EMBA5401 Accounting

Long-Term Assets and Liabilities

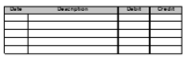
1

Plant Assets

Long-lived assets acquired for use in business operations.

Similar to long-term prepaid expenses

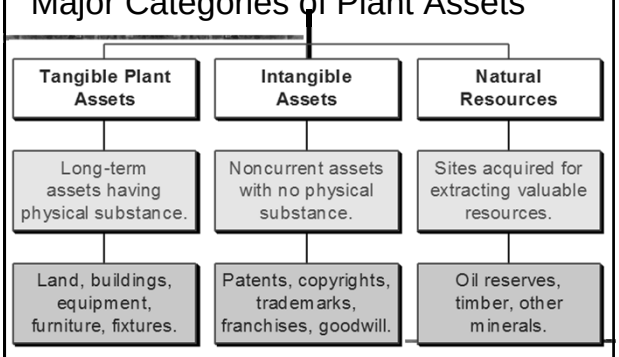
The cost of plant assets is the *advance purchase* of services.



As years pass, and the services are used, the cost is transferred to *depreciation expense*.

2

Major Categories of Plant Assets



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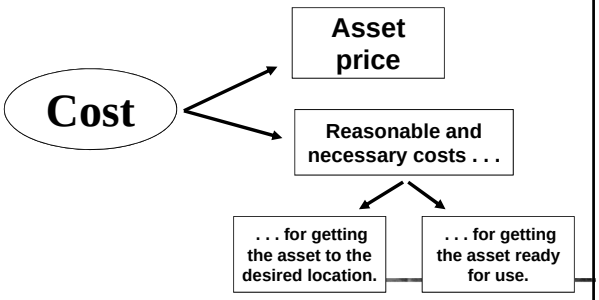
Accountable Events

1. **Acquisition.**
2. **Allocation of the acquisition cost to expense over the asset's useful life (depreciation).**
3. **Sale or disposal.**

4

Acquisition of Plant Assets



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Determining Cost Example

On May 4, Heat Co., a maker of stoves in Ankara, buys a new machine from an equipment company. The new machine has a price of 52,000TL.

Heat Co. pays 500TL shipping cost to get the machine to Ankara. After the machine arrives, set-up costs of 1,300TL are incurred, along with 4,000TL in testing costs.

Compute the cost of Heat Co.'s new machine.

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Determining Cost Example

List price	52,000 TL
Transportation cost	500
Set-up	1,300
Testing	4,000
Total cost to Heat Co.	57,800 TL

Assets		=	Liabilities		+	Equity	
Cash	-57800						
Equipment	+57800						

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Special Considerations

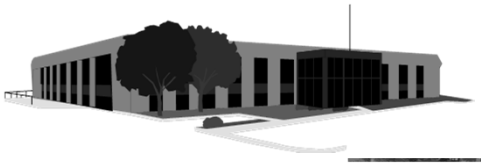
Land → **Cost includes real estate commissions, legal fees, clearing and grading the property.**

Land Improvements → **Improvements to land such as driveways, fences, and landscaping are recorded separately.**

8

Special Considerations

Buildings → **Repairs made prior to the building being put in use are considered part of the building's cost.**



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Special Considerations

Equipment → **Related interest, insurance, and property taxes are treated as expenses of the current period.**

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Special Considerations

Allocation of a Lump-Sum Purchase

The total cost must be allocated to separate accounts for each asset. → **The allocation is based on the relative Fair Market Value of each asset purchased.**

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Capital Expenditures and Revenue Expenditures

Capital Expenditure	Revenue Expenditure
Any material expenditure that will benefit several accounting periods.	Expenditures for ordinary repairs and maintenance.
To capitalize an expenditure means to charge it to an asset account.	To expense an expenditure means to charge it to an expense account.

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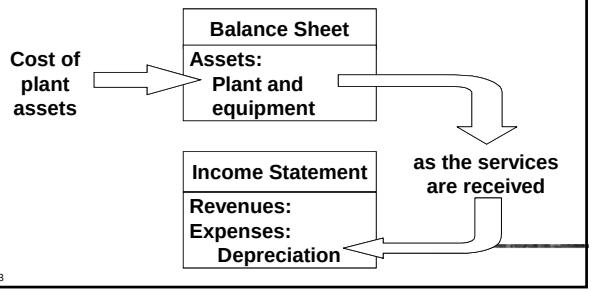
Depreciation

The allocation of the cost of a plant asset to expense in the periods in which services are received from the asset.



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Depreciation

- **Book Value**
  - Cost - Accumulated Depreciation
- **Accumulated Depreciation**
  - Contra-asset
  - Represents the portion of an asset's cost that has already been allocated to expense.
- **Causes of Depreciation**
  - Physical deterioration
  - Obsolescence

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Straight-Line Depreciation

$$\text{Depreciation Expense per Year} = \frac{\text{Cost - Residual Value}}{\text{Life in Years}}$$

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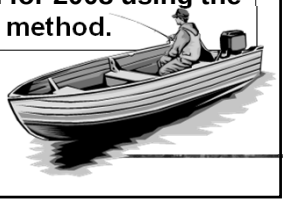
Straight-Line Method Example

On January 1, 2008, Bass Co. buys a new boat. Bass Co. pays $24,000 for the boat. The boat has an estimated residual value of $3,000 and an estimated useful life of 5 years.

Compute depreciation for 2008 using the straight-line method.



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Straight-Line Method Example

On January 1, 2008, Bass Co. buys a new boat. Bass Co. pays $24,000 for the boat. The boat has an estimated residual value of $3,000 and an estimated useful life of 5 years.

Compute depreciation for 2008using the straight-line method.

$$\frac{\text{Cost} - \text{Residual Value}}{\text{Years of Useful Life}} = \frac{\$\ 24{,}000 - \$\ 3{,}000}{5}$$

$$= \$\ 4{,}200 \text{ per year}$$

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Straight-Line Method Example

Bass Co. will record $4,200 depreciation each year for five years. Total depreciation over the estimated useful life of the boat is:

Year	Depreciation Expense (debit)	Accumulated Depreciation (credit)	Accumulated Depreciation Balance	Undepreciated Balance (book value)
				$ 24,000
2008	$ 4,200	$ 4,200	$ 4,200	19,800
2009	4,200	4,200	8,400	15,600
2010	4,200	4,200	12,600	11,400
2011	4,200	4,200	16,800	7,200
2012	4,200	4,200	21,000	3,000
	$ 21,000	$ 21,000		

Salvage Value

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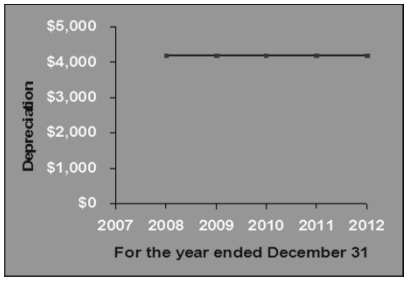
Straight-Line Method
Graph of Depreciation Expense



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Declining-Balance Method

Depreciation in the early years of an asset's estimated useful life is higher than in later years.

Depreciation Expense = Remaining Book Value × Accelerated Depreciation Rate

The double-declining balance accelerated depreciation rate is 200% of the straight-line depreciation rate of 1/Useful Life.

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Double-Declining Balance Example

On January 1, 2008, Bass Co. buys a new boat. Bass Co. pays $24,000 for the boat. The boat has an estimated residual value of $3,000 and an estimated useful life of 5 years.

Compute depreciation for 2008 using the double-declining balance method.

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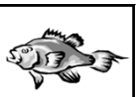
Straight-Line Method Example



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2012	4,200	4,200	21,000	3,000
	$ 21,000	$ 21,000		

Salvage Value

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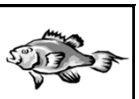
Double-Declining Balance Example



On January 1, 2008, Bass Co. buys a new boat. Bass Co. pays $24,000 for the boat. The boat has an estimated residual value of $3,000 and an estimated useful life of 5 years.

Compute depreciation for 2008 using the double-declining balance method.

2008 Depr. Expense	=	Remaining Book Value	×	Accelerated Depreciation Rate
	=	$ 24,000	×	2 × $^{1}/_{5}$
	=	$ 24,000	×	40%
	=	$ 9,600		

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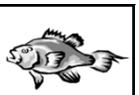
Double-Declining Balance Example



Compute depreciation for the rest of the boat's estimated useful life.

Year	Computation	Depr. Expense	Accumulated Depreciation	Book Value
2008	$ 24,000 × 40%	$ 9,600	$ 9,600	$ 14,400
2009	$ 14,400 × 40%	$ 5,760	$ 15,360	$ 8,640
2010	$ 8,640 × 40%	$ 3,456	$ 18,816	$ 5,184
2011	$ 5,184 × 40%	$ 2,074	$ 20,890	$ 3,110
2012	Plug year # 5	$ 110	$ 21,000	$ 3,000
Total Depreciation		$ 21,000		

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Double-Declining Balance Example

Total depreciation over the estimated useful life of an asset is the same using either the straight-line method or the declining-balance method.

Year	Computation	Depr. Expense	Accumulated Depreciation	Book Value
2008	$ 24,000 × 40%	$ 9,600	$ 9,600	$ 14,400
2009	$ 14,400 × 40%	$ 5,760	$ 15,360	$ 8,640
2010	$ 8,640 × 40%	$ 3,456	$ 18,816	$ 5,184
2011	$ 5,184 × 40%	$ 2,074	$ 20,890	$ 3,110
2012	Plug year # 5	$ 110	$ 21,000	$ 3,000
Total Depreciation		$ 21,000		

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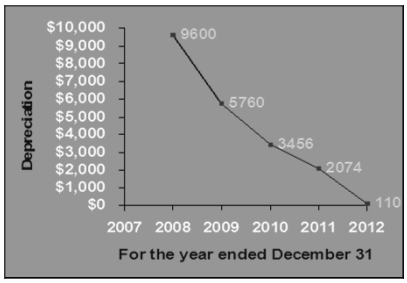
Double-Declining Balance Graph of Depreciation Expense



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Other Issues

- **Estimates of Useful Life and Residual Value**
  - **May differ from company to company.**
  - **The reasonableness of management's estimates is evaluated by external auditors.**
- **Principle of Consistency**
  - **Companies should avoid switching depreciation methods from period to period.**

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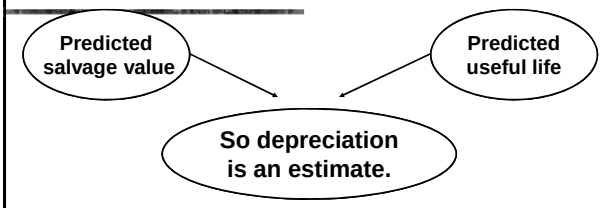
Revising Depreciation Rates



Over the life of an asset, new information may come to light that indicates the original estimates need to be revised.

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Revising Depreciation Rates Example

On January 1, 2008, equipment was purchased that cost $40,000, has a useful life of 10 years and no salvage value. During 2011, the useful life was revised to 8 years total (5 years remaining).

Calculate depreciation expense for the year ended December 31, 2011, using the straight-line method.

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Revising Depreciation Rates Example

When our estimates change, depreciation is:

$$\frac{\text{Book value at date of change} - \text{Salvage value at date of change}}{\text{Remaining useful life at date of change}}$$

Asset cost	$ 40,000
Accumulated depreciation, 12/31/2010 ($4,000 per year × 3 years)	12,000
Remaining book value	$ 28,000
Divide by remaining life	÷ 5
Revised annual depreciation	$ 5,600

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Impairment of Assets

If the cost of an asset cannot be recovered through future use or sale, the asset should be *written down* to its net realizable value.

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Disposal of Plant and Equipment

Update depreciation to the date of disposal.

Journalize disposal by:

- **Recording cash received or paid.**
- **Recording a gain or loss.**
- **Removing accumulated depreciation.**
- **Removing the asset cost.**

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Disposal of Plant and Equipment

If Cash > BV, record a gain (credit).
If Cash < BV, record a loss (debit).
If Cash = BV, no gain or loss.

- **Recording cash received or paid.**
- **Recording a gain or loss.**
- **Removing accumulated depreciation.**
- **Removing the asset cost.**

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Disposal of Plant and Equipment Example

On September 30, 2009, Evans Map Company sells a machine that originally cost $100,000 for $60,000 cash. The machine was placed in service on January 1, 2004. It has been depreciated using the straight-line method with an estimated salvage value of $20,000 and an estimated useful life of 10 years.

Let's answer the following questions.

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Disposal of Plant and Equipment Example

The amount of depreciation recorded on September 30, 2009, to bring depreciation up to date is:

a. $8,000.
b. $6,000.
c. $4,000.
d. $2,000.

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Disposal of Plant and Equipment Example

The amount of depreciation recorded on September 30, 2009, to bring depreciation up to date is:

a. $8,000.
b. $6,000.
c. $4,000.
d. $2,000.

Annual Depreciation:
($100,000 - $20,000) ÷ 10 Yrs. = $8,000

Depreciation to Sept. 30:
9/12 × $8,000 = $6,000

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Disposal of Plant and Equipment Example

After updating the depreciation, the machine's book value on September 30, 2009, is:

a. **$54,000.**
b. **$46,000.**
c. **$40,000.**
d. **$60,000.**

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Disposal of Plant and Equipment Example

After updating the depreciation, the machine's book value on September 30, 2009, is:

a. **$54,000.**
b. **$46,000.**
c. **$40,000.**
d. **$60,000.**

Cost	$ 100,000
Accumulated Depreciation:	
(5 yrs. × $8,000) + $6,000 =	46,000
Book Value	$ 54,000

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Disposal of Plant and Equipment Example

The machine's sale resulted in:

a. **a gain of $6,000.**
b. **a gain of $4,000.**
c. **a loss of $6,000.**
d. **a loss of $4,000.**

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Disposal of Plant and Equipment Example

The machine's sale resulted in:

a. a gain of $6,000.
b. a gain of $4,000.
c. a loss of $6,000.
d. a loss of $4,000.

Cost	$ 100,000
Accum. Depr.	46,000
Book Value	$ 54,000
Cash Received	60,000
Gain	$ 6,000

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Long-Term Debt

Relatively small debt needs can be filled from single sources.

Banks

or

Insurance Companies

or

Pension Plans

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Long-Term Debt

Large debt needs are often filled by issuing bonds.

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Installment Notes Payable

Long-term notes that call for a series of installment payments.

Each payment covers interest for the period AND a portion of the principal.

With each payment, the interest portion gets smaller and the principal portion gets larger.

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Allocating Installment Payments Between Interest and Principal

1. **Identify the unpaid principal balance.**
2. **Unpaid Principal × Interest rate = Interest expense.**
3. **Installment payment - Interest expense = Reduction in unpaid principal balance.**
4. **Compute new unpaid principal balance.**

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Allocating Installment Payments Between Interest and Principal

On January 1, 2010, Rocket Corp. borrowed $7,581.57 from First Bank of River City. The loan was a five-year loan and had an interest rate of 10%. The annual payment is $2,000.

Prepare an amortization table for Rocket Corp.'s loan.

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Allocating Installment Payments Between Interest and Principal

Date	Payment	Interest Expense	Reduction in Unpaid Balance	Unpaid Balance
Jan. 1, 2010				$ 7,581.57
Dec.31, 2010	$ 2,000.00	$ 758.16	$ 1,241.84	6,339.73
Dec.31, 2011	2,000.00	633.97	1,366.03	4,973.70
Dec.31, 2012	2,000.00	497.37	1,502.63	3,471.07
Dec.31, 2013	2,000.00	347.11	1,652.89	1,818.18
Dec.31, 2014	2,000.00	181.82	1,818.18	(0.00)

Now, prepare the entry for the first payment on December 31, 2010.

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Allocating Installment Payments Between Interest and Principal

The information needed for the journal entry can be found on the amortization table. The payment amount, the interest expense, and the amount to credit to principal are all on the table.

Assets		=	Liabilities		+	Equity	
Cash	-2000		Note Payable	-1241.84		Interest Exp.	-758.16

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Bonds Payable

- **Bonds usually involve the borrowing of a large sum of money, called principal.**
- **The principal is usually paid back as a lump sum at the end of the bond period.**
- **Individual bonds are often denominated with a par value, or face value, of $1,000.**

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Bonds Payable

- **Bonds usually carry a stated rate of interest, also called a *contract rate*.**
- **Interest is normally paid semiannually.**
- **Interest is computed as:**

Interest = Principal × Stated Rate × Time

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Bonds Payable

- **Bonds are issued through an intermediary called an *underwriter*.**
- **Bonds can be sold on organized securities exchanges.**
- **Bond prices are usually quoted as a percentage of the face amount.**
  - For example, a $1,000 bond priced at 102 would sell for $1,020.

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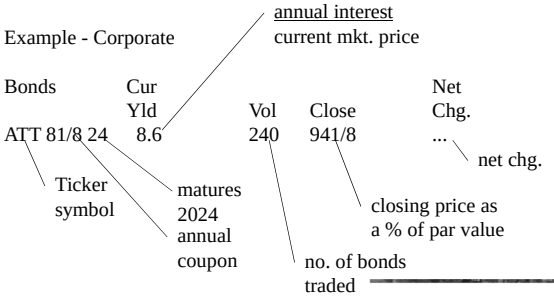
Reading the Quotes



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Accounting for Bonds Payable

On January 1, 2010, Rocket Corp. issues $1,500,000 of 12%, 10-year bonds payable. Interest is payable semiannually, each June 30 and December 31.

Assume the bonds are issued at face value. Record the issuance of the bonds.

Assets		=	Liabilities		+	Equity	
Cash	+1500000		Bonds Payable	+1500000			

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Accounting for Bonds Payable

Record the first interest payment on June 30, 2010.

Assets		=	Liabilities		+	Equity	
Cash	-90000					Interest Exp.	-90000

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Accounting for Bonds Payable

Record the last interest payment on December 31, 2019.

Assets		=	Liabilities		+	Equity	
Cash	-1,590,000		Bonds Pay.	-1,500,000		Interest Exp.	-90,000

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Accounting for Bonds Payable issued at a discount

On January 1, 2010, Rocket Corp. issues $1,500,000 of 12%, 10-year bonds payable. Interest is payable semiannually, each June 30 and December 31.

Assume the bonds are issued at 89.
Record the issuance of the bonds.

Assets		=	Liabilities		+	Equity	
Cash	+1,335,000		Bonds Payable	+1500000			
			Discount on Bonds Payable	-165000			

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Accounting for Bonds Payable

Record the first interest payment on June 30, 2010.
Assume that any premium/discount is amortized straight-line

Assets		=	Liabilities		+	Equity	
Cash	-90000		Discount on Bonds Pay.	+8250		Interest Exp.	-98250

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Accounting for Bonds Payable

Record the last interest payment on December 31, 2019.

Assets		=	Liabilities		+	Equity	
Cash	-1,590,000		Bonds Pay.	-1,500,000		Interest Exp.	-98,250
			Discount on Bonds Pay.	+8,250			

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Accounting for Bonds Payable

What would happen if a bond were issued at a premium?

YOU tell me!

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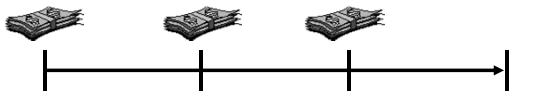
The Concept of Present Value

Two types of cash flows are involved with bonds:

❶Periodic interest payments called annuities.



❷Principal payment at maturity.

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The Present Value Concept and Bond Prices

The selling price of the bond is determined by the market based on the time value of money.

Present Value of the Principal (a single payment)
+ Present Value of the Interest Payments (an annuity)
= Selling Price of the Bond

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The Present Value Concept and Bond Prices

The selling price of the bond is determined by the market based on the time value of money.

Interest Rates			Bond Price			Accounting for the Difference
Stated Rate	=	Market Rate	Bond Price	=	Par Value of the Bond	There is no difference to account for.
Stated Rate	<	Market Rate	Bond Price	<	Par Value of the Bond	The difference is accounted for as a bond discount.
Stated Rate	>	Market Rate	Bond Price	>	Par Value of the Bond	The difference is accounted for as a bond premium.

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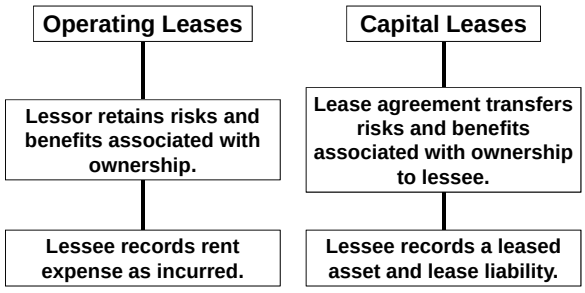
Lease Payment Obligations



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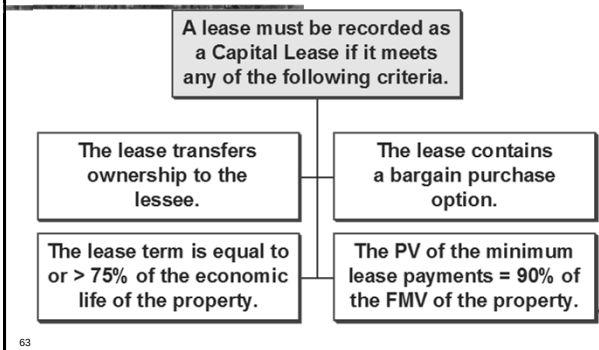
Capital Lease Criteria



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