CHAPTER

Accounting for Leases

OBJECTIVES

After careful study of this chapter, you will be able to:

1. Explain the advantages of leasing.
2. Understand key terms related to leasing.
3. Explain how to classify leases of personal property.
4. Account for a lessee’s operating and capital leases.
5. Understand disclosures by the lessee.
6. Account for a lessor’s operating, direct financing, and sales-type leases.
7. Understand disclosures by the lessor.
8. Explain the conceptual issues regarding leases.
SYNOPSIS

Advantages of Leasing

1. GAAP defines a lease as "an agreement conveying the right to use property, plant, or equipment (land or depreciable assets or both) usually for a stated period of time." A lessee acquires the right to use the property, plant, or equipment. A lessor gives up that right. Other key terms are listed in Exhibit 21-1 in the text.

2. Although leases are generally more expensive in the long run than purchases, the advantages of leases from the lessee's point of view include: (1) Financing benefits: An asset may be acquired with 100% financing, conserving cash for the lessee. A lease contract may be more flexible than other debt arrangements, and a lease creates a claim only against the leased equipment, rather than against all assets. (2) Risk benefit: The risks of obsolescence and inadequacy may be borne by the lessor. (3) Tax benefit: Tax deductions, taken over the life of the lease, may be accelerated, and the full cost of the asset, including land, may be written off. (4) Financial reporting benefit: Some key financial ratios are improved when a leased asset is not recorded as an asset and a liability by the lessee. (5) Billing benefit: The interest element in lease payments may be charged to customers under some contracts, while debt interest may not.

3. The main advantages of leases from the lessor's point of view are that leasing provides (a) a way of indirectly making a sale; and (b) another means of obtaining a profit opportunity through the transfer of an asset by the lessor under the lease agreement.

Classification of Personal Property Leases

4. GAAP, based on the concept of economic substance over legal form, concluded that a lease that transfers substantially all the risks and benefits of ownership represents in substance a purchase by the lessee and a sale by the lessor of an asset. The Statement provides criteria for the classification of leases by both the lessee and the lessor. Exhibit 21-2 in the text summarizes those criteria.

5. A lessee may have two types of lease: (a) capital lease, accounted for by the capital lease method; and (b) operating lease, accounted for by the operating method.

6. A lessor may have three types of lease: (a) sales-type lease, accounted for by the sales-financing method; (b) direct financing lease, accounted for by the financing method; and (c) operating lease, accounted for by the operating method.

Accounting and Reporting by Lessees

7. A lease that meets none of the following general classification criteria is classified as an operating lease by the lessee:

   (a) The lease transfers ownership of the property to the lessee by the end of the lease term.

   (b) The lease contains a bargain purchase option [see (item 15) below].

   (c) The lease term is equal to 75% or more of the estimated economic life of the leased property.

   (d) The present value of the minimum lease payments is at least 90% of the fair value of the leased property to the lessor.
Strategy: Note that if the lease begins in the last 25% of the total estimated economic life, items (c) and (d) do not apply.

The lessee treats payments made under an operating lease as normal rental payments, and does not report an asset or liability for the lease.

8. A lease that meets one or more of the criteria in item 7 (above) is classified as a capital lease by the lessee. The lessee records an asset and a liability equal to the sum of the present value (not the gross rental value), at the beginning of the lease term, of the minimum lease payments during the lease term.

9. Executory costs are ownership-type costs such as insurance, maintenance, and property taxes. Although these costs may be paid by either the lessee or the lessor, it is normally expected that they should be borne by the party who is in substance the owner of the asset. Executory costs paid directly by the lessor are expensed by the lessee as incurred. If executory costs are paid by the lessor, the portion of each lease payment representing a reimbursement of executory costs is excluded by the lessee from the computation of the present value of the minimum lease payments. That is, the minimum lease payments equal the lease payments minus the executory costs paid by the lessor.

10. The lessee uses the lower of the following discount rates to compute the present value of the minimum lease payments:

(a) The lessee's incremental borrowing rate, or

(b) The lessor's interest rate implicit in the lease, if it is known by the lessee, or if it is practicable for the lessee to learn it.

11. The lessee depreciates the asset over the estimated economic life of the asset if the capital lease agreement (a) transfers ownership of the asset to the lessee, or (b) contains a bargain purchase option. In other cases, the lessee amortizes the asset over the life of the lease, down to the asset's guaranteed residual value, if any, to the lessor at the end of the lease term.

Strategy: The FASB uses the term ‘amortize’ with regard to leases because technically the leased asset is an intangible asset. In use, either term (amortize or depreciate) can be used. Usually if the item is written off over the economic life of the property the term ‘depreciation’ is used. If the item is written off over a shorter period the term ‘amortize’ is used. We will use the term ‘depreciate’ for the remainder of this chapter.

12. The lessee uses the effective interest method (also called the interest method), which produces a constant rate of interest on the balance of the lease obligation outstanding at the beginning of each period, to allocate lease payments between the reduction of the principal and the payment of interest expense. Other methods are acceptable if the results do not differ materially from the results of the effective interest method.

13. The timing of the lease payments and, therefore, the type of annuity must be determined before making present value and interest calculations. An ordinary annuity requires lease payments to be made at the end of each payment period. An annuity due requires lease payments to be made at the beginning of each payment period.
14. The lessee identifies its capital lease obligations on its balance sheet and classifies the obligations into current and noncurrent portions. Two approaches are used to measure the amount of the current liability portion: (a) The present value of next year’s payments approach discounts the payment(s) to be made in the next year to the balance sheet date, producing the same current liability each year for a given lease. (b) The change in present value approach measures the current liability as the amount by which the total balance of the lease liability will decrease in the next year. Under both methods the remaining portion of the obligation is classified as a noncurrent liability.

15. A bargain purchase option extends to the lessee the right to purchase the leased property at a price so favorable that the exercise of the option appears, at the inception of the lease, to be reasonably assured. When a bargain purchase option exists, the lessee initially records the leased asset at the present value of the minimum lease payments (which includes the bargain purchase option). Subsequent accounting follows the usual pattern for capital leases.

16. A lessee may guarantee the residual value of an asset under capital lease, agreeing to pay the lessor the difference between a smaller actual value at the end of the lease and the guaranteed amount. In such a case, the lessee initially records the leased asset at the present value of the minimum lease payments (which includes the guaranteed residual value). Subsequent accounting follows the usual pattern for capital leases.

17. Disclosure requirements for lessees are shown in Exhibit 21-5 in the text.

Accounting and Reporting by Lessors

18. As shown in Exhibit 21-2 in the text, the four general classification criteria listed in (7) above apply to lessors as well as to lessees. Two additional criteria apply only to lessors:

(a) The collectibility of the minimum lease payments is reasonably assured (i.e., predictable).

(b) No important uncertainties surround the amount of unreimbursable costs yet to be incurred by the lessor under the lease.

19. A lease that does not meet any one of the general criteria in item 7 (above), or both of the additional criteria in item 18 (above), is classified as an operating lease by the lessor. Under an operating lease, the lessor retains substantially all of the risks and benefits of ownership. For accounting purposes, a lessor reports an asset leased under an operating lease on its balance sheet as an owned asset, and records depreciation on it. Even if rental receipts from an asset under an operating lease vary, generally they should be recognized by the lessor on the straight-line basis. Executory costs, normally paid by the lessor under an operating lease, are recorded as operating expenses by the lessor and matched against the gross rental revenue.

20. The lessor may incur initial direct costs, which (a) result directly from originating a lease, and (b) would not have been incurred without that leasing transaction. The lessor records the initial direct costs of an operating lease as an asset and matches this asset as an operating expense against the rental revenue over the term of the lease.

21. In a direct financing lease, the lessor "sells" the asset at a fair value equal to its cost or carrying value, and records a receivable. To be classified as a direct financing lease, a lease must meet one or more of the four general criteria in (7) above, and both the criteria in (18) above. In addition, there must be no manufacturer's or dealer's profit or loss (discussed below) in a direct financing lease. Instead, the net receivable recorded by the lessor equals the cost or carrying value of the property.
22. The gross receivable is the sum of (a) the undiscounted minimum lease payments (minus executory costs paid by the lessor), and (b) the estimated unguaranteed residual value accruing to the lessor (not discounted). The lessor records the difference between the gross receivable (the Minimum Lease Payments Receivable account) and the cost or carrying value of the asset as unearned revenue in a contra account such as Unearned Interest: Leases. The lessor's net investment in the lease at any time is the difference between the Minimum Lease Payments Receivable and the Unearned Interest accounts. The lessor recognizes interest revenue by the effective interest method, to produce a constant rate of return on the net investment. The interest rate that discounts the gross receivable to a present value equal to the net receivable is the rate implicit in the lease.

23. According to GAAP, the initial direct costs of a lease include incremental direct costs (costs that result directly from and are essential to the leasing transaction) and other direct costs (such as the costs of negotiating and preparing lease documents). Accounting for initial direct costs incurred by the lessor differs for each of the main types of lease. The total initial direct costs of a direct financing lease are not expensed, but are deferred and a new (lower) interest rate is determined.

24. To be classified as a sales-type lease, a lease must meet one or more of the four general criteria in (7) above, and both the criteria in item 18 (above). In addition, a sales-type lease must involve a manufacturer's or dealer's profit or loss, which exists when the asset's fair value at the inception of the lease differs from its cost or carrying value. The amount of profit or loss is the difference between (a) the present value of the minimum lease payments (net of executory costs) computed at the interest rate implicit in the lease (i.e., the sales price), and (b) the cost or carrying value of the asset plus any initial direct costs less the present value of the unguaranteed residual value accruing to the benefit of the lessor.

25. Two major differences distinguish a sales-type lease from a direct financing lease: the presence of manufacturer's (dealer's) profit or loss and the accounting treatment for initial direct costs.

26. As with a direct financing lease, the lessor under a sales-type lease does not report the asset or record depreciation on the leased asset. The lessee typically pays and records executory costs. The lessor recognizes the initial direct costs involved in a sales-type lease as a selling expense of the period, or as a component of cost of goods sold.

27. Unguaranteed and guaranteed residual values receive different treatment under a sales-type lease, but the same gross profit results. The lessor deducts the present value of an unguaranteed residual value from the cost or carrying value of the asset when the lessor recognizes the expenses associated with the signing of the lease. The present value of an unguaranteed residual value is not included in sales revenue. In contrast, the present value of the guaranteed residual value is not deducted from the cost and is included in sales revenue.

28. Disclosure requirements for lessors are shown in Exhibit 21-6 in the text.

29. A summary of the accounting for leases by the lessee and lessor is shown in Exhibit 21-7 in the text.
SELF-EVALUATION EXERCISES

True-False Questions

Determine whether each of the following statements is true or false.

1. If a capital lease contains a bargain purchase option, the lessee depreciates the leased property over the term of the lease.  
   Answer: False
   If the capital agreement contains a bargain purchase option, the lessee will depreciate (amortize) the asset over its estimated economic life, not the term of the lease.

2. In a direct financing lease, there is no dealer's profit or loss.  
   Answer: True
   In a direct financing lease, there is no dealer profit or loss. In these leases the lessor is usually a financial institution that transfers the asset at fair value and earns interest on the lease.

3. GAAP bases lease accounting on conformity with the legal form of leases.  
   Answer: False
   GAAP uses the economic substance of a lease as opposed to the legal form of the lease as the basis of accounting for leases.

4. Initial direct costs are always capitalized by the lessor and matched to lease revenue over the term of the lease.  
   Answer: False
   The accounting for initial direct costs incurred by the lessor is different for each of the main types of leases. For instance, in an operating lease, the costs are treated as an asset and expensed over the term of the lease. On a sales-type lease, initial direct costs are expensed in the period incurred.

5. Executory costs are ownership-type costs such as insurance, maintenance, and taxes.  
   Answer: True
   Executory costs are ownership-type costs associated with the asset being leased.

6. The effective interest method produces a constant rate of interest on the balance of the obligation outstanding at the beginning of each period.  
   Answer: True
   The effective interest method uses a constant rate of interest applied to the outstanding lease obligation. Even though the interest rate is constant, the interest expense will be different each period because the obligation outstanding changes each period.

7. Under an annuity due, payments must be made at the end of each period.  
   Answer: False
   An annuity due requires lease payments be made at the beginning of each period. An ordinary annuity requires payments be made at the end of each period.

8. To compute the present value of the minimum lease payments, the lessee uses the lower of the lessee's incremental borrowing rate, or the lessor's interest rate implicit in the lease, if known.  
   Answer: True
   The lessee will use the lower of either their incremental borrowing rate, or the implicit rate the lessor is using in the lease. Many times the implicit rate is unknown, requiring the lessee to use their incremental borrowing rate.
9. When a bargain purchase option exists, the lessee initially records the leased property at the present value of the minimum lease payments, minus the present value of the bargain purchase option.

**Answer: False**

When a bargain purchase option exists, the lessee initially records the leased property at the present value of the minimum lease payments, plus, not minus, the present value of the bargain purchase option.

10. The lessor records sales revenue and the cost of goods sold in the initial journal entries for a sales-type lease.

**Answer: True**

If the lease meets the requirements for a sales-type lease, then the initial entry would be recorded similar to a normal sales transaction with a credit to sales revenue and a debit to cost of goods sold. These would not be the only entries and will be discussed in the problem-solving section of this chapter.

11. Under a sales-type lease, the lessor records depreciation on the leased property over the term of the lease.

**Answer: False**

A sales-type lease results in the asset being transferred to the lessee. The initial entry removes the asset from the inventory account of the lessor. Because the asset is no longer carried on the lessor’s books, depreciation would not be recorded by the lessor.

12. Although guaranteed and unguaranteed residual values are treated differently under sales-type lease accounting, the same gross profit results.

**Answer: True**

The lessor deducts the present value of the unguaranteed residual value from the cost of the asset when it recognizes the expenses of the sale and the unguaranteed residual value is not included in sales revenue. The present value of the guaranteed residual, however, is not subtracted from expenses and is included in sales. Because both the expense AND revenue contain the guaranteed residual, the gross profit for both the guaranteed and unguaranteed residual will be the same.

13. When a lessee guarantees the residual value of an asset under capital lease, the lessee records the asset at the sum of the present values of the minimum lease payments, which includes the guaranteed residual value.

**Answer: True**

The minimum lease payments consist of the present value of all annual lease payments plus the present value of any guaranteed residual amount; therefore, the asset is recorded at the minimum lease payments that will be made over the life of the asset.

14. With a direct financing lease, the lessor records the difference between the gross receivable and the cost or carrying value of the asset in a contra account as unearned revenue.

**Answer: True**

In a direct financing lease, there is no profit on the leased asset. The lessor will make money on the interest earned over the life of the lease. The lessor records the gross amount (not net present value) of the payments the lessee is expected to make. These payments in total represent the value of the leased asset plus the interest expected to be earned on the leased asset. The lessor determines the interest revenue earned each period using the effective interest method.
15. The lessor's journal entries for the collection of rent and the recognition of earned interest are the same for sales-type and direct financing leases. 

**Answer: True**

The major difference between a sales-type and direct financing lease are the dealer's gross profit or loss in a sales-type lease and the accounting for the initial direct costs. The accounting for the collection of payments and interest recognition are the same in the two types of leases.

16. A lessee may have three types of lease: sales-type, direct financing, or operating.

**Answer: False**

A lessee has only two types of leases; operating and capital. A lessor has three types of leases: sales-type, direct financing, or operating. NOTE: Above in #6 in the synopsis only 3 types of lessee leases are discussed. Leveraged leases are discussed in the appendix.

17. When the estimated unguaranteed residual value of a leased asset declines, the lessor recognizes a loss.

**Answer: True**

When the lessor receives the asset back at the end of the lease, it will record the asset at the lowest of the cost, carrying value or fair value. If the asset is recorded at a value less than the unguaranteed residual, a loss is recognized for the difference.

18. A disadvantage to the lessee of a leasing is that the leased item may become obsolete before the end of the lease period.

**Answer: False**

One of the advantages to leasing from a lessee's standpoint is that the risk of obsolescence is borne by the lessor, not the lessee.

**Multiple Choice Questions**

Select the one **best** answer for each of the following questions.

1. Which of the following statements concerning initial direct costs incurred by a lessor is not true?

   (a) Material initial direct costs of an operating lease are matched by the lessor to rental revenue over the life of the lease.

   (b) Initial direct costs of all types of leases are recorded as a prepaid asset.

   (c) Initial direct costs of a direct financing lease are recognized as a reduction in the interest rate implicit in the lease.

   (d) Initial direct costs of a sales-type lease are charged against income of the period.

   **Answer: (b)** Initial direct costs of all types of leases are recorded as a prepaid asset.

   For a lessor, initial direct costs incurred are accounted for differently for each of the main types of capital leases.

   Answers (a), (c), and (d) are all true statements regarding direct costs and leases.
2. If a leased asset is not recorded as an asset and liability by the lessee, 
   (a) the current ratio and rate of return are generally lowered. 
   (b) comparability between companies is improved. 
   (c) the borrowing power of the lessee may be increased. 
   (d) financial ratios are generally unaffected as compared to recording the asset and liabilities. 

   **Answer:** (c) the borrowing power of the lessee may be increased. 

   A lease that is not recorded as a liability and an asset by the lessee is often called "off balance-sheet financing." If the leased item were to appear on the balance sheet it would increase the assets, but it would also increase liabilities. In most instances this would adversely affect the current ratio and debt ratios, which in turn will reduce the borrowing capabilities of the company. Therefore, the borrowing capacity is often improved by not reporting the asset on the balance sheet. 

   Answer (a) is incorrect because the current ratio and rate of return are usually lowered if the item appears on the balance sheet, not if it is omitted from the balance sheet. Answer (b) is incorrect because comparability between companies is impacted if two or more companies record similar transactions differently. Answer (d) is incorrect because when you change the composition of assets and liabilities, financial ratios will be affected. 

3. When a lease contains a bargain purchase option, 
   (a) the leased asset is depreciated by the lessee over the asset's estimated economic life. 
   (b) the leased asset is depreciated by the lessor over the lease term. 
   (c) the lease is always classified as an operating lease by the lessee. 
   (d) the lease is always classified as a sales-type lease by the lessor. 

   **Answer:** (a) the leased asset is depreciated by the lessee over the asset's estimated economic life. 

   When a bargain purchase is included in the lease, it is assumed that the lessee will take advantage of the bargain purchase at the end of the lease and acquire the asset. For this reason the lessee will control the asset for the asset’s estimated economic life. Therefore, the asset should be depreciated over the asset’s estimated economic life. 

   Answer (b) is incorrect because the asset will be controlled by the lessee over the entire economic life, not just over the term of the lease. Answer (c) is incorrect because the presence of a bargain purchase option is one of the conditions that automatically makes the lease a capital lease, not an operating lease. Answer (d) is incorrect because a sales-type lease is essentially a purchase at the outset of the lease and does not contain a bargain purchase option.
4. Which of the following statements about direct financing leases for lessors is not true?
   (a) Cost of goods sold and sales revenue are recorded at the inception of a direct financing lease.
   (b) A direct financing lease does not result in a dealer's profit.
   (c) Interest revenue under a direct financing lease is recognized by the effective interest method.
   (d) The Minimum Lease Payments Receivable account is recorded at the sum of the undiscounted minimum lease payments (net of executory costs paid by the lessor).

   **Answer: (a)** Cost of goods sold and sales revenue are recorded at the inception of a direct financing lease.

   A direct financing lease is a method of financing and not sales. At the inception of this transaction the asset is removed from the books of the lessor at cost, but no sales revenue is recorded. Revenue on this type of lease is in the form of interest revenue over the term of the lease.

   Answers (b), (c), and (d) are all characteristics of a direct financing lease and therefore are true statements and are not the correct answer for this question.

5. Executory costs:
   (a) are recorded as a prepaid asset by the lessor under a capital lease.
   (b) are always included by the lessee in the computation of the present value of the minimum lease payments.
   (c) include sales commissions, legal fees, and credit investigation charges.
   (d) should normally be borne by the party that is, in substance, the owner of the asset.

   **Answer: (d)** should normally be borne by the party which is, in substance, the owner of the asset.

   Executory costs are the costs associated with ownership of the asset and include items such as insurance, maintenance and repair costs. These costs can be borne by either party but are usually borne by the party who has the risks and benefits of ownership.

   Answer (a) is incorrect because generally speaking the party that assumes substantial ownership of the asset will pay the executory costs. In a capital lease, the lessor relinquishes the control of the asset and therefore would normally shift the executory costs to the lessee. Answer (b) is incorrect because executory costs are subtracted from the lease payments to calculate the present value of the minimum lease payments.

   Answer (c) is incorrect because sales commissions, legal fees, and credit investigation charges are not executory costs. These costs are initial direct costs.
6. GAAP:
   (a) emphasizes compliance with the legal provisions of leases.
   (b) reasons that a lease that transfers the risks and benefits of ownership represents, in substance, a purchase and sale.
   (c) attempts to provide separate classification criteria for lessees and lessors.
   (d) requires a lessee to include an asset under an operating lease on the balance sheet as an asset and a liability. 

   **Answer: (b)** reasons that a lease that transfers the risks and benefits of ownership represents, in substance, a purchase and sale.

   The basic concept is that when the benefits and risks of ownership are transferred in a lease agreement, there is in substance a sale/purchase arrangement between the lessee and lessor.

   Answer (a) is incorrect because in many instances the legal provisions of a lease arrangement do not take into consideration the transfer of risk and ownership benefits. Answer (c) is incorrect because GAAP does not have separate classification criteria for lessees and lessors. Lessors do, however, have separate criteria to establish the type of capital lease an arrangement is. Answer (d) is incorrect because the lessee does not recognize on the balance sheet an asset or liability in an operating lease arrangement.

7. Which of the following items would require a lessor to classify a lease as an operating lease?
   (a) The lease contains a bargain purchase option.
   (b) Ownership of the property is transferred to the lessee during the lease term.
   (c) The lease term is 80% of the estimated economic life of the leased property.
   (d) The collectibility of the minimum lease payments is highly uncertain.

   **Answer: (d)** The collectibility of the minimum lease payments is highly uncertain.

   If there is not reasonable assurance regarding the collectibility of the minimum lease payments, a lessor must classify the lease as an operating lease.

   Answers (a), (b), and (c) are all characteristics of a capital lease, only one of which must be met.

8. Which of the following items would require a lessee to classify a lease of equipment as a capital lease?
   (a) There are no important uncertainties about unreimbursable costs to be incurred by the lessor.
   (b) The lease does not contain a bargain purchase option.
   (c) The lease term is 80% of the estimated economic life of the leased property.
   (d) The present value of the minimum lease payments is 85% of the fair value of the leased property.

   **Answer: (c)** The lease term is 80% of the estimated economic life of the leased property.

   If the lease term is equal to 75% or more of the economic life of the leased property, a lessee is required to classify the lease as a capital lease. Because 80% exceeds 75%, the lessee would classify this lease as a capital lease.

   Answer (a) is incorrect because uncertainties about unreimbursable costs to be incurred by the lessor have no bearing on the classification from the lessee’s standpoint.

   Answer (b) is incorrect because the absence of a bargain purchase option does not require the lessee to classify the lease as a capital lease.

   Answer (d) is incorrect because the present value of the minimum lease payments must exceed 90% of the fair value of the leased property before the lessee is required to classify the lease as a capital lease.
Problem-Solving Strategies

Operating Leases vs. Capital Leases

The first step in determining how to account for a lease is to determine what type of lease it is. Exhibit 21-2 provides the criteria for determining whether a lease is an operating lease or a capital lease. These criteria are based on establishing which party, the lessee or the lessor, has the risk and benefits of ownership and should have the property listed as an asset on their financial records.

Accounting and Reporting by a Lessee

To illustrate the accounting for operating and capital leases, we will use the following information and change different assumptions:

1. User Company (U) leases a piece of equipment from Lessor Company (L) on January 1, 2011.
2. The lease term is for three years and is noncancelable. U is required to make equal payments of $30,000 on January 1, 2011, 2012, and 2013.
3. At the end of the lease the equipment is required to be returned to L, and U has not guaranteed any residual value.
4. The cost and fair value of the equipment to L is $100,000 and has an estimated economic life of five years.
5. U’s incremental borrowing cost is 11%.
6. L uses an implicit rate of 10% in the lease, and this rate is known by the lessee.

Operating Leases

To determine the type of lease, we must look at the four requirements for a capital lease:

1. Is ownership transferred at the end of the lease?
   The third assumption states that at the end of the lease the equipment is required to be returned to L; therefore, the answer to this question is no.

2. Is there a bargain purchase option?
   The assumptions do not state there is a bargain purchase agreement; therefore, the answer to this question is also no.

3. Is the lease term 75% or more of the economic life of the equipment?
   The lease term is for three years and the economic life of the equipment is five years. This represents 60% (3 ÷ 5 = 0.60 or 60%) of the economic life of the equipment; therefore, again the answer to this question is no.

4. Is the present value of the minimum lease payments equal to 90% or more of the fair value of the equipment?
   The present value is $82,066.11, which is 82% of the $100,000 fair value of the equipment; therefore, the answer to the fourth and final question is no.
Strategy: To determine the present value of the minimum lease payments (mlp) we need to determine the discount rate and the type of payment that is required for the lease. The discount rate used in this example is 10%. Why do we use 10% and not the 11% listed for the lessee’s (U) incremental borrowing rate? We use the 10% because that is the implicit rate used by the lessor (L) and is both known by U and is the lower of the two rates.

Because the lessee is required to make payments at the beginning of the lease, this is called an annuity due, and we use the present value interest factor for an annuity due. (Remember that the first payment is “DUE” at the beginning of the term in an annuity “due.”)

\[ PV_{\text{mlp}} = \text{mlp} \times \text{present value for an annuity due for three periods (three-year lease) and 10\%.} \]

\[ $82,066.11 = $30,000 \times 2.735537 \]

Based on the information above, this lease is an operating lease.

Operating leases are very easy to account for by the lessee because they are generally treated as a rental agreement. The journal entry to record the lease payment by the U on January 1, 2011, (and also on January 1, 2012, and 2013) would be: NOTE since the payment happens in advance, should the debit be to prepaid rent with an adjusting entry at 12/31?

Rent Expense \hspace{1cm} 30,000
Cash \hspace{1cm} 30,000

Capital Leases

Let’s change some of the assumptions that we used above to create a capital lease scenario:

1. User Company (U) leases a piece of equipment from Lessor Company (L) on January 1, 2011.
2. The lease term is for three years and is noncancelable. U is required to make equal payments of $36,556 on January 1 2011, 2012, and 2013.
3. At the end of the lease the equipment is required to be returned to L, and U has not guaranteed any residual value.
4. The cost and fair value of the equipment to L is $100,000 and has an estimated economic life of three years.
5. U’s incremental borrowing cost is 11%.
6. L uses an implicit rate of 10% in the lease, and this rate is known by the lessee.

To determine the type of lease, we must look at the four requirements for a capital lease:

1. Is ownership transferred at the end of the lease?
   The third assumption states that at the end of the lease the equipment is required to be returned to L; therefore, the answer to this question is no.
2. Is there a bargain purchase option?
   The assumptions do not state there is a bargain purchase agreement; therefore, the answer to this question is also no.

3. Is the lease term 75% or more of the economic life of the equipment?
   The lease term is for three years and the economic life of the equipment is three years. This represents 100% (3 ÷ 3 = 1.0 or 100%) of the economic life of the equipment; therefore, the answer to this question is yes.

4. Is the present value of the minimum lease payments equal to 90% or more of the fair value of the equipment?
   The present value is $100,000 ($36,556 × 2.735537), which is 100% of the $100,000 fair value of the equipment; therefore, the answer to the fourth and final question is yes.

Because the answer to at least one of these four questions is yes, this lease will be accounted for by the lessee (U) as a capital lease.

The initial recording of the capital lease at present value:

<table>
<thead>
<tr>
<th>Leased Equipment</th>
<th>Capital Lease Obligation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>100,000</td>
</tr>
<tr>
<td></td>
<td>100,000</td>
</tr>
</tbody>
</table>

Because leases are usually accounted for using the effective interest method, it will make the remaining journal entries easier if we calculated an effective interest table.

The easiest way to show what is happening and to keep track of what is going on is to use an amortization schedule. Below is the amortization schedule for the lease agreement for User Company

<table>
<thead>
<tr>
<th>Effective Interest Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>Date</td>
</tr>
<tr>
<td>1/01/11</td>
</tr>
<tr>
<td>1/01/11</td>
</tr>
<tr>
<td>1/01/12</td>
</tr>
</tbody>
</table>

An explanation of the table and where the numbers come from would probably be helpful.

The cash payment (Column B) is simple to explain. It is the amount that the lessee must pay every January 1 as the lease payment.

The interest expense (Column C) is the previous capital lease obligation (Column E) times the appropriate discount rate for the lease. For example, the interest expense for the entry on 1/01/12 was calculated by taking the capital lease obligation after the first payment on 1/01/11 ($63,444.11) times the discount rate (10%). Therefore, $63,444.11 × 10% = $6,344.41.

The principal (Column D) is the amount of the cash payment that is used to reduce the capital lease obligation. Not all of the cash payment made goes to reduce the capital lease obligation. A portion of the cash payment is interest expense. The amount of principal (Column D) is the amount of the cash payment that actually goes to reduce the capital lease obligation. This amount is determined by subtracting the amount of interest expense (Column C) from the amount of the cash payment (Column B). For example, the principal amount on 1/01/12 is $30,211.48. This was calculated by taking the cash payment on 1/01/12 of $36,555.89 and subtracting the interest expense on 1/01/12 of $6,344.41.
The amount of capital lease obligation (Column E) is equal to the previous amount of capital lease obligation minus the principal applied during this period. For example, the amount of capital lease obligation on 1/01/12 was $33,232.62. This was calculated by taking the capital lease obligation on 1/01/11 ($63,444.11) and subtracting the principal applied on 1/01/12 ($30,211.48).

**Strategy:** There are several things about this table that should be noted.
- Notice that the first payment on 1/01/11 has no interest expense. This is because the payment is made at the beginning of the period and no time has passed; therefore, no interest expense has accumulated.
- The cash payment is always the same and is established at the beginning of the lease.
- The interest expense column changes every period. This is because the balance of the capital lease obligation changes as each payment reduces the amount owed on the lease.
- The balance of the capital lease obligation moves toward zero as each payment is made.

**Strategy:** Another thing to note is that this table is very similar to the effective interest table that we calculated for bond amortization in Chapter 14.

Once the table has been completed, journal entries regarding lease payments and accrual of interest expense are easy. The lessee would have to accrue the interest expense on 12/31/07 for the payment that will be made on 1/1/12. The entry to record the accrual of interest on 12/31/07 would be:

<table>
<thead>
<tr>
<th>Description</th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interest Expense</td>
<td></td>
<td>6,344.41</td>
</tr>
<tr>
<td>Accrued Interest on Capital Lease</td>
<td></td>
<td>6,344.41</td>
</tr>
</tbody>
</table>

The entry to record the actual payment made on 1/1/12 would be:

<table>
<thead>
<tr>
<th>Description</th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accrued Interest on Capital Lease</td>
<td></td>
<td>6,344.41</td>
</tr>
<tr>
<td>Capital Lease Obligation</td>
<td></td>
<td>30,211.48</td>
</tr>
<tr>
<td>Cash</td>
<td></td>
<td>36,555.89</td>
</tr>
</tbody>
</table>

**Strategy:** Note that the payment for the principal in the table reduces (debits) the capital lease obligation.

In addition to the recognition of the accrued interest expense on 12/31, the lessee will also have to recognize depreciation on the leased equipment. This entry will be no different than depreciation entries for purchased equipment except the asset is depreciated over the term of the lease. If we assume that the lessee uses straight-line depreciation, the entry would be:

<table>
<thead>
<tr>
<th>Description</th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depreciation Expense</td>
<td></td>
<td>33,333.33</td>
</tr>
<tr>
<td>Accumulated Depreciation – Leased Equipment</td>
<td></td>
<td>33,333.33</td>
</tr>
</tbody>
</table>

**Bargain Purchase Option**

The inclusion of a bargain purchase agreement will increase the amount that is recorded for the leased asset and the capital lease obligation. The amount by which these two items are increased is the present value of the bargain purchase amount.

Let's assume that a company leases equipment for four years paying $25,000 per year, with the first payment due at the beginning of the lease, and a $5,000 bargain purchase at the end of the lease term. The first payment is due at the beginning of the lease. Because a bargain purchase implies that the value
of the equipment will be worth more than the bargain purchase amount, the proper accounting is to assume that the lessee will exercise the purchase option. Therefore, the lessee will be expected to pay $25,000 each year plus $5,000 at the end of the term. In addition to the above information, the lessee’s incremental rate of borrowing rate is 8%. The lessor’s implicit rate of interest in the equipment is 7.5%, although this rate is unknown to the lessee. What value should the leased equipment be recorded on the lessee’s books?

The leased equipment is equal to the present value of the minimum lease payments plus the present value of the bargain purchase agreement. Because the lessee does not know the lessor’s implied rate, the lessee must use their incremental rate of 8% in the calculations. Based on this, the leased asset would be valued at:

1. Present value of minimum lease payments, discounted at 8% for four years (because the payments are due at the beginning of the lease term, we use the present value interest factor for an annuity due (Table 5 on page M40 of the textbook)):
   
   \[ 25,000 \times 3.577097 = 89,427.43 \]

2. Present value of the bargain purchase option (we use present value of $1 from Table 3 on page M38 of the textbook):

   \[ 5,000 \times 0.735030 = 3,675.15 \]

Therefore, the leased asset is valued at $93,102.58 ($89,427.43 + $3,675.15).

The accounting for the lessee is the same as without the bargain purchase option, except for two items:

1. Depreciation will be calculated over the economic life instead of the lease term because the lessee will acquire and account for the equipment over the equipment’s life; and
2. Once the final lease payment is made there will still be a balance in the capital lease obligation equal to the bargain purchase option.

**Accounting and Reporting by a Lessor**

In order to classify a lease as a capital lease, a lessor must meet at least one of the same four criteria that a lessee must meet plus the lessor must also meet two additional ones: 1) the collectibility of the minimum lease payments must be reasonably assured; and 2) there are no important uncertainties with regard to unreimbursable costs that are yet to be incurred by the lessor.

**Operating Leases**

If none of the four original criteria are met, or both of the additional lessor criteria are not met, the lessor will classify the lease as an operating lease. In this case, the lessor will keep the leased asset on their records and record depreciation expense. Any prepayments made by the lessee will be treated as a liability (unearned rent) and recognized as time passes. See note above regarding receipt at 1/1 being recorded as unearned rental revenue.

Using our previous example, when the lessee makes the first lease payment of $30,000, the lessor would record it as:

\[
\begin{array}{ccc}
\text{Cash} & \text{30,000} \\
\text{Rental Revenue} & \text{30,000} \\
\end{array}
\]
Capital Leases

For a lessee, a lease is either an operating lease or a capital lease. For a lessor, a lease is also either an operating lease or a capital lease, but capital leases for lessors are further classified as either a direct financing lease or a sales-type lease.

Direct Financing Leases

In a direct financing lease, the lessor is usually a financial institution and “sells” the asset at its fair value to the lessee. In this situation there is no dealer’s profit on the transaction. The lessor will record the receivable for the lease at the cost or carrying value of the leased property. This receivable is equal to the present value of the future lease payments. The gross receivable of the lessor consists of two items: 1) the undiscounted minimum lease payments; plus 2) any unguaranteed residual.

To calculate the annual lease payments in a direct financing lease, the lessor would divide the present value of the cost of the property by the present value of an annuity for the length of the lease.

For example, if we revisit the capital lease example above for the lessee, the lease payments ($36,555.89) were determined by the lessor by dividing the present value of the cost of the property ($100,000) by the present value of an annuity due for three periods at 10% interest (2.735537).

To record this lease, the lessor would record (debit) the undiscounted annual payments ($109,667.67 = 3 × $36,555.89) expected as a lease receivable. In other words, this is the actual amount the lessor expects to receive from the lessee over the period of the lease. The credit would be for the cost of the equipment ($100,000) with the difference between the cost and receivable as unearned interest revenue ($9,667.67 = $109,667.67 − $100,000).

<table>
<thead>
<tr>
<th>Lease Receivable</th>
<th>109,667.67</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>100,000.00</td>
</tr>
<tr>
<td>Unearned Interest Revenue</td>
<td>9,667.67</td>
</tr>
</tbody>
</table>

Like with the accounting for the lessee, the easiest way to determine the entries for the lessor is through the use of an effective interest table:

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Lease Payment Received</td>
<td>Interest Revenue</td>
<td>Net investment recovered</td>
<td>Lease receivable</td>
<td>Unearned interest revenue</td>
<td>Net investment</td>
</tr>
<tr>
<td>1/1/2011</td>
<td>$36,555.89</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$73,111.78</td>
<td>$9,667.67</td>
<td>$100,000.00</td>
</tr>
<tr>
<td>1/1/2012</td>
<td>$36,555.89</td>
<td>$6,344.41</td>
<td>$30,211.48</td>
<td>$36,555.89</td>
<td>$3,323.26</td>
<td>$33,232.63</td>
</tr>
<tr>
<td>1/1/2013</td>
<td>$36,555.89</td>
<td>$3,323.26</td>
<td>$33,232.63</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
</tr>
</tbody>
</table>

An explanation of the table and where the numbers come from would probably be helpful.

The lease payment received (Column B) is simple to explain. It is the amount that the lessee must pay every January 1 as the lease payment.
The interest revenue (Column C) is the amount of interest revenue earned by the lessor during the period. It is determined by multiplying the lessor’s implied interest rate by the net investment in the previous period (Column G). For example, the interest revenue for the entry on 1/01/12 was calculated by taking the net investment after the first payment on 1/01/11 ($63,444.11) times the discount rate (10%). Therefore, interest revenue for 2011 is $6,344.41 ($63,444.11 × 10%).

The net investment recovered (Column D) is the amount of the cash payment received that reduces the net investment. Not all of the cash payment received goes to reduce the net investment. A portion of the cash payment is interest revenue as calculated above. This net investment recovered is determined by subtracting the amount of interest revenue (Column C) from the amount of the cash payment (Column B). For example, the net investment recovered on 1/01/12 is $30,211.48. This was calculated by taking the cash payment on 1/01/12 of $36,555.89 and subtracting the interest revenue on 1/01/12 of $6,344.41.

The amount of lease receivable (Column E) is equal to the amount of lease payments (undiscounted) expected to be paid by the lessee. This amount is decreased by the actual amount of payment received from the lessee. For example, the amount of lease receivable on 1/01/12 was $36,555.89. This was calculated by taking the lease receivable on 1/01/11 ($73,111.78) and subtracting the lease payment made by the lessee on 1/01/12 ($36,555.89).

Unearned interest revenue (Column F) represents the amount of interest that has yet to be earned from the lessee’s payments. It is initially calculated by subtracting the undiscounted lease payments less the cost of the equipment. In our example, the total undiscounted lease payments at the beginning of the lease were $109,667.67. From this we subtracted the cost of the equipment of $100,000 to get an unearned interest revenue figure of $9,667.67. After lease payments have been made, it is best to determine the amount of unearned interest revenue by subtracting the amount of interest earned in the period (Column C) from the previous unearned interest revenue. For example, to determine the 1/01/12 balance of $3,323.26, we subtracted the interest earned in the period ($6,344.41) from the previous balance of unearned interest revenue ($9,667.67).

Net investment (Column G) represents the amount of unrecovered cost of the leased property. To calculate the net investment, we subtract the amount of net investment recovered in the period (Column D) from the previous net investment balance. For example on 1/01/12, we subtracted $30,211.48 (Column D) from $63,444.11 (previous balance in Column G) to get a new balance of $33,232.63.

The entry made on December 31, 2011, to record the interest earned in 2011 (but paid on 1/1/08) would be:

\[
\begin{align*}
\text{Unearned Interest Revenue} & \quad 6,344.41 \\
\text{Interest Revenue} & \quad 6,344.41
\end{align*}
\]

When the payment is made on January 1, the entry would be:

\[
\begin{align*}
\text{Cash} & \quad 36,555.89 \\
\text{Lease Receivable} & \quad 36,555.89
\end{align*}
\]

**Sales-Type Leases**

In a sales-type lease, like in a direct financing lease, a lessor also “sells” an asset to the lessee. However, in a sales-type lease the asset is sold for more than its cost, resulting in gross profit for the lessor. The actual gross profit is determined by the difference between the cost of the asset leased and the present value of the minimum lease payments.
For a sales-type lease, the lessor records both the sales revenue and the cost of goods sold. The sales revenue is recorded at the present value of the minimum lease payments. Cost of goods sold is usually recorded at the assigned inventory cost less the present value of the unguaranteed residual value of the leased asset accruing to the lessor. The present value of any guaranteed residual value is included in sales revenue, rather than subtracted from the cost of goods sold.

Lease Receivable XXX.XX
   Sales Revenue XXX.XX
   Unearned Interest Revenue XXX.XX

In addition, an entry is required to remove the asset from inventory:

Cost of Goods Sold XXX.XX
   Merchandise Inventory XXX.XX

The journal entries for the collection of rent and recognition of earned interest under a sales-type lease are the same as those for a direct financing lease.
Test Your Knowledge

1. On January 1, 2011, the Bow Company leased manufacturing equipment from the Stern Company. The following information about this lease is available:

   Noncancelable term of the lease: 10 years, with no bargain purchase option
   Economic life of equipment: 15 years
   Fair value (cost to the lessor) of the equipment: $375,000
   Lease payments, due at the end of each year: $55,000
   Bow Company's incremental borrowing rate (The implicit rate is not known by Bow): 12%
   Bow Company's depreciation method: straight-line
   Present value factor for an ordinary annuity of 10 years at 12%: 5.650223
   Present value factor for a single sum at the end of 10 years at 12%: 0.321973

(a) Based on the above information:

   (1) Classify the lease from the lessee's viewpoint.

   (2) Using a general journal format, prepare the Bow Company's journal entry for the lease for 2011.

(b) Assume the same facts as above, except that the amount of the yearly lease payments is $65,000 and the economic life of the equipment is 10 years.

   (1) Classify the lease from the lessee's viewpoint.
(2) Using a general journal format, prepare the Bow Company's journal entries for the lease for 2011.

2. Use the same information as in part (b) of Problem 1 above. Additional information is given below.

The collectibility of the lease payments is reasonably assured.
Initial direct costs are insignificant and assumed to be zero.
There are no important uncertainties involved in the lease.

(a) Complete the following:

(1) Classify the lease from the lessor's viewpoint.

(2) Using a general journal format, prepare the Stern Company's journal entries for the lease for 2011.
(b) Assume the same facts as above, except that the cost of the equipment to the Stern Company was $300,000 while the fair value was $375,000.

(1) Classify the lease from the lessor's viewpoint.

(2) Using a general journal format, prepare the Stern Company's initial entry to record the lease.

3. Use the original information in Problem 1 above, with the following changes:

   The lease contains a bargain purchase option. Bow is expected to pay $6,000 at the end of 10 years to purchase the equipment.

   The residual value of the equipment at the end of 15 years is expected to be $5,000.

   Stern paid incremental direct costs of $3,000 and other direct costs of $2,000 to complete the lease transaction.

   (a) Classify the lease from the lessee's standpoint.
(b) Using a general journal format, prepare the lessee’s entries to record the lease on January 1 and to record depreciation at the end of the year.

(c) Using a general journal format, prepare the lessor’s entry to record the initial direct costs.
Answers to Test Your Knowledge

1.  (a)  (1) Operating Lease

   The lease does not transfer ownership. There is no bargain purchase option. The lease term is less than 75% of the economic life of the equipment. The present value of the lease payments ($55,000 × 5.650223 = $310,762.27) is less than 90% of the equipment's fair value (0.90 × $375,000 = $337,500).

   (2)
   Rent Expense  55,000.00
   Cash  55,000.00

   (b)  (1) Capital Lease

   The lease term is equal to 100% of the economic life of the equipment. Furthermore, the present value of the minimum lease payments ($65,000 × 5.650223 = $367,264.50) is greater than 90% of the fair value of the leased property.

   (2)
   Leased Equipment  367,264.50
   Lease Obligation  367,264.50
   Interest Expense  44,071.74
   Lease Obligation  20,928.26
   Cash  65,000.00

   To record payment of the 2011 rental and to recognize interest expense on the capital lease for 2011 (12% × $367,264.50).

   Depreciation Expense Leased Equipment  36,726.45
   Accumulated Depreciation - Leased Equipment  36,726.45

   To recognize depreciation of the leased equipment for 2011 ($367,264.50 ÷ 10).

2.  (a)  (1) Direct Financing Lease

   The lease term is equal to 100% of the economic life of the equipment. The present value of the minimum lease payments is greater than 90% of the fair value of the equipment. The collectibility of the lease payments is reasonably assured. There are no important uncertainties. There is no dealer's profit or loss (the fair value of the equipment = the lessor's cost).
(2)

<table>
<thead>
<tr>
<th>Account</th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lease Receivable</td>
<td>650,000.00</td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td></td>
<td>375,000.00</td>
</tr>
<tr>
<td>Unearned Interest Revenue</td>
<td></td>
<td>275,000.00</td>
</tr>
<tr>
<td>Cash</td>
<td>65,000.00</td>
<td></td>
</tr>
<tr>
<td>Lease Receivable</td>
<td></td>
<td>65,000.00</td>
</tr>
<tr>
<td>Unearned Interest Revenue</td>
<td></td>
<td>45,000.00</td>
</tr>
<tr>
<td>Interest Revenue</td>
<td></td>
<td>45,000.00</td>
</tr>
</tbody>
</table>

To record interest revenue on the lease \[12\% \times (\$650,000 - \$275,000)\].

(b) (1) Sales-Type Lease

Dealer’s profit (fair value – cost = \$375,000.00 – \$300,000 = \$75,000.00) is present. Other conditions are the same as given for part (a).

(2)

<table>
<thead>
<tr>
<th>Account</th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lease Receivable</td>
<td>650,000.00</td>
<td></td>
</tr>
<tr>
<td>Sales Revenue</td>
<td></td>
<td>367,264.50</td>
</tr>
<tr>
<td>Unearned Interest Revenue</td>
<td></td>
<td>282,735.50</td>
</tr>
<tr>
<td>Cost of Goods Sold</td>
<td></td>
<td>300,000.00</td>
</tr>
<tr>
<td>Merchandise Inventory</td>
<td></td>
<td>300,000.00</td>
</tr>
</tbody>
</table>

3. (a) Capital Lease

The lease contains a bargain purchase option.

(b)

<table>
<thead>
<tr>
<th>Account</th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leased Equipment</td>
<td>312,694.11</td>
<td></td>
</tr>
<tr>
<td>Lease Obligation</td>
<td></td>
<td>312,694.11</td>
</tr>
</tbody>
</table>

To record the lease on January 1 \[\$55,000 \times 5.650223 + \$6,000 \times 0.321973\]

<table>
<thead>
<tr>
<th>Account</th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depreciation Expense</td>
<td>20,512.94</td>
<td></td>
</tr>
<tr>
<td>Accumulated Depreciation</td>
<td></td>
<td>20,512.94</td>
</tr>
</tbody>
</table>

To record depreciation of the leased equipment for 2011: \[\left(\$312,694.11 - \$5,000\right) / 15\].

(c) Because Fair Value = Cost, this is a direct financing lease to the lessor.

<table>
<thead>
<tr>
<th>Account</th>
<th>Debit</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unearned Interest: Leases</td>
<td>5,000.00</td>
<td></td>
</tr>
<tr>
<td>Cash, etc.</td>
<td></td>
<td>5,000.00</td>
</tr>
</tbody>
</table>

To record the initial direct costs of the lease.