3,000		10,000		+ 2,000



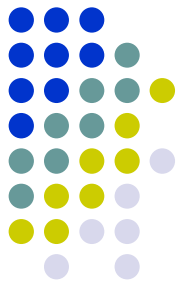
# Statement of Cash Flows

## For the year ended December 31, 1997

### [To be revisited later in the course]

Operating activities:		
Sale of a service (4)	8,000	
Payments for expenses (5)	<u>(9,000)</u>	
Net cash from operating activities		(1,000)
Investing activities:		
Purchase of equipment (3)	<u>(5,000)</u>	
Net cash from investing activities		(5,000)
Financing activities:		
Borrowings (2)	3,000	
Owner contributions (1)	10,000	
Payment of dividends (6)	<u>(1,000)</u>	12,000
Increase in cash balance		<u>6,000</u>
Cash balance at the beginning of the year		<u>0</u>
Cash balance at the end of the year		<u><u>6,000</u></u>

# Statement of Retained Earnings For the year ended December 31, 1997



<b>Beginning retained earnings balance</b>	<b>0</b>
<b>Plus: Net income</b>	<b>3,000</b>
<b>Less: Dividend to stockholder</b>	<b>1,000</b>
	<hr/>
<b>Ending retained earnings balance</b>	<b><u>\$ 2,000</u></b>





# Summary

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- **Balance sheet**

- Listing of

- Resources owned by a firm (assets or investments)
- Financing of the assets through obligations to external parties (liabilities)
- Financing of the investments through residual claimants (shareholders' equity)

- Preparing a balance sheet (and other financial statements) using transaction history



# Home work problem: Initial Balance Sheet

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## *Starting a Company*

- (1) Issues 50,000 shares of \$10 par value common stock at par value for cash.
- (2) Acquires land and building costing \$225,000 with the payment of \$50,000 cash and the assumption of a 20-year, 8-percent mortgage for the balance.
- (3) Purchases a used crane for \$13,200 cash
- (4) Acquires raw materials costing \$8,600 on account.



# Initial Balance Sheet

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## *Starting a Company*

- (5) Returns defective raw materials purchased in (4) and costing \$900 to the supplier. The account has not yet been paid.
- (6) Pays the supplier in (4) and (5) the amount due, less a 2-percent discount for prompt payment. The firm treats cash discount as a reduction in the acquisition cost of raw materials.
- (7) Obtains a fire insurance policy providing \$500,000 coverage beginning next month. It pays the 1-year premium of \$4,950.



# Initial Balance Sheet

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## *Starting a Company*

- (8) Issues a check for \$1,800 for 3 months rent in advance for office space.
- (9) Purchases a patent on a machine process for \$90,000 cash.
- (10) Purchases office equipment for \$2,700, making a down payment of \$250 and agreeing to pay the balance in 30 days.
- (11) Pays \$825 to Express Trucking Company for delivering the equipment purchased in (3).



# Recording of transactions

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$$\text{Cash} + \text{OCA} + \text{PP\&E} + \text{ONCA} = \text{CL} + \text{NCL} + \text{SE}$$

(1)

(2)

(3)

(4)

(5)

(6)

(7)

(8)

(9)

(10)

(11)