

2.96 - Management in Engineering, Fall 2004

Massachusetts Institute of Technology

Department of Mechanical Engineering

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# Financials

Lectures 4, 5 and 6

# Objectives

To develop an understanding of financial statements to serve as a basis for all analysis of business situations.

# Outline

- Financial Information
- Financial Statements
- Accounting Principles
- Ratio Analyses

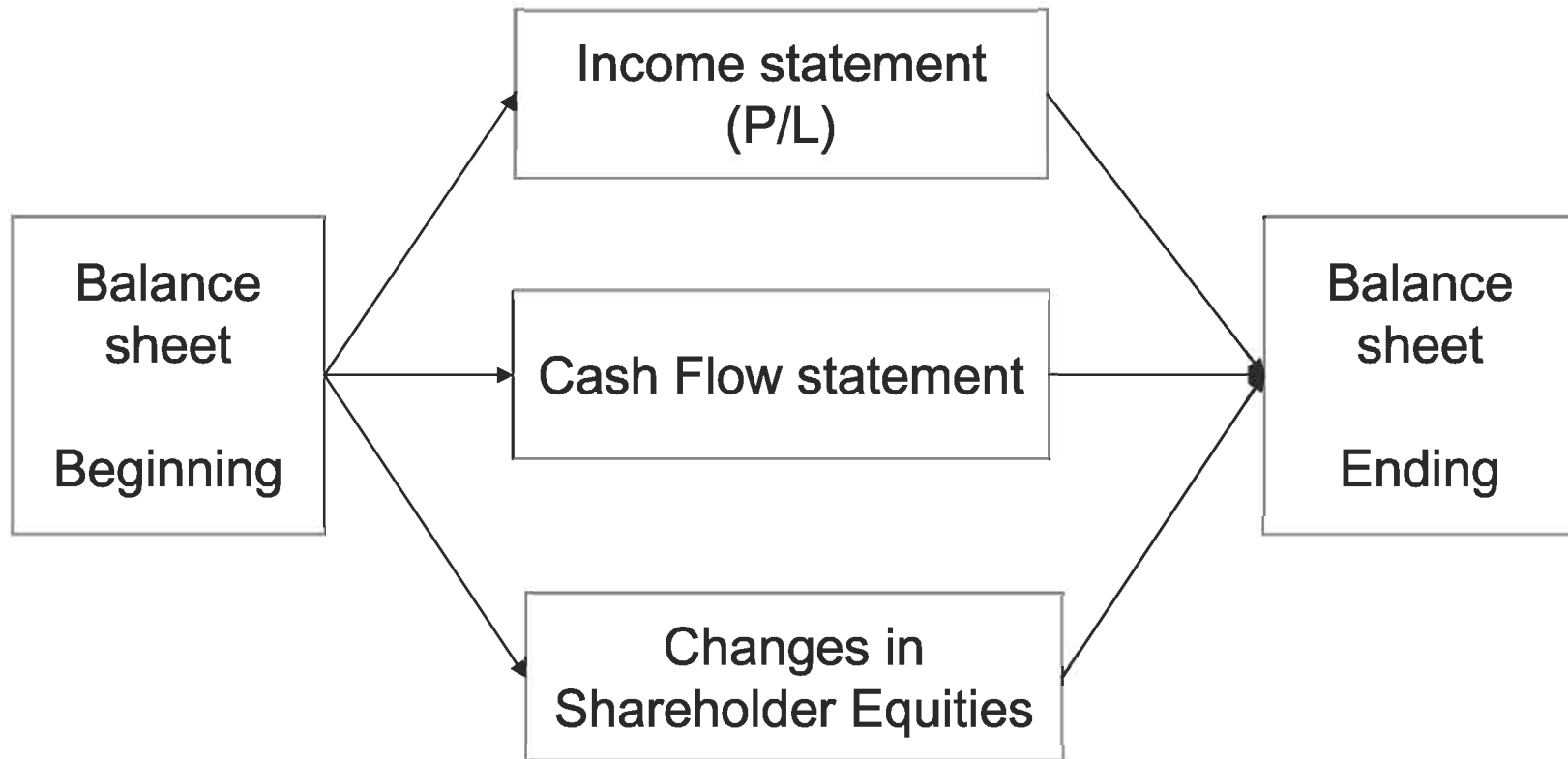
# **Need for Financial Information**

- Control
- Coordination
- Planning

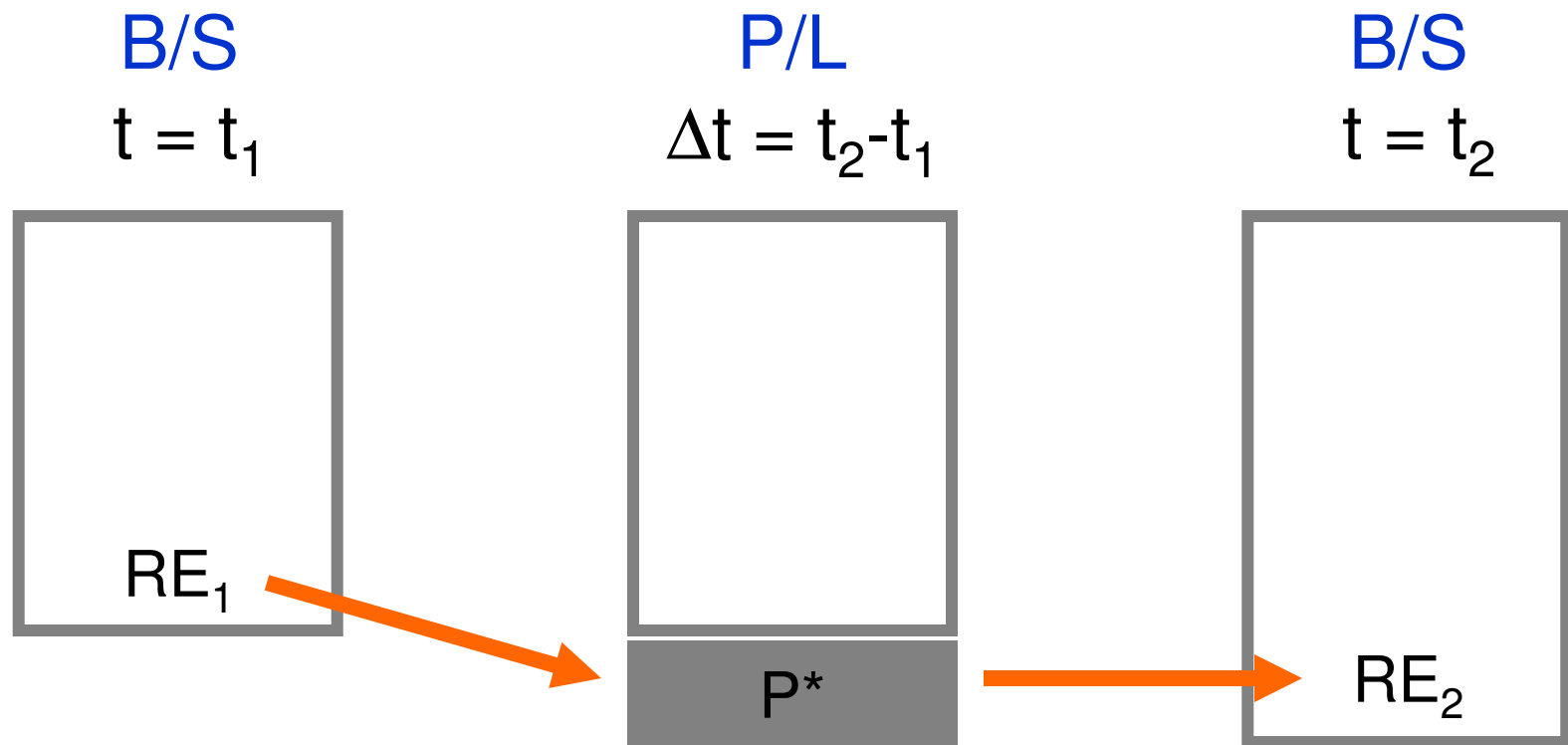
# Financial Information

- Financial Perspective
- Customer Perspective
- Internal Business Process Perspective
- Learning and Growth Perspective

# Financial statements

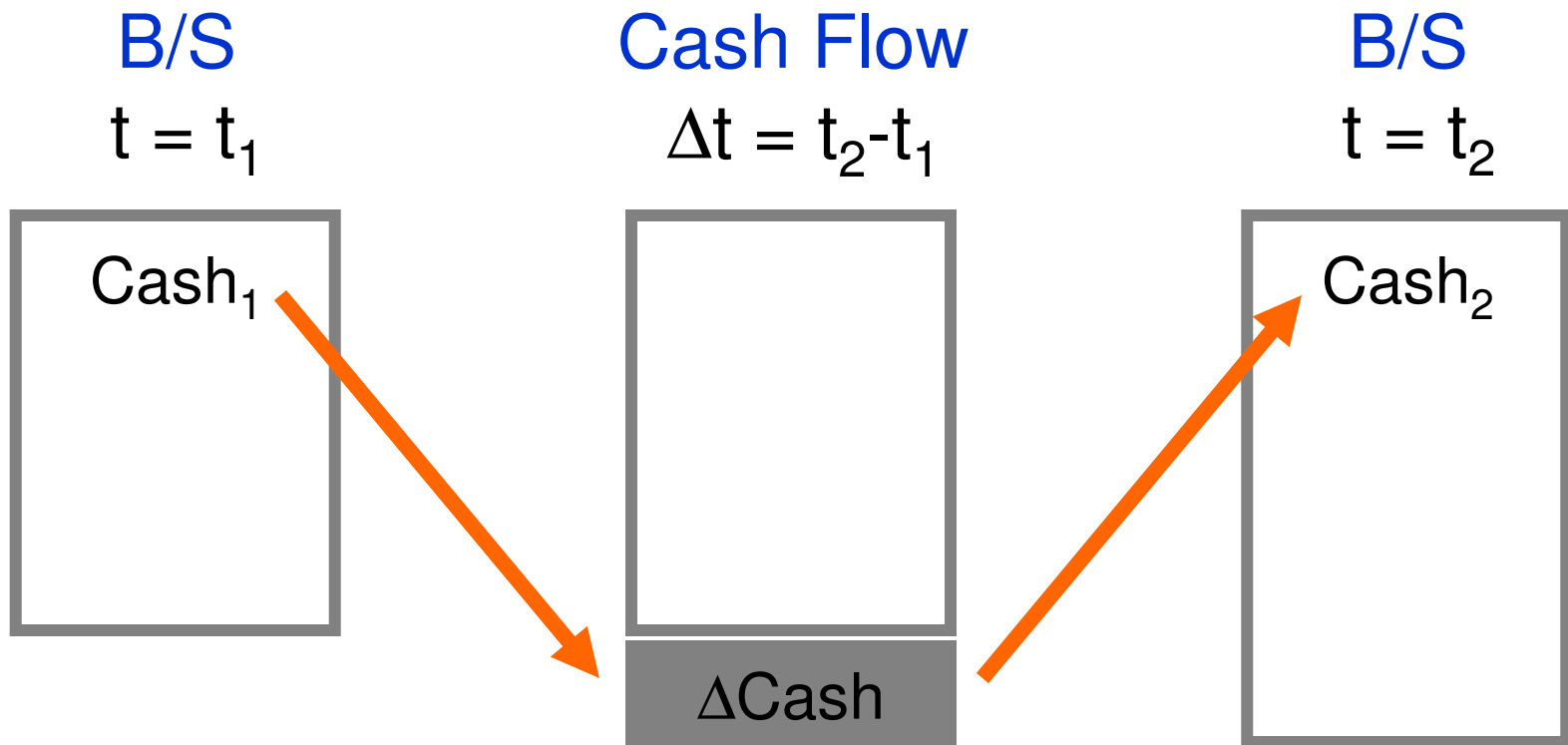


# Relationship of Financial Statements



$$RE_1 + P^* = RE_2$$

# Relationship of Financial Statements



$$Cash_1 + \Delta Cash = Cash_2$$



# Accounting

Luca Pacioli, 15<sup>th</sup> century monk

- Typical Accounting Period: 1 yr
- Double Entry Bookkeeping

# Accounting Principles

- Measurement unit: \$
- Double entry concept
- Cost (not value)
- Conservatism
- Going concern
- Period
- Realization
- Matching (Accrual)
- Consistency
- Materiality

# Bookkeeping

- The chart of accounts
- T-account

# The Chart of Accounts (multi-layered)

1000	Current Assets
1100	Cash
1110	Cash, Bank 1
1111	Cash, Bank 1, Account 1
5000	Property
5100	Land
5110	Land, Singapore

# T Account

Account

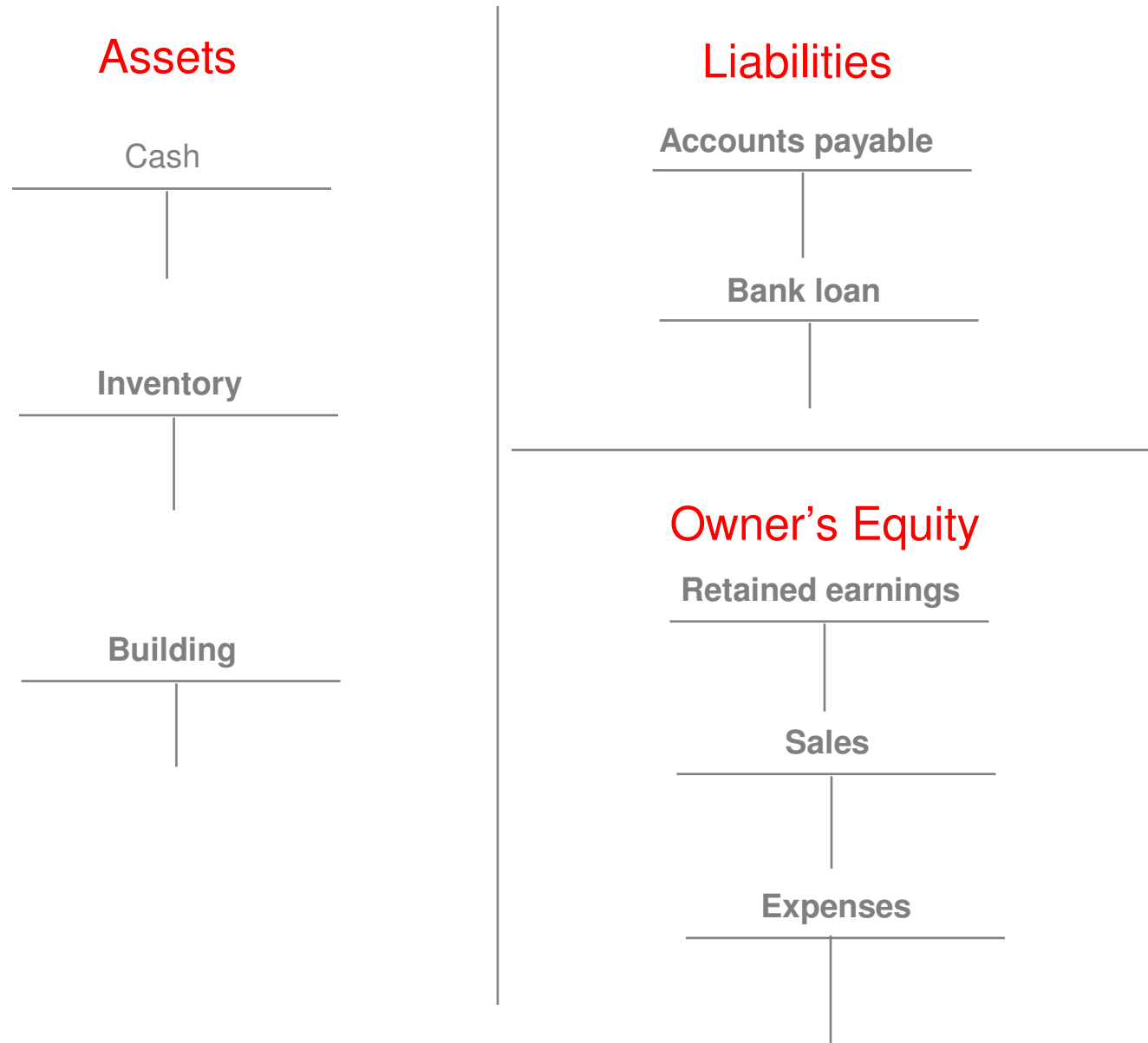
debit

+ / -

credit

- / +

# Business Account



# Debit & Credit

Assets = Liabilities + Equity

Cash	
(d)	(c)
+	-

A / P	
(d)	(c)
-	+

R / E	
(d)	(c)
-	+

Revenue	
(d)	(c)
	+

Expense	
(d)	(c)
+	



# Accounting Record Example

SMA 6307 - Business Fundamentals



## Starting Balance

King Shoe Store, Inc. Starting Balance 1-Jan-00		
	Accounts with Debit Balances	Accounts with Credit Balances
Cash (A)	30,000	
Account Receivable (A)	63,000	
Raw Materials Inventory (A)	10,000	
Work-in-Process Inventory (A)	10,000	
Merchandise Inventory (A)	175,000	
Land (A)	100,000	
Building and Equipment (A)	525,000	
Accumulated Depreciation (XA)		85,000
Accounts Payable (L)		135,000
Bonds Payable (L)		100,000
Common Stock (SE)		250,000
Additional Paid-in Capital (SE)		200,000
Retained Earnings (SE)		143,000
Total	913,000	913,000
(A) Asset (XA) Contra Account		
(L) Liability		
(SE) Shareholders' Equity		

## **Transactions - 1**

- (1) The firm purchases shoe-making equipment in cash costing \$10,000
  
- (2) The firm sells merchandise during the year 2000 at a total selling price of \$625,000. It receives \$225,000 immediately, with the remainder sold on account
  
- (3.1) The firm purchases raw materials costing \$25,000 on account
  
- (3.2) The firm issues raw materials costing \$20,000 to producing department
  
- (3.3) Shoes completed and transferred to the finished goods storeroom have a manufacturing cost of \$10,000
  
- (3.4) The cost of merchandise sold during the year 2000 is \$90,000
  
- (4) The firm pays salaries in cash of \$110,000 for employee services received during the year 2000
  
- (5) The firm collects cash of \$325,000 from customers who had purchased on account

## **Transactions - 2**

(6) The firm makes payments of \$70,000 to merchandise supplies for purchases on account

(7) The firm issues common stock of \$50,000 for cash on January 28, 2000.

(8) The firm pays a premium of \$1,500 on January 1, 2000 for a three-year property and liability insurance policy

(1) The firm purchases shoe-making equipment in cash costing \$10,000

Transaction Number	Accounts	Debit	Credit
1	Building and Equipment (A)	10,000	
	Cash (A)		10,000

Asset		=	Liabilities		+	Shareholders' Equity	
Cash (A)			Account Payable (L)			Retained Earnings (SE)	
Bal. 1/1	30,000		135,000	Bal. 1/1		123,000	Bal. 1/1
	10,000 (1)		135,000	Bal. 12/31		123,000	Bal. 12/31
Bal. 12/31	20,000						
Account Receivable (A)			Dividends Payable (L)			Sales Revenue (SE)	
Bal. 1/1	63,000			Bal. 1/1		-	Bal. 1/1
Bal. 12/31	63,000			Bal. 12/31		-	Bal. 12/31
Merchandise Inventory (A)						Cost of Goods Sold (SE)	
Bal. 1/1	175,000					Bal. 1/1	-
Bal. 12/31	175,000					Bal. 12/31	-
Prepaid Insurance (A)						Salary Expense (SE)	
Bal. 1/1	-					Bal. 1/1	-
Bal. 12/31	-					Bal. 12/31	-
Building and Equipment (A)							
Bal. 1/1	525,000						
(1)	10,000						
Bal. 12/31	535,000						

(2) The firm sells merchandise during the year 2000 at a total selling price of \$625,000. It receives \$225,000 immediately, with the remainder sold on account

Transaction Number	Accounts	Debit	Credit
2	Cash (A)	225,000	
	Account Receivable (A)	400,000	
	Sales Revenue (SE)		625,000

Asset		=	Liabilities		+	Shareholders' Equity	
Cash (A)			Account Payable (L)			Retained Earnings (SE)	
Bal. 1/1	30,000		135,000	Bal. 1/1		123,000	Bal. 1/1
(2)	225,000						
	10,000	(1)	135,000	Bal. 12/31		123,000	Bal. 12/31
Bal. 12/31	245,000						
Account Receivable (A)						Sales Revenue (SE)	
Bal. 1/1	63,000					-	Bal. 1/1
(2)	400,000					625,000	(2)
Bal. 12/31	463,000					625,000	Bal. 12/31
Merchandise Inventory (A)						Cost of Goods Sold (SE)	
Bal. 1/1	175,000					-	
Bal. 12/31	175,000					-	
Prepaid Insurance (A)						Salary Expense (SE)	
Bal. 1/1	-					-	
Bal. 12/31	-					-	
Building and Equipment (A)							
Bal. 1/1	525,000						
(1)	10,000						
Bal. 12/31	535,000						

(3.1) The firm purchases raw materials costing \$25,000 on account

Transaction Number	Accounts	Debit	Credit
3.1	Raw Materials Inventory (A)	25,000	
	Accounts Payable (L)		25,000

Asset		=	Liabilities		+	Shareholders' Equity	
Cash (A)			Account Payable (L)			Common Stock (SE)	
Bal. 1/1	30,000		135,000	Bal. 1/1		250,000	Bal. 1/1
(2)	225,000		25,000	(3.1)			
	10,000	(1)	160,000	Bal. 12/31		250,000	Bal. 12/31
Bal. 12/31	<u>245,000</u>						
Account Receivable (A)						Retained Earnings (SE)	
Bal. 1/1	63,000					123,000	Bal. 1/1
(2)	400,000						
Bal. 12/31	<u>463,000</u>					123,000	Bal. 12/31
Merchandise Inventory (A)						Sales Revenue (SE)	
Bal. 1/1	175,000					-	Bal. 1/1
Bal. 12/31	<u>175,000</u>					625,000	(2)
Building and Equipment (A)						625,000	Bal. 12/31
Bal. 1/1	525,000					Cost of Goods Sold (SE)	
(1)	10,000					Bal. 1/1	-
Bal. 12/31	<u>535,000</u>					Bal. 12/31	<u>-</u>
Raw Materials Inventory (A)						Salary Expense (SE)	
Bal. 1/1	10,000					Bal. 1/1	-
(3.1)	25,000					Bal. 12/31	<u>-</u>
Bal. 12/31	<u>35,000</u>						

(3.2) The firm issues raw materials costing \$20,000 to producing department

Transaction Number	Accounts	Debit	Credit
3.2	Work-in-Process Inventory (A)	20,000	
	Raw Materials Inventory (A)		20,000

Asset		=	Liabilities		+	Shareholders' Equity	
<b>Cash (A)</b>			<b>Account Payable (L)</b>			<b>Common Stock (SE)</b>	
Bal. 1/1	30,000		135,000	Bal. 1/1		250,000	Bal. 1/1
(2)	225,000	10,000 (1)	25,000	(3.1)			
			<u>160,000</u>	Bal. 12/31		<u>250,000</u>	Bal. 12/31
Bal. 12/31	<u>245,000</u>						
<b>Account Receivable (A)</b>						<b>Retained Earnings (SE)</b>	
Bal. 1/1	63,000					123,000	Bal. 1/1
(2)	400,000						
Bal. 12/31	<u>463,000</u>					<u>123,000</u>	Bal. 12/31
<b>Merchandise Inventory (A)</b>						<b>Sales Revenue (SE)</b>	
Bal. 1/1	175,000					-	Bal. 1/1
Bal. 12/31	<u>175,000</u>					625,000	(2)
						<u>625,000</u>	Bal. 12/31
<b>Building and Equipment (A)</b>						<b>Cost of Goods Sold (SE)</b>	
Bal. 1/1	525,000				Bal. 1/1	-	
(1)	10,000				Bal. 12/31	<u>-</u>	
Bal. 12/31	<u>535,000</u>						
<b>Raw Materials Inventory (A)</b>						<b>Salary Expense (SE)</b>	
Bal. 1/1	10,000				Bal. 1/1	-	
(3.1)	25,000	20,000 (3.2)			Bal. 12/31	<u>-</u>	
Bal. 12/31	<u>15,000</u>						
<b>Work-in-Process Inventory (A)</b>							
Bal. 1/1	10,000						
(3.2)	20,000						
Bal. 12/31	<u>30,000</u>						

(3.3) Shoes completed and transferred to the finished goods storeroom have a manufacturing cost of \$10,000

Transaction Number	Accounts	Debit	Credit
3.3	Merchandise Inventory (A)	10,000	
	Work-in-Process Inventory (A)		10,000

Asset		=	Liabilities		+	Shareholders' Equity	
Cash (A)			Account Payable (L)			Common Stock (SE)	
Bal. 1/1	30,000		135,000	Bal. 1/1		250,000	Bal. 1/1
(2)	225,000	10,000 (1)	25,000	(3.1)			
			<u>160,000</u>	Bal. 12/31		<u>250,000</u>	Bal. 12/31
Bal. 12/31	<u>245,000</u>						
Account Receivable (A)						Retained Earnings (SE)	
Bal. 1/1	63,000					123,000	Bal. 1/1
(2)	400,000					<u>123,000</u>	Bal. 12/31
Bal. 12/31	<u>463,000</u>						
Merchandise Inventory (A)						Sales Revenue (SE)	
Bal. 1/1	175,000					-	Bal. 1/1
(3.3)	10,000					625,000	(2)
Bal. 12/31	<u>185,000</u>					<u>625,000</u>	Bal. 12/31
Building and Equipment (A)						Cost of Goods Sold (SE)	
Bal. 1/1	525,000				Bal. 1/1	-	
(1)	10,000				Bal. 12/31	<u>-</u>	
Bal. 12/31	<u>535,000</u>						
Raw Materials Inventory (A)						Salary Expense (SE)	
Bal. 1/1	10,000				Bal. 1/1	-	
(3.1)	25,000	20,000 (3.2)			Bal. 12/31	<u>-</u>	
Bal. 12/31	<u>15,000</u>						
Work-in-Process Inventory (A)							
Bal. 1/1	10,000						
(3.2)	20,000	10,000 (3.3)					
Bal. 12/31	<u>20,000</u>						



(3.4) The cost of merchandise sold during the year 2000 is \$90,000

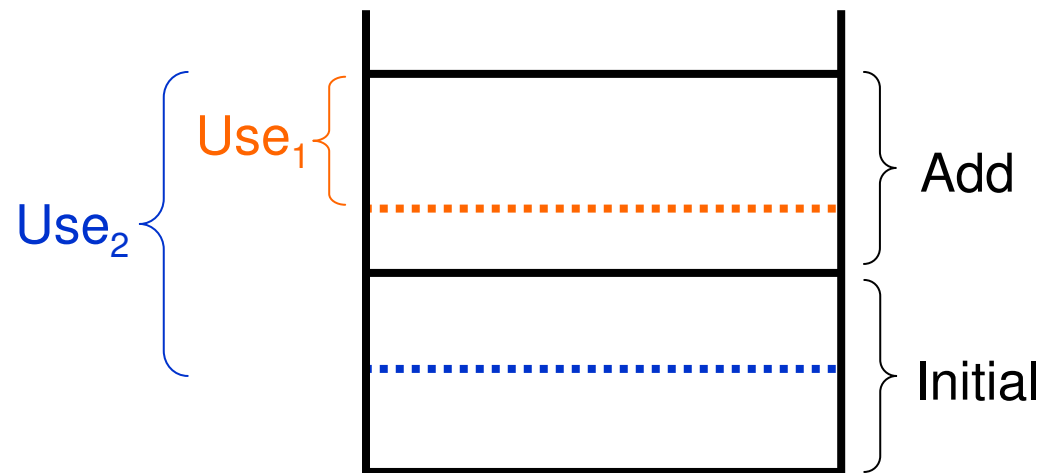
Transaction Number	Accounts	Debit	Credit
3.4	Cost of Goods Sold (SE)	90,000	
	Merchandise Inventory (A)		90,000

Asset		=	Liabilities		+	Shareholders' Equity	
<b>Cash (A)</b>			<b>Account Payable (L)</b>			<b>Common Stock (SE)</b>	
Bal. 1/1	30,000		135,000	Bal. 1/1		250,000	Bal. 1/1
(2)	225,000		25,000	(3.1)			
			10,000	(1)		250,000	Bal. 12/31
Bal. 12/31	<u>245,000</u>						
<b>Account Receivable (A)</b>						<b>Retained Earnings (SE)</b>	
Bal. 1/1	63,000					123,000	Bal. 1/1
(2)	400,000						
Bal. 12/31	<u>463,000</u>					<u>123,000</u>	Bal. 12/31
<b>Merchandise Inventory (A)</b>						<b>Sales Revenue (SE)</b>	
Bal. 1/1	175,000					-	Bal. 1/1
(3.3)	10,000	90,000	(3.4)			625,000	(2)
Bal. 12/31	<u>95,000</u>					<u>625,000</u>	Bal. 12/31
<b>Building and Equipment (A)</b>						<b>Cost of Goods Sold (SE)</b>	
Bal. 1/1	525,000					Bal. 1/1	-
(1)	10,000					(3.4)	<u>90,000</u>
Bal. 12/31	<u>535,000</u>					Bal. 12/31	<u>90,000</u>
<b>Raw Materials Inventory (A)</b>						<b>Salary Expense (SE)</b>	
Bal. 1/1	10,000					Bal. 1/1	-
(3.1)	25,000	20,000	(3.2)			Bal. 12/31	<u>-</u>
Bal. 12/31	<u>15,000</u>						
<b>Work-in-Process Inventory (A)</b>							
Bal. 1/1	10,000						
(3.2)	20,000	10,000	(3.3)				
Bal. 12/31	<u>20,000</u>						

# Inventory

## 1. Periodic



## 2. Perpetual

- Individual Record (RFID)

# Manufacturing Inventories

## 1. Raw Materials

- Purchase
- Freight-in

## 2. Work-in-Progress (WIP)

- Direct / Indirect Labor
- Supplies, etc.

## 3. Finished Goods

(4) The firm pays salaries in cash of \$110,000 for employee services received during the year 2000

Transaction Number	Accounts	Debit	Credit
4	Salary Expense (SE)	110,000	
	Cash (A)		110,000

Asset		=	Liabilities		+	Shareholders' Equity	
Cash (A)			Account Payable (L)			Common Stock (SE)	
Bal. 1/1	30,000		135,000	Bal. 1/1		250,000	Bal. 1/1
(2)	225,000		25,000	(3.1)			
			110,000	(4)		250,000	Bal. 12/31
Bal. 12/31	<u>135,000</u>		<u>160,000</u>	Bal. 12/31			
Account Receivable (A)			Retained Earnings (SE)				
Bal. 1/1	63,000					123,000	Bal. 1/1
(2)	400,000					<u>123,000</u>	Bal. 12/31
Bal. 12/31	<u>463,000</u>						
Merchandise Inventory (A)			Sales Revenue (SE)				
Bal. 1/1	175,000					-	Bal. 1/1
(3.3)	10,000	90,000		(2)		625,000	
Bal. 12/31	<u>95,000</u>					<u>625,000</u>	Bal. 12/31
Building and Equipment (A)			Cost of Goods Sold (SE)				
Bal. 1/1	525,000					-	
(1)	10,000			(3.4)	90,000		
Bal. 12/31	<u>535,000</u>			Bal. 12/31	<u>90,000</u>		
Raw Materials Inventory (A)			Salary Expense (SE)				
Bal. 1/1	10,000					-	
(3.1)	25,000	20,000		(4)	110,000		
Bal. 12/31	<u>15,000</u>			Bal. 12/31	<u>110,000</u>		
Work-in-Process Inventory (A)							
Bal. 1/1	10,000						
(3.2)	20,000	10,000		(3.3)			
Bal. 12/31	<u>20,000</u>						

(5) The firm collects cash of \$325,000 from customers who had purchased on account

Transaction Number	Accounts	Debit	Credit
5	Cash (A)	325,000	
	Account Receivable (A)		325,000

Asset		=	Liabilities		+	Shareholders' Equity	
Cash (A)			Account Payable (L)			Common Stock (SE)	
Bal. 1/1	30,000		135,000	Bal. 1/1		250,000	Bal. 1/1
(2)	225,000	← 10,000 (1)	25,000	(3.1)			
(5)	325,000	110,000 (4)	160,000	Bal. 12/31		250,000	Bal. 12/31
Bal. 12/31	460,000						
Account Receivable (A)			Sales Revenue (SE)			Retained Earnings (SE)	
Bal. 1/1	63,000					123,000	Bal. 1/1
(2)	400,000	325,000 (5)				123,000	Bal. 12/31
Bal. 12/31	138,000						
Merchandise Inventory (A)			Cost of Goods Sold (SE)			Salary Expense (SE)	
Bal. 1/1	175,000						
(3.3)	10,000	90,000 (3.4)					
Bal. 12/31	95,000						
Building and Equipment (A)			Raw Materials Inventory (A)			Work-in-Process Inventory (A)	
Bal. 1/1	525,000						
(1)	10,000						
Bal. 12/31	535,000						
Raw Materials Inventory (A)			Work-in-Process Inventory (A)			Raw Materials Inventory (A)	
Bal. 1/1	10,000						
(3.1)	25,000	20,000 (3.2)					
Bal. 12/31	15,000						
Work-in-Process Inventory (A)			Work-in-Process Inventory (A)			Work-in-Process Inventory (A)	
Bal. 1/1	10,000						
(3.2)	20,000	10,000 (3.3)					
Bal. 12/31	20,000						

(6) The firm makes payments of \$70,000 to merchandise supplies for purchases on account

Transaction Number	Accounts	Debit	Credit
6	Account Payable (L)	70,000	
	Cash (A)		70,000

Asset		=	Liabilities		+	Shareholders' Equity	
Cash (A)			Account Payable (L)			Common Stock (SE)	
Bal. 1/1	30,000			135,000	Bal. 1/1	250,000	Bal. 1/1
(2)	225,000	10,000	(1)	25,000	(3.1)		
(5)	325,000	110,000	(4)	90,000		250,000	Bal. 12/31
		70,000	(6)				
Bal. 12/31	<u>390,000</u>						
Account Receivable (A)						Retained Earnings (SE)	
Bal. 1/1	63,000					123,000	Bal. 1/1
(2)	400,000	325,000	(5)				
Bal. 12/31	<u>138,000</u>					<u>123,000</u>	Bal. 12/31
Merchandise Inventory (A)						Sales Revenue (SE)	
Bal. 1/1	175,000					-	Bal. 1/1
(3.3)	10,000	90,000	(3.4)			625,000	(2)
Bal. 12/31	<u>95,000</u>					<u>625,000</u>	Bal. 12/31
Building and Equipment (A)						Cost of Goods Sold (SE)	
Bal. 1/1	525,000					Bal. 1/1	-
(1)	10,000					(3.4)	90,000
Bal. 12/31	<u>535,000</u>					Bal. 12/31	<u>90,000</u>
Raw Materials Inventory (A)						Salary Expense (SE)	
Bal. 1/1	10,000					Bal. 1/1	-
(3.1)	25,000	20,000	(3.2)			(4)	110,000
Bal. 12/31	<u>15,000</u>					Bal. 12/31	<u>110,000</u>
Work-in-Process Inventory (A)							
Bal. 1/1	10,000						
(3.2)	20,000	10,000	(3.3)				
Bal. 12/31	<u>20,000</u>						

(7) The firm issues common stock of \$50,000 for cash on January 28, 2000.

Transaction Number	Accounts	Debit	Credit
7	Cash (A)	50,000	

Asset		=	Liabilities		+	Shareholders' Equity	
Cash (A)			Account Payable (L)			Common Stock (SE)	
Bal. 1/1	30,000			135,000	Bal. 1/1	250,000	Bal. 1/1
(2)	225,000		10,000	25,000	(3.1)	50,000	(7)
(5)	325,000		110,000	90,000	Bal. 12/31	300,000	Bal. 12/31
(7)	50,000		70,000				
Bal. 12/31	440,000						
Account Receivable (A)						Retained Earnings (SE)	
Bal. 1/1	63,000					123,000	Bal. 1/1
(2)	400,000		325,000		(5)	123,000	Bal. 12/31
Bal. 12/31	138,000						
Merchandise Inventory (A)						Sales Revenue (SE)	
Bal. 1/1	175,000					-	Bal. 1/1
(3.3)	10,000		90,000		(3.4)	625,000	(2)
Bal. 12/31	95,000					625,000	Bal. 12/31
Building and Equipment (A)						Cost of Goods Sold (SE)	
Bal. 1/1	525,000					-	Bal. 1/1
(1)	10,000					90,000	(3.4)
Bal. 12/31	535,000					90,000	Bal. 12/31
Raw Materials Inventory (A)						Salary Expense (SE)	
Bal. 1/1	10,000					-	Bal. 1/1
(3.1)	25,000		20,000		(3.2)	110,000	(4)
Bal. 12/31	15,000					110,000	Bal. 12/31
Work-in-Process Inventory (A)							
Bal. 1/1	10,000						
(3.2)	20,000		10,000		(3.3)		
Bal. 12/31	20,000						

(8) The firm pays a premium of \$1,500 on January 1, 2000 for a three-year property and liability insurance policy

Transaction Number	Accounts	Debit	Credit
8	Prepaid Insurance (A)	1,500	
	Cash (A)		1,500

Asset		=	Liabilities		+	Shareholders' Equity	
Cash (A)			Account Payable (L)			Common Stock (SE)	
Bal. 1/1	30,000			135,000	Bal. 1/1	250,000	Bal. 1/1
(2)	225,000	10,000	(1)		(3.1)	50,000	(7)
(5)	325,000	110,000	(4)	70,000		300,000	Bal. 12/31
(7)	50,000	70,000	(6)	90,000	Bal. 12/31		
	1,500		(8)				
Bal. 12/31	438,500						
Account Receivable (A)						Retained Earnings (SE)	
Bal. 1/1	63,000					123,000	Bal. 1/1
(2)	400,000	325,000	(5)			123,000	Bal. 12/31
Bal. 12/31	138,000						
Merchandise Inventory (A)						Sales Revenue (SE)	
Bal. 1/1	175,000					-	Bal. 1/1
(3.3)	10,000	90,000	(3.4)			625,000	(2)
Bal. 12/31	95,000					625,000	Bal. 12/31
Building and Equipment (A)						Cost of Goods Sold (SE)	
Bal. 1/1	525,000				Bal. 1/1	-	
(1)	10,000				(3.4)	90,000	
Bal. 12/31	535,000				Bal. 12/31	90,000	
Raw Materials Inventory (A)						Salary Expense (SE)	
Bal. 1/1	10,000				Bal. 1/1	-	
(3.1)	25,000	20,000	(3.2)		(4)	110,000	
Bal. 12/31	15,000				Bal. 12/31	110,000	
Work-in-Process Inventory (A)						Prepaid Insurance (A)	
Bal. 1/1	10,000				Bal. 1/1	-	
(3.2)	20,000	10,000	(3.3)		(8)	1,500	
Bal. 12/31	20,000				Bal. 12/31	1,500	



# Summary

Asset	=	Liabilities	+	Shareholders' Equity
Cash (A)		Account Payable (L)		Common Stock (SE)
Bal. 1/1      30,000		135,000 Bal. 1/1		250,000 Bal. 1/1
(2)      225,000      10,000 (1)		25,000 (3.1)		50,000 (7)
(5)      325,000      110,000 (4)		<u>90,000</u> Bal. 12/31		<u>300,000</u> Bal. 12/31
(7)      50,000      70,000 (6)				
		Bonds Payable (L)		Retained Earnings (SE)
Bal. 12/31 <u>438,500</u>		100,000 Bal. 1/1		123,000 Bal. 1/1
		<u>100,000</u> Bal. 12/31		<u>123,000</u> Bal. 12/31
Account Receivable (A)				Sales Revenue (SE)
Bal. 1/1      63,000				- Bal. 1/1
(2)      400,000      325,000 (5)				625,000 (2)
Bal. 12/31 <u>138,000</u>				<u>625,000</u> Bal. 12/31
Merchandise Inventory (A)				Cost of Goods Sold (SE)
Bal. 1/1      175,000				Bal. 1/1      -
(3.3)      10,000      90,000 (3.4)				(3.4)      90,000
Bal. 12/31 <u>95,000</u>				<u>90,000</u>
Building and Equipment (A)				Salary Expense (SE)
Bal. 1/1      525,000				Bal. 1/1      -
(1)      10,000				(4)      110,000
Bal. 12/31 <u>535,000</u>				<u>110,000</u>
Raw Materials Inventory (A)				
Bal. 1/1      10,000				
(3.1)      25,000      20,000 (3.2)				
Bal. 12/31 <u>15,000</u>				
Work-in-Process Inventory (A)				
Bal. 1/1      10,000				
(3.2)      20,000      10,000 (3.3)				
Bal. 12/31 <u>20,000</u>				
Accumulated Depreciation (XA)				
		85,000 Bal. 1/1		
		<u>85,000</u> Bal. 12/31		
Prepaid Insurance (A)				
Bal. 1/1      -				
(8)      1,500				
Bal. 12/31 <u>1,500</u>				

## Unadjusted Balance

**King 鞋 Store, Inc.**  
Unadjusted Balance  
31-Dec-00

	Accounts with Debit Balances	Accounts with Credit Balances
Cash (A)	438,500	
Account Receivable (A)	138,000	
Raw Materials Inventory (A)	15,000	
Work-in-Process Inventory (A)	20,000	
Merchandise Inventory (A)	95,000	
Prepaid Insurance (A)	1,500	
Land (A)	100,000	
Building and Equipment (A)	535,000	
Accumulated Depreciation (XA)		85,000
Accounts Payable (L)		90,000
Bonds Payable (L)		100,000
Common Stock (SE)		300,000
Additional Paid-in Capital (SE)		200,000
Retained Earnings (SE)		143,000
Sales Revenue (SE)		625,000
Cost of Goods Sold (SE)	90,000	
Salary Expense (SE)	110,000	
Total	<u>1,543,000</u>	<u>1,543,000</u>

(A) Asset (XA) Contra Account

(L) Liability

(SE) Shareholders' Equity

## Adjusting Entries

- Adjusting the events that continually occur for which no specific transaction signals the requirement for a journal entry but that still affect the net income for the period and the financial position at the end of the period
- Adjusting entries prepared at the end of the accounting period change the balances in the general ledger accounts so that all revenues and expenses are recognized
- For example,
  - Recognition of accrued revenues and receivables
  - Recognition of accrued expenses and payables
  - Allocation of prepaid operating costs, e.g. prepaid insurance cost
  - Recognition of Depreciation
  - Correction of errors, etc.

### (1) Allocation of prepaid insurance cost

- King's Shoe Store paid \$1,500 on January 1, 2000, for a three-year insurance policy - Transaction #8
- During the year 2000, one-third of the coverage expired, so \$500 of the premium should leave the asset account on the balance sheet and become an insurance expense, reducing income and retained earnings.
- In other words, the balance sheet on December 31, 2000, should show only \$1,000 of prepaid insurance as an asset.

Transaction Number	Accounts	Debit	Credit
9	Insurance Expense (SE)	500	
	Prepaid Insurance (A)		500

Transaction Number	Accounts		Debit	Credit		
9	Insurance Expense (SE)		500			
		Prepaid Insurance (A)		500		
<b>Asset</b>		=	<b>Liabilities</b>	+	<b>Shareholders' Equity</b>	
<u>Cash (A)</u>			<u>Account Payable (L)</u>		<u>Common Stock (SE)</u>	
Bal. 1/1	30,000		135,000	Bal. 1/1	250,000	Bal. 1/1
(2)	225,000	10,000 (1)	25,000	(3.1)	50,000	(7)
(5)	325,000	110,000 (4)	<u>90,000</u>	Bal. 12/31	<u>300,000</u>	Bal. 12/31
(7)	50,000	70,000 (6)				
		1,500 (8)				
Bal. 12/31	<u>438,500</u>					
<u>Account Receivable (A)</u>			<u>Bonds Payable (L)</u>		<u>Retained Earnings (SE)</u>	
Bal. 1/1	63,000		100,000	Bal. 1/1	123,000	Bal. 1/1
(2)	400,000	325,000 (5)	<u>100,000</u>	Bal. 12/31	<u>123,000</u>	Bal. 12/31
Bal. 12/31	<u>138,000</u>					
<u>Merchandise Inventory (A)</u>					<u>Sales Revenue (SE)</u>	
Bal. 1/1	175,000				-	Bal. 1/1
(3.3)	10,000	90,000 (3.4)			625,000	(2)
Bal. 12/31	<u>95,000</u>				<u>625,000</u>	Bal. 12/31
<u>Building and Equipment (A)</u>					<u>Cost of Goods Sold (SE)</u>	
Bal. 1/1	525,000			Bal. 1/1	-	
(1)	10,000			(3.4)	90,000	
Bal. 12/31	<u>535,000</u>			Bal. 12/31	<u>90,000</u>	
<u>Raw Materials Inventory (A)</u>					<u>Salary Expense (SE)</u>	
Bal. 1/1	10,000			Bal. 1/1	-	
(3.1)	25,000	20,000 (3.2)		(4)	110,000	
Bal. 12/31	<u>15,000</u>			Bal. 12/31	<u>110,000</u>	
<u>Work-in-Process Inventory (A)</u>					<u>Insurance Expense (SE)</u>	
Bal. 1/1	10,000			Bal. 1/1	-	
(3.2)	20,000	10,000 (3.3)		(9)	500	
Bal. 12/31	<u>20,000</u>			Bal. 12/31	500	
<u>Accumulated Depreciation (XA)</u>						
		85,000	Bal. 1/1			
		<u>85,000</u>	Bal. 12/31			
<u>Prepaid Insurance (A)</u>						
Bal. 1/1	-					
(8)	1,500	500 (9)				
Bal. 12/31	<u>1,000</u>					

## (2) Recognition of Depreciation

- Although the assets of buildings and equipment provide services for a number of years, their future benefits expire as time passes. Therefore, accounting spreads an asset's cost over the periods of the assets' estimated useful life.
- The term *depreciation* refers to the charge made to the current operations for the portion of the cost of such assets consumed during the current period. The *straight-line method* is widely used for depreciation calculations
- King's Shoe Store's internal records show that annual depreciation is \$30,000 per year.

Transaction Number	Accounts	Debit	Credit
10	Depreciation Expense (SE)	30,000	
	Accumulated Depreciation (XA)		30,000

Transaction Number	Accounts	Debit	Credit
10	Depreciation Expense (SE)	30,000	
	Accumulated Depreciation (XA)		30,000
<b>Asset</b>		=	<b>Liabilities</b>
			+ <b>Shareholders' Equity</b>
<b>Cash (A)</b>			<b>Common Stock (SE)</b>
Bal. 1/1	30,000		250,000 Bal. 1/1
(2)	225,000	10,000 (1)	50,000 (7)
(5)	325,000	110,000 (4)	<u>300,000</u> Bal. 12/31
(7)	50,000	70,000 (6)	
		1,500 (8)	
Bal. 12/31	<u>438,500</u>		
<b>Account Receivable (A)</b>			<b>Retained Earnings (SE)</b>
Bal. 1/1	63,000		123,000 Bal. 1/1
(2)	400,000	325,000 (5)	
Bal. 12/31	<u>138,000</u>		<u>123,000</u> Bal. 12/31
<b>Merchandise Inventory (A)</b>			<b>Sales Revenue (SE)</b>
Bal. 1/1	175,000		- Bal. 1/1
(3.3)	10,000	90,000 (3.4)	625,000 (2)
Bal. 12/31	<u>95,000</u>		<u>625,000</u> Bal. 12/31
<b>Building and Equipment (A)</b>			<b>Cost of Goods Sold (SE)</b>
Bal. 1/1	525,000		Bal. 1/1 -
(1)	10,000		(3.4) 90,000
Bal. 12/31	<u>535,000</u>		Bal. 12/31 <u>90,000</u>
<b>Raw Materials Inventory (A)</b>			<b>Salary Expense (SE)</b>
Bal. 1/1	10,000		Bal. 1/1 -
(3.1)	25,000	20,000 (3.2)	(4) 110,000
Bal. 12/31	<u>15,000</u>		Bal. 12/31 <u>110,000</u>
<b>Work-in-Process Inventory (A)</b>			<b>Insurance Expense (SE)</b>
Bal. 1/1	10,000		Bal. 1/1 -
(3.2)	20,000	10,000 (3.3)	(9) 500
Bal. 12/31	<u>20,000</u>		Bal. 12/31 <u>500</u>
<b>Accumulated Depreciation (XA)</b>			<b>Depreciation Expense (SE)</b>
	85,000 Bal. 1/1		Bal. 1/1 -
	<u>30,000</u> (10)		(10) <u>30,000</u>
	115,000 Bal. 12/31		Bal. 12/31 <u>30,000</u>
<b>Prepaid Insurance (A)</b>			
Bal. 1/1	-		
(8)	1,500	500 (9)	
Bal. 12/31	<u>1,000</u>		

### (3) Recognition of Income Tax Expense

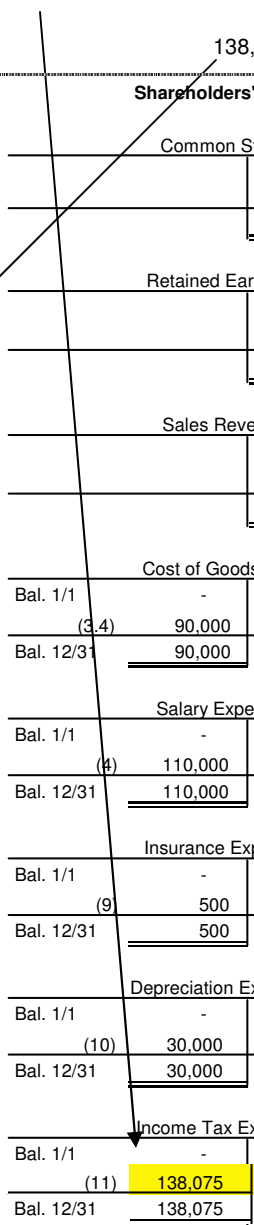
- Let us assume that King's Shoe Store should pay income tax at 35% of operating income
- The operating income can be calculated by subtracting total operating expenses from total revenue, i.e.,

$$\begin{aligned}\text{Operating income} &= \text{Total revenue} - \text{Total operating expenses} \\ &= \text{Total revenue} - (\text{Cost of Goods Sold} + \\ &\quad \text{Salary Expense} + \\ &\quad \text{Insurance Expense} + \\ &\quad \text{Depreciating Expenses})\end{aligned}$$

Transaction Number	Accounts	Debit	Credit
11	Income Tax Expense (SE)	138,075	
	Income Tax Payable (L)		138,075



Transaction Number	Accounts		Debit	Credit	
11	Income Tax Expense (SE)		138,075		
	Income Tax Payable (L)			138,075	
<b>Asset = Liabilities + Shareholders' Equity</b>					
<b>Cash (A)</b>		<b>Account Payable (L)</b>		<b>Common Stock (SE)</b>	
Bal. 1/1	30,000		135,000	Bal. 1/1	250,000
(2)	225,000	10,000 (1)	25,000 (3.1)		50,000 (7)
(5)	325,000	110,000 (4)	<u>90,000</u>	Bal. 12/31	<u>300,000</u>
(7)	50,000	70,000 (6)			
		1,500 (8)			
Bal. 12/31	<u>438,500</u>				
<b>Account Receivable (A)</b>		<b>Bonds Payable (L)</b>		<b>Retained Earnings (SE)</b>	
Bal. 1/1	63,000		100,000	Bal. 1/1	123,000
(2)	400,000	325,000 (5)	<u>100,000</u>	Bal. 12/31	<u>123,000</u>
Bal. 12/31	<u>138,000</u>				
<b>Merchandise Inventory (A)</b>		<b>Income Tax Payable (L)</b>		<b>Sales Revenue (SE)</b>	
Bal. 1/1	175,000		-	Bal. 1/1	-
(3.3)	10,000	90,000 (3.4)	138,075 (11)	(2)	625,000
Bal. 12/31	<u>95,000</u>		<u>138,075</u>	Bal. 12/31	<u>625,000</u>
<b>Building and Equipment (A)</b>		<b>Cost of Goods Sold (SE)</b>		<b>Salary Expense (SE)</b>	
Bal. 1/1	525,000			Bal. 1/1	-
(1)	10,000			(4)	110,000
Bal. 12/31	<u>535,000</u>			Bal. 12/31	<u>110,000</u>
<b>Raw Materials Inventory (A)</b>		<b>Insurance Expense (SE)</b>		<b>Depreciation Expense (SE)</b>	
Bal. 1/1	10,000			Bal. 1/1	-
(3.1)	25,000	20,000 (3.2)		(9)	500
Bal. 12/31	<u>15,000</u>			Bal. 12/31	<u>500</u>
<b>Work-in-Process Inventory (A)</b>		<b>Income Tax Expense (SE)</b>		<b>Prepaid Insurance (A)</b>	
Bal. 1/1	10,000			Bal. 1/1	-
(3.2)	20,000	10,000 (3.3)		(8)	1,500
Bal. 12/31	<u>20,000</u>			Bal. 12/31	<u>1,000</u>
<b>Accumulated Depreciation (XA)</b>					
		85,000	Bal. 1/1		
		30,000	(10)		
		<u>115,000</u>	Bal. 12/31		



## Adjusted Balance

**King Shoe Store, Inc.**  
Adjusted Balance  
31-Dec-00

	Unadjusted Balance		Adjusting Entries			Adjusted Balance	
	Debit	Credit	Debit	Credit	Transaction Number	Debit	Credit
Cash (A)	438,500					438,500	
Account Receivable (A)	138,000					138,000	
Raw Materials Inventory (A)	15,000					15,000	
Work-in-Process Inventory (A)	20,000					20,000	
Merchandise Inventory (A)	95,000					95,000	
Prepaid Insurance (A)	1,500			500	(9)	1,000	
Land (A)	100,000					100,000	
Building and Equipment (A)	535,000					535,000	
Accumulated Depreciation (XA)		85,000		30,000	(10)		115,000
Accounts Payable (L)		90,000					90,000
Income Tax Payable (L)				138,075	(11)		138,075
Bonds Payable (L)		100,000					100,000
Common Stock (SE)		300,000					300,000
Additional Paid-in Capital (SE)		200,000					200,000
Retained Earnings (SE)		143,000					143,000
Sales Revenue (SE)		625,000					625,000
Cost of Goods Sold (SE)	90,000					90,000	
Salary Expense (SE)	110,000					110,000	
Insurance Expense (SE)			500		(9)	500	
Depreciation Expense (SE)			30,000		(10)	30,000	
Income Tax Expense (SE)			138,075		(11)	138,075	
<b>Total</b>	<b>1,543,000</b>	<b>1,543,000</b>	<b>168,575</b>	<b>168,575</b>		<b>1,711,075</b>	<b>1,711,075</b>

## Closing Entries

### King Shoe Store, Inc.

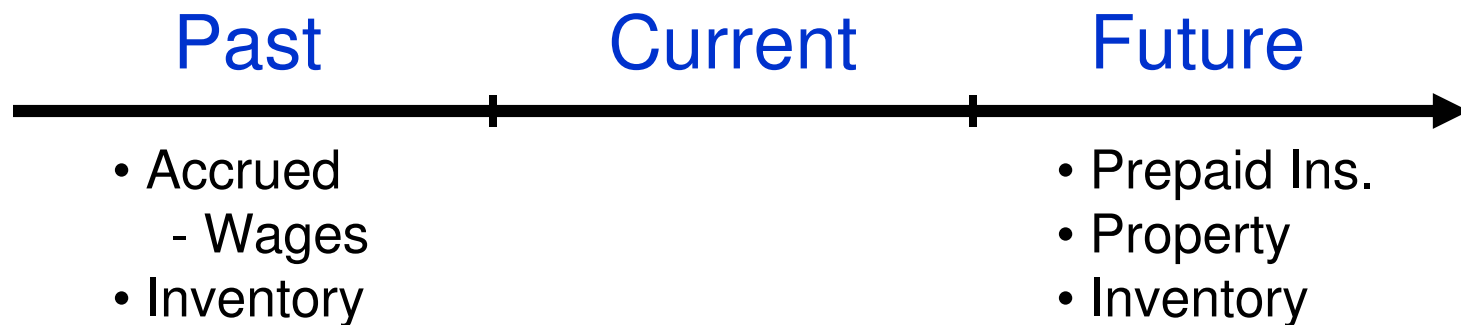
Adjusted Balance

31-Dec-00

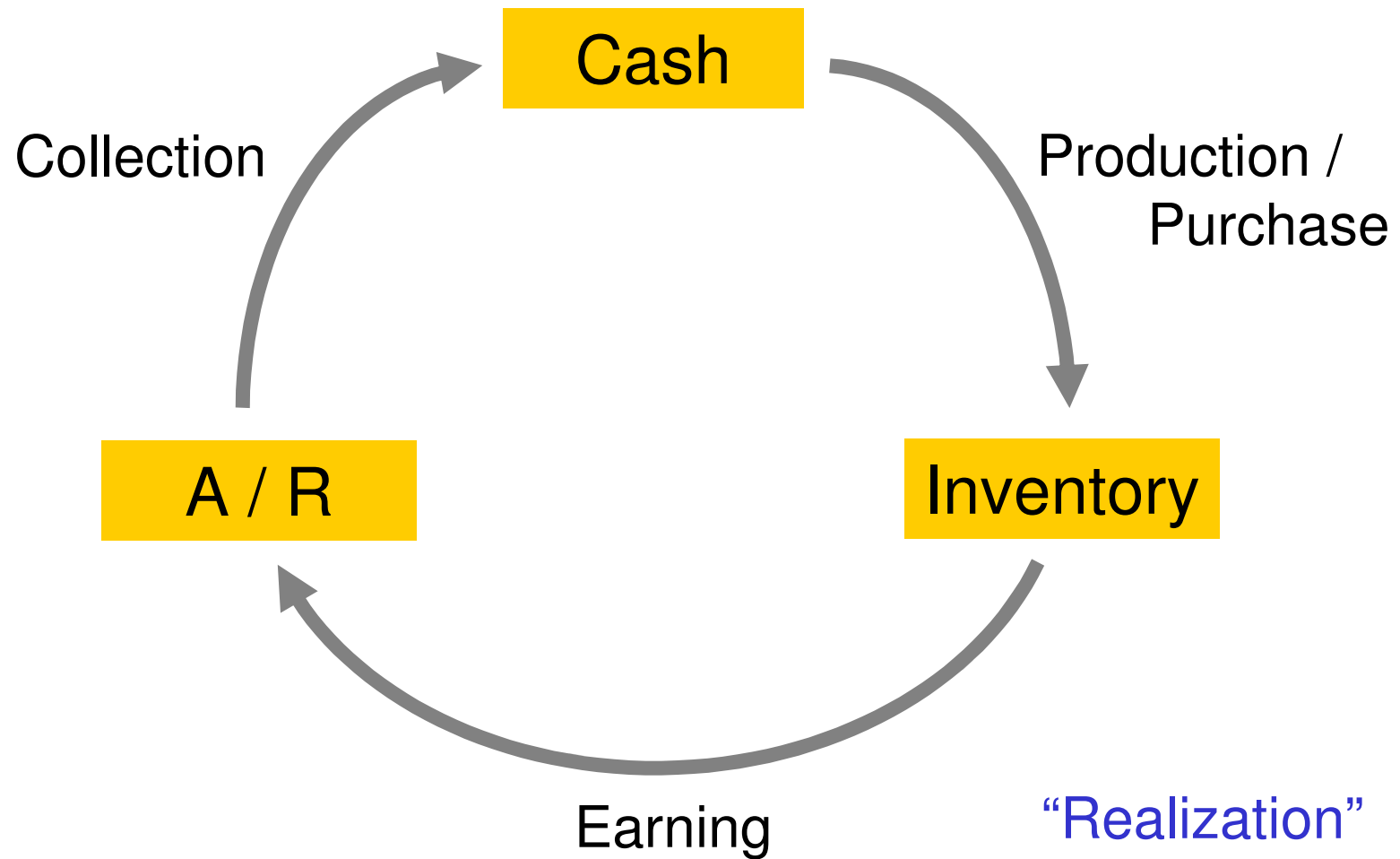
	Unadjusted Balance		Adjusting Entries			Adjusted Balance		Closing Entries (Income Statement)		Post-Closing Balance (Balance Sheet)	
	Debit	Credit	Debit	Credit	Transaction Number	Debit	Credit	Debit	Credit	Debit	Credit
Cash (A)	438,500					438,500				438,500	
Account Receivable (A)	138,000					138,000				138,000	
Raw Materials Inventory (A)	15,000					15,000				15,000	
Work-in-Process Inventory (A)	20,000					20,000				20,000	
Merchandise Inventory (A)	95,000					95,000				95,000	
Prepaid Insurance (A)	1,500			500	(9)	1,000				1,000	
Land (A)	100,000					100,000				100,000	
Building and Equipment (A)	535,000					535,000				535,000	
Accumulated Depreciation (XA)		85,000		30,000	(10)		115,000				115,000
Accounts Payable (L)		90,000					90,000				90,000
Income Tax Payable (L)				138,075	(11)		138,075				138,075
Bonds Payable (L)		100,000					100,000				100,000
Common Stock (SE)		300,000					300,000				300,000
Additional Paid-in Capital (SE)		200,000					200,000				200,000
Retained Earnings (SE)		143,000					143,000				399,425
Sales Revenue (SE)		625,000					625,000	625,000			-
Cost of Goods Sold (SE)	90,000					90,000			90,000		-
Salary Expense (SE)	110,000					110,000			110,000		-
Insurance Expense (SE)			500		(9)	500			500		-
Depreciation Expense (SE)			30,000		(10)	30,000			30,000		-
Income Tax Expense (SE)			138,075		(11)	138,075			138,075		-
<b>Total</b>	<u>1,543,000</u>	<u>1,543,000</u>	<u>168,575</u>	<u>168,575</u>		<u>1,711,075</u>	<u>1,711,075</u>	<u>625,000</u>	<u>625,000</u>	<u>1,342,500</u>	<u>1,342,500</u>

# Income Statement

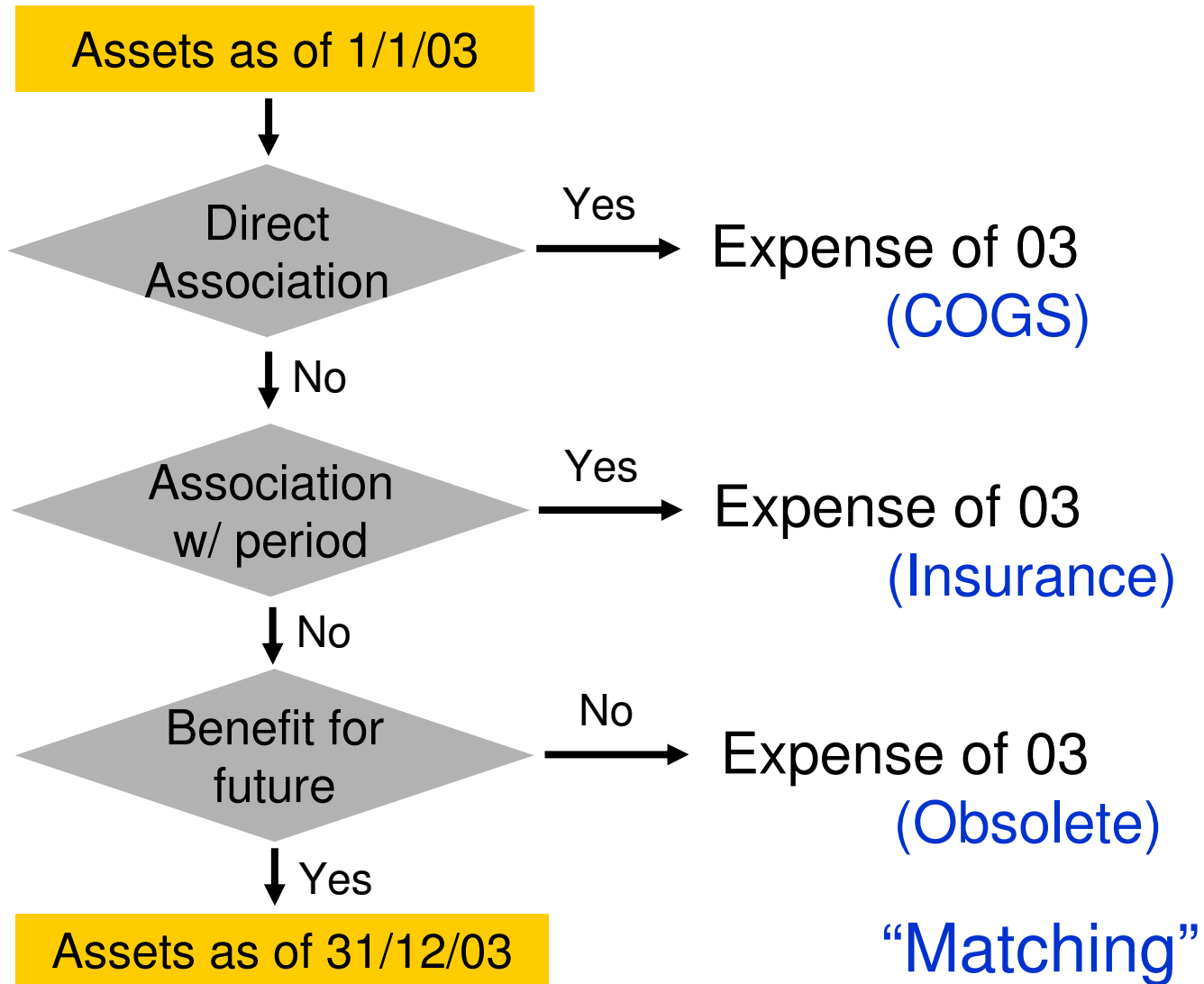
- Cash method
- Accrual method
  - Store up expenses until sold
  - “Match” revenues w/expenses
  - Expenses (Timing of)



# Business Financial Flow



# Expenditures in 1/1/03 – 31/12/03



## Income Statement

### King's Shoe Store, Inc.

Income Statement for the Year Ending December 31, 2000

---

<b>Revenue:</b>		
Sales Revenue	625,000	
Other Revenue	<u>-</u>	
Total Revenue		<u>625,000</u>
<b>Expenses:</b>		
Cost of Goods Sold	90,000	
Salary Expense	110,000	
Insurance Expense	500	
Depreciation Expense	<u>30,000</u>	
Total Expense		<u>230,500</u>
<b>Operating Income</b>		<u>394,500</u>
Less Income taxes (35%)		<u>(138,075)</u>
<b>Net Income</b>		<u>256,425</u>

---

## Balance Sheet

King's Shoe Store, Inc.  
**Comparative Balance Sheet**  
 As of December 31, 1999 and 2000

	<b>Assets</b>		<b>Liabilities and Shareholders' Equity</b>	
	December 31, 2000	December 31, 1999	December 31, 2000	December 31, 1999
<b>Current Assets:</b>			<b>Current Liabilities</b>	
Cash	438,500	30,000	Account Payable	90,000      135,000
Account Receivable	138,000	63,000	Income Tax Payable	138,075      -
Raw Materials Inventory	15,000	10,000	Total Current Liabilities	228,075      135,000
Work-in-Process Inventory	20,000	10,000	<b>Long-Term Debt</b>	
Merchandise Inventory	95,000	175,000	Bonds Payable	100,000      100,000
Prepaid Insurance	1,000	-	Total Liabilities	328,075      235,000
Total Current Assets	<u>707,500</u>	<u>288,000</u>		
<b>Property, Plant, and Equipment</b>			<b>Shareholders' Equity</b>	
Land	100,000	100,000	Common Stock (at par value)	300,000      250,000
Building and Equipment (at acquisition cost)	535,000	525,000	Additional Paid-in Capital	200,000      200,000
Less: Accumulated Depreciation	(115,000)	(85,000)	Retained Earnings	399,425      143,000
Building and Equipment (net)	420,000	440,000	Total Shareholders' Equity	899,425      593,000
Total Property, Plant, and Equipment	<u>520,000</u>	<u>540,000</u>	Total Liabilities and Shareholders' Equity	<u>1,227,500</u> <u>828,000</u>
Total Assets	<u>1,227,500</u>	<u>828,000</u>		



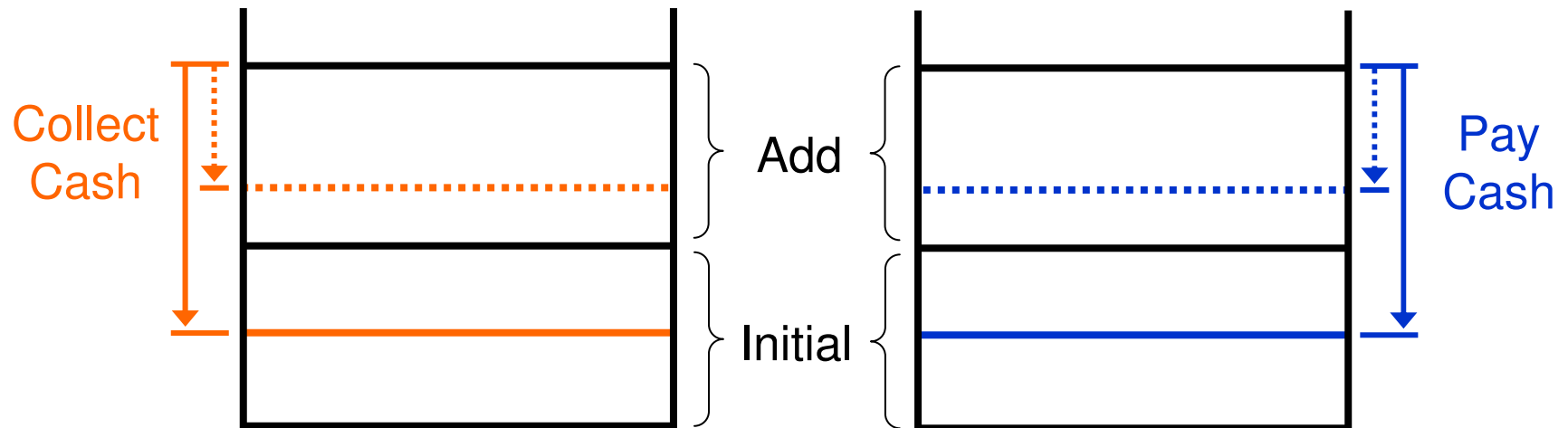
# Cash Flow Statement

- Revenues converted to C/F
- Expenses converted to C/F
- Other sources of cash
- Other uses of cash

# Cash Flow

A/R

A/P



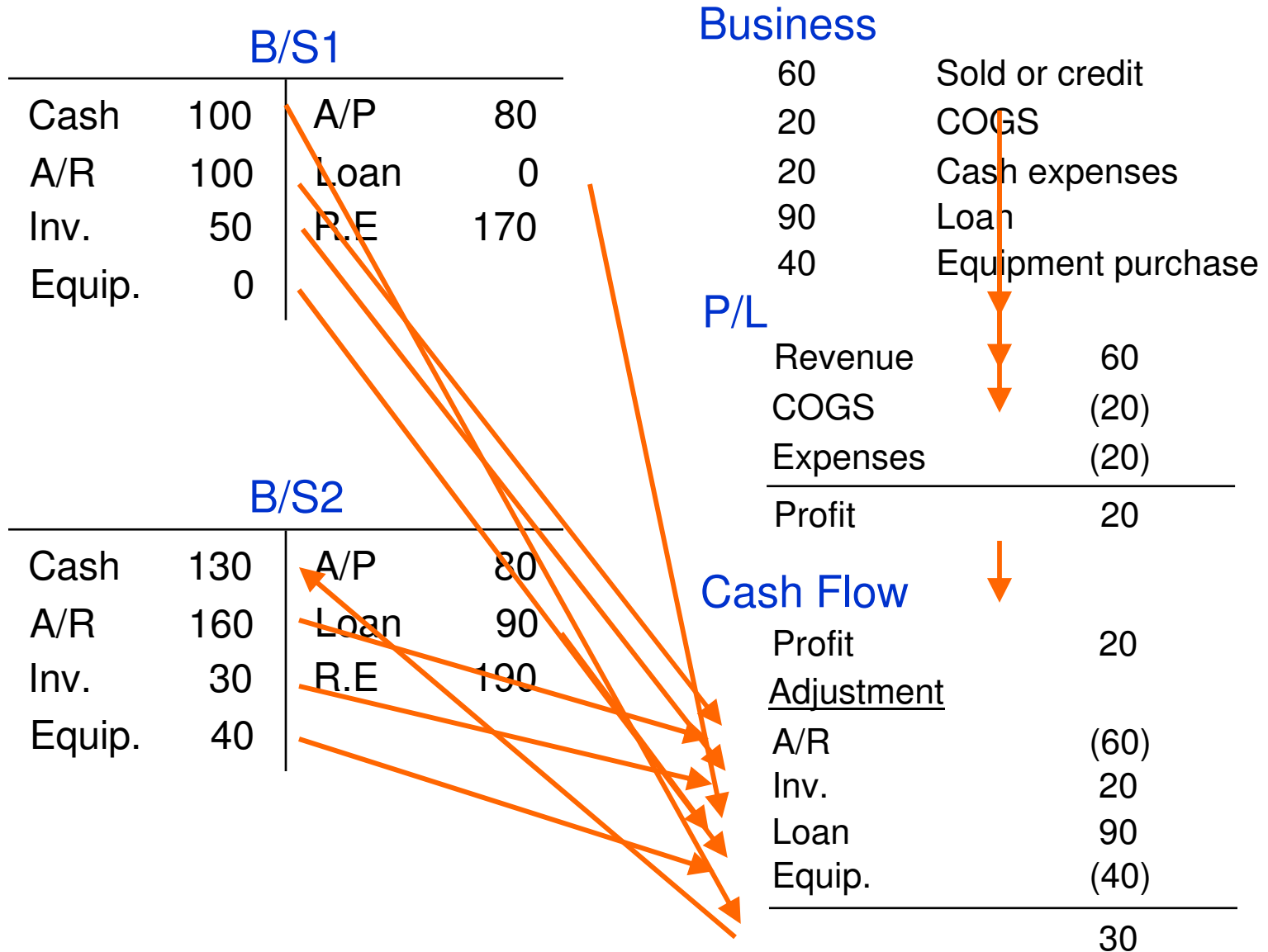
if increase, '-'

if decrease, '+'

if increase, '-'

if decrease, '+'

# Cash Flow Calculation



## Statement of Cash Flows

---

Cash Flow from Operating Activities:	
Net Income	256,425
Noncash Adjustments	
Depreciation	30,000
Decrease in accounts payable	(45,000)
Increase in tax payable	138,075
Increase in accounts receivable	(75,000)
Decrease in Raw Materials Inventory	(5,000)
Decrease in Work-in-Process Inventory	(10,000)
Decrease in inventory	80,000
Increase in prepaid expenses	(1,000)
Net cash increase from operating activities	<u>368,500</u>
Cash Flow from Investing Activities:	
Purchase of Building and Equipment	(10,000)
Net cash increase from Investing activities	(10,000)
Cash Flow from Financing Activities:	
Issuance of Common Stocks	50,000
Net cash increase from Financing activities	<u>50,000</u>
Increase in Cash during 2000	408,500
Beginning Cash Balance	<u>30,000</u>
Ending Cash Balance	<u><u>438,500</u></u>

# Financial Ratios

1. Profitability
  - ROA
  - ROE
  - Profit Margin
2. Activity
  - Asset Turnover
  - Days Receivable
  - Inventory Turnover
3. Leverage
  - Current ratio
  - Debt-to-Equity

Example: Compound (page 52)

$$\text{ROE} = \frac{\text{Income}}{\text{Equity}} \equiv \frac{\text{Income}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Assets}} \times \frac{\text{Assets}}{\text{Equity}}$$

## Financial Ratios

Net Income	256,425
Total Assets	1,227,500
Sales Revenue	625,000
Total Assets	1,227,500
	828,000

### Profitability Ratios

- Return on Assets (ROA) = (Net Income / Total Assets) x 100
- Return on Equity (ROE) = (Net Income / Shareholders' Equity) x 100
- Profit Margin = (Net Income / Sales Revenue) x 100

= 20.9 %  
 = 28.5 %  
 = 41.0 %

### Activity Ratios

- Asset Turnover = Sales Revenue / [(Beginning Assets + Ending Assets) / 2]
- Days of Receivables = (Receivables / Sales Revenue) x Days in Period
- Inventory Turnover = Cost of Good Sold / [(Beginning Inventory + Ending Inventory) / 2]

= 0.61  
 = 81  
 = 0.67

### Leverage Ratios

- Current Ratio = Current Assets / Current Liabilities
- Debt-to-Equity Ratio = Total Liabilities / Shareholders' Equity

Total Current Assets	707,500
Total Current Liabilities	228,075

= 3.10  
 = 0.36

# The Long Views

