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Chapter 2
Property Acquisition and Cost Recovery

SOLUTIONS MANUAL

Discussion Questions

1. [LO 1] Explain the reasoning why the tax laws require the cost of certain assets to be capitalized and recovered over time rather than immediately expensed.

   Assets with an expected life of more than one year must be capitalized and recovered through depreciation, amortization, or depletion deductions—depending on the type of underlying asset. The policy attempts to match the revenues and expenses for these assets because the assets have a useful life of more than one year.

2. [LO 1] Explain the differences and similarities between personal property, real property, intangible property, and natural resources. Also, provide an example of each type of asset.

   Personal property, real property, and natural resources are all tangible property than can be seen and touched. Natural resources are assets that occur naturally (e.g. timber or coal). Real property is land and all property that is attached to land (e.g. buildings). Personal property is all tangible property that is not a natural resource or real property. Intangibles are all intellectual property rights (e.g. patents and copyrights) and any other value not assigned as a tangible asset during a purchase (e.g. goodwill). Each of these has an expected useful life of more than one year.

Asset Type	**Examples**
Personal property	Automobiles, equipment, furniture, and machinery
Real property	Land and items attached to land such as buildings (warehouse, office building, and residential dwellings)
Intangibles	Start-up and organizational costs, copyrights, patents, covenants not to compete and goodwill
Natural Resources	Commodities such as oil, coal, copper, timber, and gold

3. [LO 1] Explain the similarities and dissimilarities between depreciation, amortization, and depletion. Describe the cost recovery method used for each of the four asset types (personal property, real property, intangible property, and natural resources).

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There are three types of cost recovery: depreciation, amortization, and depletion. Each is similar in that they recover the cost basis of long-lived assets. Depreciation for real property, amortization, and cost depletion are on a straight-line basis. (Taxpayers may elect straight-line on tangible personal property as well.) The primary difference is that they are used for property with unique characteristics. Depreciation of tangible personal property is done on an accelerated (most often double-declining balance) method. Percentage depletion assigns a statutory rate that may recover more than the original cost of the asset.

Asset Type	**Cost Recovery Type, Characteristics**
Personal property	MACRS depreciation, characterized by double declining balance method (although 150% DB or straight-line may be elected), half-year convention (although mid-quarter may be required), and shorter recovery periods.
Real property	MACRS depreciation, characterized by straight-line method, mid-month convention, and longer recovery periods.
Intangibles	Amortization, characterized by straight-line method, full-month convention, various recovery periods (usually not based on actual life) depending on intangible type.
Natural Resources	Depletion (cost or percentage), cost depletion allocates the cost of a natural resource based on resource estimates (tons, ounces, barrels, etc.), straight-line method, based on actual extraction quantities, percentage depletion allocates a statutory expense (depending on resource type) based on gross income, but limited to 50% (100% for oil and gas property) of net income, and is the only cost recovery method that allows a taxpayer to recover more than the original basis of an asset.

4. [LO 1] Is an asset's initial or cost basis simply its purchase price? Explain.

The initial basis of any purchased business asset is historical cost. This is generally the purchase price, plus any other expenses (e.g. sales tax and installation costs) incurred to get the asset in working condition. This does not include costs, which constitute a betterment, restoration, or adaptation to a new or different use for an asset such as a building addition.

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5. [LO 1] Compare and contrast the basis of property acquired via purchase, conversion from personal use to business or rental use, a nontaxable exchange, gift, and inheritance.

The basis of purchased assets is historical cost. The basis rules for other acquisitions depend on whether the transaction was taxable or not. For taxable transactions there is usually a step-up in basis to fair market value. For non-taxable transactions, there is usually a carryover basis. Conversion of assets from personal use gets the lesser of the two values. The specific rules are as follows:

Acquisition Type	**Basis Rules**
Purchase	The initial basis is historical cost plus all costs incurred to get the asset to its destination and in working order.
Conversion from personal use	The depreciable basis would be the lesser of the fair market value of the asset on the date of conversion or the adjusted basis of the transferor.
Non-taxable exchange	The basis is a carryover basis of the transferor since there is no recognition of gain or loss on the transfer (not a taxable transaction).
Gift	The basis is generally a carryover basis, because these transactions usually aren't taxable. If gift tax is paid, the basis may be increased by a portion of the gift tax paid.
Inheritance	The basis is the fair market value on the date of death or the alternate valuation date six months later (if elected by the estate). The fair market value is used because the transfer arises from a taxable transaction.

6. [LO 1] Explain why the expenses incurred to get an asset in place and operable should be included in the asset's basis.

Additional expenses, including sales tax, shipping, installation costs, and the like are capitalized into an asset's basis because all costs required to place an asset into service are required to be included into its basis. That is, without these costs, the taxpayer would not be able to place in service or use the asset in a business.

7. [LO 1] Graber Corporation runs a long-haul trucking business. Graber incurs the following expenses: replacement tires, oil changes, and a transmission overhaul. Which of these expenditures may be deducted currently and which must be capitalized? Explain.

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An expense that results in a betterment, restoration, or adaptation for a new or different use for the property will be capitalized as a new asset—depreciated over the same MACRS recovery period of the original asset rather than the remaining life of the existing asset. Alternatively, expenses that constitute routine maintenance or meet the other safe harbor rules should be expensed immediately. An engine overhaul is likely to be a capitalized expense as a restoration. Tires and oil changes are likely to be expensed currently. However, all expenses are subject to a facts and circumstances test.

8. [LO 2] MACRS depreciation requires the use of a recovery period, method, and convention to depreciate tangible personal property assets. Briefly explain why each is important to the calculation.

   MACRS depreciation calculations are straightforward once you know the recovery period (life), method, and convention for the asset. Recovery period is the statutory life or the period over which a taxpayer will allocate the depreciation expense. Profitable taxpayers prefer the recovery period to be as short as possible so that they may recoup the basis as quickly as possible. The method is generally the double-declining (200% DB) method. However, taxpayers may elect to use either the 150% DB method (useful if they are subject to AMT, to avoid calculating both regular and AMT depreciation) or straight-line method (to lengthen depreciation expense for taxpayers in an expiring NOL situation). The convention determines how much depreciation is taken in both the year of acquisition and the year of disposition. The half-year convention is used to simplify calculating depreciation based on the number of days an asset was owned during the year, but the mid-quarter convention is required if more than 40% of the tangible personal property placed in service during the year was placed in service during the fourth quarter.

9. [LO 2] Can a taxpayer with very little current year income choose to not claim any depreciation expense for the current year and thus save depreciation deductions for the future when the taxpayer expects to be more profitable?

   Taxpayers must reduce the basis of depreciable property by the depreciation allowed or allowable (§1011). Therefore, taxpayers must reduce their basis whether or not they claim the depreciation expense. As a result, taxpayers are better off taking the depreciation expense even if it creates a net operating loss or is taxed at a relatively low marginal tax rate.

10. [LO 2] [Planning] What depreciation methods are available for tangible personal property? Explain the characteristics of a business likely to adopt each method.

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Taxpayers may elect to use the 200% DB, 150% DB, or the straight-line method for tangible personal property. It is important to note that all three methods allow the same depreciation expense over the same recovery period. Nevertheless, profitable taxpayers will elect to use the 200% DB method because it minimizes the after-tax cost of the asset by maximizing the present value of the depreciation expenses—through accelerating the depreciation expenses. Taxpayers traditionally subject to the AMT may elect to use the 150% DB method because it saves them the administrative inconvenience of calculating depreciation under two separate methods. Taxpayers may elect to use the straight-line method if they want to slow down depreciation expense—which is counterintuitive but often occurs for companies that regularly incur NOLs and would like to preserve these losses for a time when they expect profitability or will be acquired by another taxpayer that may be able to utilize the NOLs.

11. [LO 2] If a business places several different assets in service during the year, must it use the same depreciation method for all assets? If not, what restrictions apply to the business's choices of depreciation methods?

    Taxpayers may generally choose the depreciation method used for assets placed in service. The MACRS general depreciation system generally uses the 200% DB method for tangible personal property and the straight line method for real property. However, taxpayers may elect either the 150% DB or straight-line method for tangible personal property on an asset class by asset class basis (§168(g)(7)). For example, if a taxpayer places in service a computer (5-year property), a delivery truck (5-year property), and machinery (7-year property) an election could be made to use the straight-line method for all 5-year property and continue to use the 200% DB method for the 7-year property. Alternatively, an election could be made to use the straight line method for only the 7-year property or all tangible personal property placed in service during the year. Once made, the method choice is an accounting method election and is irrevocable.

12. [LO 2] Describe how you would determine the MACRS recovery period for an asset if you did not already know it.

    Rev. Proc. 87-56 is the definitive authority for determining the recovery period of all assets under MACRS. This guidance divides assets into asset classes (groups of similar property) upon which the recovery period is determined as the midpoint of the asset depreciation range (ADR) (the system developed by the IRS for pre-ACRS property). However, the "87" in the citation indicates that the Rev. Proc. was issued in 1987. As a result, taxpayers, or their advisors, must verify that the guidance is still valid. For example, qualified restaurant property, qualified leasehold improvement property, and qualified Alaska natural gas pipeline are examples of assets to which Congress has given preferential recovery periods since 1987.

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13. [LO 2] {Research} Compare and contrast the recovery periods used by MACRS and those used under generally accepted accounting principles (GAAP).

    Rev. Proc. 87-56 is the definitive authority for determining the recovery period of all assets under MACRS. However, Congress in §168 has recently modified the recovery period of some assets. Financial accounting rules are vague at best. FASB Concept Statement 5 indicates that assets should be recognized over the accounting period of their life. FASB Concept Statement 6 defines an asset as a probable future benefit. ASC 360-10-35 indicates that the cost should be spread over the assets useful life in a systematic and rational manner. In addition, it requires companies, through financial statement disclosure, to disclose to investors current depreciation expense, depreciation method, and recovery period used for assets. As a result, companies could use any rational recovery period for financial accounting purposes.

14. [LO 2] What are the two depreciation conventions that apply to tangible personal property under MACRS? Explain why Congress provides two methods.

    The two depreciation conventions that apply to tangible personal property under MACRS are the half-year convention and the mid-quarter convention. MACRS uses a simplifying half-year convention. The half-year convention allows one-half of a full year's depreciation in the year the asset is placed in service, regardless of when it was actually placed in service. For example, when the half-year convention applies, an asset placed in service on either January 30 or December 17 is treated as though it was placed in service on July 1, which is the middle of the calendar year. The original ACRS system included only the half-year convention; however, Congress felt that some taxpayers were abusing the system by purposely acquiring assets at the end of the year that they otherwise would have acquired at the beginning of the next taxable year (allowable tax planning under ACRS). In 1987, as part of MACRS, the mid-quarter convention was implemented. The mid-quarter convention treats assets as though they were placed in service during the middle of the quarter in which the business actually placed the asset into service. For example, when the mid-quarter convention applies, if a business places an asset in service on December 1 (in the fourth quarter) it must treat the asset as though it was placed in service on November 15, which is the middle of the fourth quarter.

15. [LO 2] A business buys two identical tangible personal property assets for the same identical price. It buys one at the beginning of the year and one at the end of year. Under what conditions would the taxpayer's depreciation on each asset be exactly the same? Under what conditions would it be different?

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MACRS has two conventions: half-year and mid-quarter conventions. The half-year convention is the general rule and simplifies the depreciation process by allowing one half year of depreciation taken on all assets placed in service during the year. The mid-quarter convention is required if more than 40% of a taxpayer's tangible personal property is placed in service during the fourth quarter of the year. The depreciation on the two assets would be the same if the taxpayer was using the half-year convention—which would apply if the taxpayer purchased and placed in service other assets during the year so that the 40% placed in service fourth quarter test is failed. The depreciation on the two assets would be different if the two assets were the only assets placed in service during the year—so that 50% was placed in service during the 4th quarter and the mid-quarter convention was required to be used.

16. [LO 2] AAA, Inc., acquired a machine in year 1. In May of year 3, it sold the asset. Can AAA find its year 3 depreciation percentage for the machine on the MACRS table? If not, what adjustment must AAA make to its full year depreciation percentage to determine its year 3 depreciation?

    The applicable depreciation convention applies in the year of disposal as well as the year of acquisition. The MACRS tables cannot anticipate an asset's disposal and therefore assume the asset was used in a trade or business for the entire year. As a result, AAA must apply the applicable convention to the table percentage upon disposal to arrive at the correct percentage. If the half-year convention applies, then multiplying the MARCRS table full year depreciation by 50% (one-half of a year's depreciation) will help you arrive at the correct percentage. Alternatively, if the mid-quarter convention applies, the asset is treated as though it is sold in the middle of the quarter of which it was actually sold. The simplest process for calculating mid-quarter convention depreciation for the year of sale is to use the following four step approach: (1) determine the amount of depreciation expense for the asset as if the asset were held for the entire year; (2) subtract one-half of a quarter from the quarter in which the asset was sold (if sold in 3rd quarter subtract .5 from 3 to get 2.5); (3) divide the outcome from Step 2 by 4 (quarters) (2.5/4) this is the fraction of the full year's depreciation the taxpayer is eligible to deduct, and (4) multiply the Step (3) outcome by the full depreciation determined in Step (1).

17. [LO 2] There are two recovery period classifications for real property. What reasons might Congress have to allow residential real estate a shorter recovery period than nonresidential real property?

    Non-residential property currently has a recovery period of 39 years while residential property has a recovery period of 27.5 years. Non-residential has longer lives because the construction methods are more substantial which results in longer lives. For example, non-residential often uses steel frame with concrete and/or block

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floors and walls. In contrast, residential uses balloon construction using 2x4 timbers for structure. The non-residential components often are built with more substantial materials as well. Some argue that residential property receives higher use percentages and is subject to more wear and tear.

18. [LO 2] Discuss why Congress has instructed taxpayers that real property be depreciated using the mid-month convention as opposed to the half-year or mid-quarter conventions used for tangible personal property.

    The purpose of MACRS conventions is to simplify the calculation of depreciation. Real property is characterized by higher basis and less frequent acquisition than tangible personal property. These two reasons suggest that mid-month convention approximates actual wear and tear on real property better than the half-year and mid-quarter conventions would. For example, if a building was purchased in January or December it would be entitled to 11.5 or .5 months, respectively, of depreciation under the mid-month convention--which is close to the actual time the asset was placed in service. This contrasts with the half-year convention that would allow 6 months or the mid-quarter convention that would allow 10.5 or 1.5 months, respectively, of depreciation.

19. [LO 2] {Research} If a taxpayer has owned a building for 10 years and decides that it should make significant improvements to the building, what is the recovery period for the improvements?

    MACRS generally classifies additions to property as a new asset placed in service subject to the same depreciable life as the original asset. For example, if a $2,000,000 addition is made to an office building (non-residential property) then the asset's basis is $2,000,000 and its recovery period is 39 years. However, if the improvements are in the form of minor repairs that simply maintain the integrity of the structure they would be expensed. A third alternative is that all or a portion of the improvements could represent non-structural components (such as leasehold improvements) of the non-residential property and, therefore, qualify as tangible personal property which is generally subject to accelerated methods and shorter recovery periods.

20. [LO 2] Compare and contrast the differences between computing depreciation expense for tangible personal property and depreciation expense for real property under both the regular tax and alternative tax systems.

    MACRS allows the 200% DB method to be used whereas AMT requires the 150% DB method to be used for tangible personal property. Both MACRS and AMT require the straight-line method for real property. Therefore, the AMT adjustment for tangible personal property is the difference between depreciation calculated

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under the 200% DB and the 150% DB methods. There is no AMT adjustment required for real property. For taxpayers that elect either the 150% DB or straight-line method for tangible personal property there is no AMT adjustment required with respect to that property.

21. [LO 3] Discuss why a small business might be able to deduct a greater percentage of the assets it places in service during the year than a larger business.

The tax law allows for expensing of tangible personal property for certain businesses. The deduction is phased out for taxpayers that place more than a certain amount of property in service during the year. Since most large businesses place more than the limit of property in service, they are ineligible for the §179 deduction.

22. [LO 3] Explain the two limitations placed on the §179 deduction. How are they similar? How are they different?

The §179 deduction has two limitations: the property placed in service and the taxable income limitation. The property placed in service limitation phases out the maximum deduction amount dollar for dollar for property placed in service over the $2,010,000 limit (limits are indexed for inflation beginning in 2016). After being limited by the property placed in service limitation, the §179 deduction is further limited to the taxpayer's taxable income after regular MACRS depreciation but before deducting any §179 expense. The two limitations are similar in that they both limit the §179 deduction. However, the first limitation was designed to limit the amount of property that can be expensed as a means of defining small businesses while the second limitation prevents the expense from creating a loss for the taxable year.

23. [LO 3] Compare and contrast the types of businesses that would benefit from and those that would not benefit from the §179 expense.

The availability of the §179 expense is limited by the property placed in service and income limitations. The property placed in service limitation phases out the §179 expense ($500,000) dollar for dollar for tangible personal property placed in service over the $2,010,000 threshold. (These amounts are indexed for inflation beginning in 2016.) Thus, firms that place $2,510,000 of property in service during the year are ineligible to deduct any §179 expense. As a result, firms that place in service smaller amounts of property are eligible for the expensing election while those that place large amounts of property in service are ineligible. The second limitation is that firms can only currently expense assets up to net income (before the §179 expense, but after the regular MACRS depreciation expense). As a result, profitable firms are eligible for the §179 expense while firms in a loss position are currently ineligible but may carry the amount forward. Consequently, profitable

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firms that place a relatively small amount of property in service are able to elect the §179 expense. In contrast, firms that place in service too much property or are unprofitable are unable to currently expense property under § 179.

24. [LO 3] What strategies will help a business maximize its current depreciation deductions (including §179)? Why might a taxpayer choose not to maximize its current depreciation deductions?

    There are several planning strategies that will help a taxpayer maximize its current depreciation deductions. For example, if a taxpayer is close to exceeding the 4th quarter placed in service limitation, which would require the mid-quarter convention resulting in less depreciation, the taxpayer could put off purchases to the beginning of the next taxable year. A taxpayer can elect to expense under §179 assets that are 7-year assets rather than 5-year assets because the first year depreciation percentage is lower for 7-year assets (14.29% versus 20%). As another example, a taxpayer otherwise eligible for §179 expensing can elect to expense assets placed in service during the 4th quarter because expensed assets are not included in the mid-quarter test.

25. [LO 3] Why might a business elect only the §179 expense it can deduct in the current year rather than claiming the full amount available?

    Businesses can elect to expense §179 currently, and carry over the expense to future years if they meet the placed- in- service limitation but do not have sufficient income to expense the assets currently. However, a business may elect to expense only the amount it can currently deduct if it believes that maximizes the present value of current and future depreciation expenses. This may occur because carryovers of §179 expense are subject to future placed- in-service and income limitations. For example, a business could elect the expense in the current year (which reduces current and future MACRS depreciation expenses) and not be able to deduct the expense under §179 because the business is also limited in future years—so businesses that are generally limited would be wise not to make the election. Additionally, if taxpayers typically elect the maximum §179 expense annually, the amount would be suspended anyway.

26. [LO3] Describe assets that are considered to be listed property. Why do you think the Internal Revenue Service requires them to be "listed"?

    Listed property comprises business assets that taxpayers may wish to use for both business and personal purposes. For example, automobiles, planes, boats, recreation vehicles, and computer equipment and peripherals are considered to be listed property. The IRS wants to track both the personal and business use of these assets to limit depreciation to the business use portion. Additionally, if the business

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use portion dips below 50%, then taxpayers must use the straight-line method and potentially recapture excess depreciation deductions.

27. [LO 3] Are taxpayers allowed to claim depreciation expense on assets they use for both business and personal purposes? What are the tax consequences if the business use drops from above 50 percent in one year to below 50 percent in the next?

    Yes, taxpayers may depreciate mixed use assets (those used for both business and personal use). However, the otherwise allowable depreciation is reduced by the non-business use, so that depreciation is only allowed to the extent of the business use. If the business use falls below 50% in any subsequent year, then the taxpayer must re-compute depreciation for all prior years as if it had been using the straight line method over the ADS recovery period. If the prior depreciation expenses exceed both the prior depreciation expenses and the current year expense then the taxpayer must recapture the difference into income during the current year.

28. [LO 3] Discuss why Congress limits the amount of depreciation expense businesses may claim on certain automobiles.

    Automobiles have historically been the most abused, as well as expensive, type of listed property. To prevent subsidizing business owners' automobiles through deductible depreciation expenses, Congress decided to place a maximum allowable depreciation amount on them. One exception to this rule is bonus depreciation. Congress allows an additional expense of $8,000 in the first year for automobiles placed into service during 2016. However, one important exception from the luxury auto rules are that vehicles weighing more than 6,000 pounds are not subject to the limit and are also allowed to expense up to $25,000 during the first year under §179.

29. [LO 3] Compare and contrast how a Land Rover SUV and a Mercedes Benz sedan are treated under the luxury auto rules. Also include a discussion of the similarities and differences in available §179 expense.

    A Mercedes Benz sedan is less than 6,000 pounds and qualifies as a luxury automobile. This limits depreciation to the restrictive luxury auto amounts. In contrast, the Land Rover is more than 6,000 pounds and escapes the luxury auto rules. This is advantageous for two reasons: (1) the buyer may currently expense $25,000 under §179 and (2) the property is not subject to the luxury auto limits.

30. [LO 4] What is a §197 intangible? How do taxpayers recover the costs of these intangibles? How do taxpayers recover the cost of a §197 intangible that expires (such as a covenant not to compete)?

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A §197 intangible is a purchased intangible including: goodwill, going concern value, workforce in place, patents, customer lists, and similar assets. §197 intangibles are amortized over 180 months (15 years) using the straight-line method, and the full-month convention. To prevent game- playing among the basis allocations of various §197 intangibles acquired together, no loss is allowed on a §197 intangible until the last intangible purchased together is disposed of. For example, in the past, taxpayers would allocate substantial basis to a 3-year covenant not to compete or some other short-lived intangible rather than goodwill (with a longer recovery period). If a §197 intangible expires or is disposed of before the 180-month amortization period expires any remaining basis of the disposed intangible is allocated among the remaining intangibles purchased at the same time.

31. [LO 4] Compare and contrast the tax and financial accounting treatment of goodwill. Are taxpayers allowed to deduct amounts associated with self-created goodwill?

US GAAP requires goodwill to be capitalized and tested annually for impairment. If and when the goodwill is impaired, the difference between the book value and the new fair value will be expensed. For tax purposes, goodwill is treated like any other §197 intangible. §197 intangibles are amortized over 180 months (15 years) using the straight-line method, and the full-month convention.

With respect to self-created assets taxpayers must amortize any capitalized costs (any unamortized research and experimentation expenses and with fees necessary to create the asset) over the life of the asset. For financial accounting these costs are normally expensed.

32. [LO 4] Compare and contrast the similarities and differences between organizational expenditures and start-up costs for tax purposes.

Organizational expenditures and start-up costs are sometimes confused because both expense types are similar in that they are both incurred about the time the business begins. However, the expenses relate to different concerns. Start-up costs are costs that would be deductible as ordinary trade or business expense under §162, except for the fact that the trade or business had not started. An example of start-up costs is employee wages incurred before actual production begins at the factory. Alternatively, organizational expenditures relate to professional fees related to creating the entity. An example of organizational expenditures is attorney fees incurred for preparation of the corporate charter or partnership agreement. Additionally, all businesses can deduct start-up costs, but only corporations and partnerships can deduct organizational expenditures.

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33. [LO 4] Discuss the method used to determine the amount of organizational expenditures or start-up costs that may be immediately expensed in the year a taxpayer begins business.

Start-up costs can be expensed up to $5,000 and organizational expenditures can each be expensed, up to $5,000, in the year the business begins. However, the current expense is reduced dollar for dollar if the expenses exceed a threshold amount. The threshold for both start-up costs and organizational expenditures is $50,000. Any remaining expenses can be amortized over 15 years (180 months) for both types of costs. For example, if a taxpayer incurs $23,000 of organizational costs, it may currently expense $5,000—since the total expense is less than the $50,000 threshold. The remaining $18,000 ($23,000 - $5,000 expense) may be amortized at a rate of $100 per month ($18,000 / 180 months).

34. [LO 4] Explain the amortization convention applicable to intangible assets.

MACRS uses the half-year, mid-quarter, and mid-month conventions. These simplifying conventions assume that the asset was placed in service during the middle of the year, quarter, or month, respectively. Intangibles are amortized using the full-month convention. This convention allows a full or entire month of amortization in each month the asset is owned—beginning with the month the intangible is placed in service.

35. [LO 4] Compare and contrast the recovery periods of §197 intangibles, organizational expenditures, start-up costs, and research and experimentation expenses.

All intangibles are amortized using the full-month convention over the applicable recovery period. §197 assets must be amortized over a 15-year recovery period. Organizational expenditures and start-up costs are eligible for up to $5,000 of expensing in the year the business begins. This expense is reduced dollar for dollar over a $50,000 threshold. The remaining expenses are amortized over a 15-year recovery period. Research and experimentation expenses may be capitalized or amortized over the determinable useful life, or if no determinable life, not less than 60 months. Any unamortized expense that is allocable to a self-created intangible such as a patent is amortized over the intangible's life.

36. [LO 5] Compare and contrast the cost and percentage depletion methods for recovering the costs of natural resources. What are the similarities and differences between the two methods?

Both cost and percentage depletion methods are used to recoup the cost of natural resources. A taxpayer is allowed to deduct the depletion method that results in the

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largest deduction in the current year. Cost depletion is a cost recovery method based on the amount of the estimated raw materials used during the year. The basic premise is that a business ratably recovers the cost basis of the resource as it is used up. Cost depletion is taken until the basis of the asset is recovered. If the natural resource is exhausted before the basis is recovered then the remaining basis is expensed. In contrast, percentage depletion is a statutory method that allows an expense based on the lesser of 50% of net income from the activity or a percentage (statutorily determined) of the gross receipts from the business during the current year. Percentage depletion is allowed to continue even after the asset's basis has been fully recovered.

37. [LO 5] Explain why percentage depletion has been referred to as a government subsidy.

Percentage depletion is often referred to as a government subsidy because it is an expense designed to encourage production of specific resources. For example, oil and gas, coal, and many other natural resources are assigned specific percentage depletion rates (between 5% and 22%), while timber is excluded from resources applicable to the method. To encourage development of a certain resource, Congress can simply raise the statutory percentage for the resource type. In addition, percentage depletion expense can transcend reality. How many expenses are allowed to exceed the taxpayer's basis in an asset? Very few expenses, if any are allowed in excess of basis. Savvy taxpayers can underestimate the estimate of a natural resource, accelerate its cost recovery through cost depletion, and then continue to receive depletion benefits through percentage depletion. For these reasons, percentage depletion is referred to as a subsidy.

Problems

38. [LO 1] Jose purchased a delivery van for his business through an online auction. His winning bid for the van was $24,500. In addition, Jose incurred the following expenses before using the van: shipping costs of $650; paint to match the other fleet vehicles at a cost of $1,000; registration costs of $3,200 which included $3,000 of sales tax and a registration fee of $200; wash and detailing for $50; and an engine tune-up for $250. What is Jose's cost basis for the delivery van?

$29,150, cost basis in the delivery van, computed as follows:

Description	***Amount***	***Explanation****
Purchase price	*$24,500*	

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Shipping costs	*650*	*Business preparation cost*
Paint	*1,000*	*Business preparation cost*
Sales tax	*3,000*	*Business preparation cost*
Total cost basis	*$29,150*	

**Note that the registration fee, washing and detailing, and engine tune-up are costs for repairs and maintenance that are not required to be capitalized.*

39. [LO 1] {Research} Emily purchased a building to store inventory for her business. The purchase price was $760,000. Beyond this, Emily incurred the following necessary expenses to get the building ready for use: $2,000 to repair minor leaks in the roof, $5,000 to make the interior suitable for her finished goods, and $300 in legal fees. What is Emily's cost basis in the new building?

    $765,300 cost basis, computed as follows:

Description	***Amount***	***Explanation***
Purchase price	*$760,000*	
Improvements	*5,000*	*Business preparation costs*
Legal fees	*300*	*Business preparation costs*
Cost basis in building	*$765,300**	

**Note that the $2,000 repair for the roof was not capitalized. The repair is likely a routine maintenance expenditure rather than a capitalized cost under Reg. 1.263(a)-3. The roof repair is reasonably expected to occur more than once in a 10-year period. However, if the expense resulted in a betterment, restoration or adaptation to new or different use, it would be capitalized. The improvements and legal fees would be capitalized as expenses to purchase the building, to prepare the building for use and begin using the building.*

40. [LO 1] {Research} In January, Prahbu purchases a new machine for use in an existing production line of his manufacturing business for $90,000. Assume that the machine is a unit of property and is not a material or supply. Prahbu pays $2,500 to install the machine, and after the machine is installed, he pays $1,300 to perform a critical test on the machine to ensure that it will operate in accordance with quality standards. On November 1, the critical test is complete, and Prahbu places the machine in service on the production line. On December 3, Prahbu pays another $3,300 to perform periodic quality control testing after the machine is placed in service. How much will Prahbu be required to capitalize as the cost of the machine?

    $93,800 cost basis, computed as follows:

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Description	***Amount***	***Explanation***
Purchase price	*$90,000*	
Installation costs	*2,500*	*Business preparation costs*
Critical test costs	*1,300*	*Business preparation costs*
Cost basis in machine	*$93,800*	

Under Reg. §1.263(a)-2(d)(1) **Prahbu** *must capitalize amounts paid to acquire or produce a unit of personal property machinery and equipment. Amounts paid to acquire or produce a unit of personal property include the invoice price, transaction costs, and costs for work performed prior to the date that the unit of property is placed in service by the taxpayer. The amounts paid for the installation and the critical test performed before the machine is placed in service must be capitalized as amounts to acquire the machine. However, the $3,300 paid for periodic quality control testing after Prahbu placed the machine in service is not required to be capitalized as amounts paid to acquire the machine. This amount is expensed as routine maintenance under Reg §1.263(a)-3(i).*

41. [LO 1] Dennis contributed business assets to a new business in exchange for stock in the company. The exchange did not qualify as a nontaxable exchange. The fair market value of these assets was $287,000 on the contribution date. Dennis's original basis in the assets he contributed was $143,000, and the accumulated depreciation on the assets was $78,000.

    a. What is the business's basis in the assets it received from Dennis?
    b. What would be the business's basis if the transaction qualified as a nontaxable exchange?

    a. *Because this exchange is a fully taxable transaction, the business's basis in Dennis's assets is the $287,000 fair market value of the assets.*
    b. *If the transaction qualified as a nontaxable exchange, the business would take the same adjusted basis in the assets that Dennis had. That is, the business will receive an exchanged basis of $65,000 ($143,000 original basis minus accumulated depreciation of $78,000) in the assets.*

42. [LO 1] Brittany started a law practice as a sole proprietor. She owned a computer, printer, desk, and file cabinet she purchased during law school (several years ago) that she is planning to use in her business. What is the depreciable basis that Brittany should use in her business for each asset, given the following information?

Asset	**Purchase Price**	**FMV at Time Converted to Business**

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		use
Computer	$2,500	$800
Printer	$300	$150
Desk	$1,200	$1,000
File cabinet	$200	$225

The basis of assets converted from personal use to business use is the lesser of (1) fair market value on date of conversion or (2) basis on the date of conversion. The basis of each asset is as follows:

Asset	***(1) FMV***	***(2) Basis on Date of Conversion***	**Lesser of (1) or (2) Depreciable *Basis***
Computer	*$800*	*$2,500*	***$800***
Printer	*$150*	*$300*	***$150***
Desk	*$1,000*	*$1,200*	***$1,000***
File cabinet	*$225*	*$200*	***$200***

43. [LO 1] Meg O'Brien received a gift of some small-scale jewelry manufacturing equipment that her father had used for personal purposes for many years. Her father originally purchased the equipment for $1,500. Because the equipment is out of production and no longer available, the property is currently worth $4,000. Meg has decided to begin a new jewelry manufacturing trade or business. What is her depreciable basis for depreciating the equipment?

    The basis of a gift is a carryover basis from the donor. Therefore Meg's depreciable basis in the property is $1,500.

44. [LO 1] Gary inherited a Maine summer cabin on 10 acres from his grandmother. His grandparents originally purchased the property for $500 in 1950 and built the cabin at a cost of $10,000 in 1965. His grandfather died in 1980 and when his grandmother recently passed away, the property was appraised at $500,000 for the land and $700,000 for the cabin. Since Gary doesn't currently live in New England, he decided that it would be best to put the property to use as a rental. What is Gary's basis in the land and in the cabin?

    The basis of inherited property is the fair market value on the date of death or, if elected by the estate, the alternate valuation date if less. Consequently, Gary's basis will be $500,000 in the land and $700,000 for the cabin.

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45. [LO 1] Wanting to finalize a sale before year-end, on December 29, WR Outfitters sold to Bob a warehouse and the land for $125,000. The appraised fair market value of the warehouse was $75,000, and the appraised value of the land was $100,000.

    a. What is Bob's basis in the warehouse and in the land?
    b. What would be Bob's basis in the warehouse and in the land if the appraised value of the warehouse is $50,000, and the appraised value of the land is $125,000?
    c. Which appraisal would Bob likely prefer?

NOTE: This is a bargain purchase. The sales price is less than the appraised value. This solution uses the relative appraised values of the land and the warehouse to allocate the purchase price between these two assets.

a. Bob's cost basis in the land is $71,429. Because the purchase price is less than the appraised values for the land and the warehouse, the purchase price must be allocated between the land and the warehouse. The $71,429 basis for the land is the amount of the $125,000 purchase price that is allocated to the land based on the relative value of the land ($100,000) to the value of the land ($100,000) plus the value of the warehouse ($75,000) based on the appraisal. The formula used to determine the basis allocated to the land is $125,000 (purchase price) × $100,000/($100,000 + 75,000).
Use the same process to determine that Bob's basis in the warehouse is $53,571.

b. Bob's cost basis for the land is $89,286. Because the purchase price is less than the appraised values for the land and the warehouse, the purchase price must be allocated between the land and the warehouse. The $89,286 basis for the land is the amount of the $125,000 purchase price that is allocated to the land based on the relative value of the land ($125,000) to the value of the land ($125,000) plus the value of the warehouse ($50,000) based on the appraisal. The formula used to determine the basis allocated to the land is $125,000 (purchase price) × $125,000/($50,000 + 125,000).
Use the same process to determine that Bob's basis in the warehouse is $35,714.

c. Bob would likely prefer the appraisal from part (a), because the appraisal allows him to allocate more basis to the warehouse, which is depreciable.

46. [LO 2] At the beginning of the year, Poplock began a calendar-year dog boarding business called Griff's Palace. Poplock bought and placed in service the following assets during the year:

Asset	Date Acquired	Cost Basis
Computer equipment	3/23	$5,000

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Dog grooming furniture	5/12	$7,000
Pickup truck	9/17	$10,000
Commercial building	10/11	$270,000
Land (one acre)	10/11	$80,000

Assuming Poplock does not elect §179 expensing or bonus depreciation, answer the following questions:

a. What is Poplock's year 1 depreciation expense for each asset?
b. What is Poplock's year 2 depreciation expense for each asset?

a. $5,445, under the half-year convention for personal property, calculated as follows:

Asset	***Purchase Date***	***Quarter***	***Recovery period***	***(1) Original Basis***	***(2) Rate***	***(1) × (2) Depreciation***
Computer equipment	*23-Mar*	*1st*	*5 years*	*$5,000*	*20.00%*	*$1,000*
Dog grooming furniture	*12-May*	*2nd*	*7 years*	*$7,000*	*14.29%*	*$1,000*
Pickup truck	*17-Sep*	*3rd*	*5 years*	*$10,000*	*20.00%*	*$2,000*
Building	*11-Oct*	*4th*	*39 years*	*$270,000*	*0.535%*	*$1,445*
						$5,445

b. $13,437, calculated as follows:

Asset	***Purchase Date***	***Quarter***	***Recovery period***	***(1) Original Basis***	***(2) Rate***	***(1) × (2) Depreciation***
Computer equipment	*23-Mar*	*1st*	*5 years*	*$5,000*	*32.00%*	*$1,600*
Dog grooming furniture	*12-May*	*2nd*	*7 years*	*$7,000*	*24.49%*	*$1,714*
Pickup truck	*17-Sep*	*3rd*	*5 years*	*$10,000*	*32.00%*	*$3,200*
Building	*11-Oct*	*4th*	*39 years*	*$270,000*	*2.564%*	*$6,923*
						$13,437

47. [LO 2] DLW Corporation acquired and placed in service the following assets during the year:

Asset	**Date Acquired**	**Cost Basis**

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Computer equipment	2/17	$10,000
Furniture	5/12	$17,000
Commercial building	11/1	$270,000

Assuming DLW does not elect §179 expensing or bonus depreciation, answer the following questions:

a. What is DLW's year 1 cost recovery for each asset?
b. What is DLW's year 3 cost recovery for each asset if DLW sells all of these assets on 1/23 of year 3?

a. $5,296, under the half-year convention for personal property, calculated as follows:

Asset	***Purchase Date***	***Quarter***	***Recovery period***	***(1) Original Basis***	***(2) Rate***	***(1) × (2) Depreciation***
Computer equipment	*17-Feb*	*1st*	*5 years*	*$10,000*	*20.00%*	*$2,000*
Furniture	*12-May*	*2nd*	*7 years*	*$17,000*	*14.29%*	*$2,429*
Building	*1-Nov*	*4th*	*39 years*	*$270,000*	*0.321%*	*$867*
						$5,296

b. $2,735, calculated as follows:

Asset	***Original Basis***	***Recovery period***	***Rate***	***Portion of Year***	***Depreciation Expense***
Computer equipment	*$10,000*	*5 years*	*19.2%*	*50.00%*	*$960*
Furniture	*$17,000*	*7 years*	*17.49%*	*50.00%*	*$1,487*
Building	*$270,000*	*39 years*	*2.564%*	*4.17%*	*$288*
Total Depreciation Expense					*$2,735*

48. [LO 2] At the beginning of the year, Dee began a calendar-year business and placed in service the following assets during the year:

Asset	Date Acquired	Cost Basis
Computer equipment	3/23	$5,000
Furniture	5/12	$7,000
Pickup truck	11/15	$10,000

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Commercial building	10/11	$270,000

Assuming Dee does not elect §179 expensing or bonus depreciation, answer the following questions:

a. What is Dee's year 1 cost recovery for each asset?
b. What is Dee's year 2 cost recovery for each asset?

a. $4,945, using the mid-quarter convention for personal property, as calculated below. Dee is required to use the mid-quarter convention because more than 40 percent of the tangible personal property was placed in service during the 4th quarter. Dee placed 45.45% ($10,000 / ($5,000 + $7,000 + $10,000)) of the tangible personal property in service during the 4th quarter.

Asset	Purchase Date	Quarter	Recovery period	(1) Original Basis	(2) Rate	(1) × (2) Cost Recovery
Computer equipment	23-Mar	1st	5 years	$5,000	35.00%	$1,750
Furniture	12-May	2nd	7 years	$7,000	17.85%	$1,250
Pickup truck	15-Nov	4th	5 years	$10,000	5.00%	$500
Building	11-Oct	4th	39 years	$270,000	0.535%	$1,445
						$4,945

b. $13,666, using the mid-quarter convention for personal property, calculated as follows:

Asset	Purchase Date	Quarter	Recovery period	(1) Original Basis	(2) Rate	(1) × (2) Cost Recovery
Computer equipment	23-Mar	1st	5 years	$5,000	26.00%	$1,300
Furniture	12-May	2nd	7 years	$7,000	23.47%	$1,643
Pickup truck	15-Nov	4th	5 years	$10,000	38.00%	$3,800
Building	11-Oct	4th	39 years	$270,000	2.564%	$6,923
						$13,666

49. [LO 2] Evergreen Corporation (calendar year end) acquired the following assets during the current year (ignore §179 expense and bonus depreciation for this problem):

Asset	Placed in Service Date	Original Basis

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Machinery	October 25	$70,000
Computer Equipment	February 3	$10,000
Used Delivery Truck*	August 17	$23,000
Furniture	April 22	$150,000

*The delivery truck is not a luxury automobile.

a. What is the allowable MACRS depreciation on Evergreen's property in the current year?
b. What is the allowable MACRS depreciation on Evergreen's property in the current year if the machinery had a basis of $170,000 rather than $70,000?

a. $38,038, under the half-year convention, calculated as follows:

Asset	***Placed in Service***	***(1) Original Basis***	***(2) Rate***	***(1) × (2) Depreciation***
Computer equipment (5 year)	*February 3*	*$10,000*	*20.00%*	*$2,000*
Furniture (7 year)	*April 22*	*$150,000*	*14.29%*	*$21,435*
Used delivery truck (5 year)	*August 17*	*$23,000*	*20.00%*	*$4,600*
Machinery (7 year)	*October 25*	*$70,000*	*14.29%*	*$10,003*
Total		*$253,000*		*$38,038*

Evergreen isn't required to use the mid-quarter convention because only 27.67% of its tangible personal property was placed in service during the 4th quarter (70,000/253,000). Additionally, the delivery truck is not considered to be a luxury auto.

b. $39,794, under the mid-quarter convention, as computed below. Evergreen is required to use the mid-quarter convention because greater than 40 percent of tangible personal property was placed in service during the 4th quarter. Evergreen placed 48.2% [$170,000 / ($10,000 + $23,000 + $150,000 + $170,000)] of its tangible personal property in service during the 4th quarter.

Asset	***Placed in Service***	***Quarter***	***(1) Original Basis***	***(2) Rate***	***(1) × (2) Depreciation***
Computer equipment (5 year)	*February 3*	*1st*	*$10,000*	*35.00%*	*$3,500*
Furniture (7 year)	*April 22*	*2nd*	*$150,000*	*17.85%*	*$26,775*
Used delivery truck (5 year)	*August 17*	*3rd*	*$23,000*	*15.00%*	*$3,450*
Machinery (7 year)	*October 25*	*4th*	*$170,000*	*3.57%*	*$6,069*
Total			*$353,000*		*$39,794*

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50. [LO 2] Convers Corporation (June 30 year-end) acquired the following assets during the current tax year (ignore §179 expense and bonus depreciation for this problem):

Asset	Placed in Service Date	Original Basis
Machinery	October 25	$70,000
Computer Equipment	February 3	$10,000
Used Delivery Truck*	March 17	$23,000
Furniture	April 22	$150,000
Total		$253,000

*The delivery truck is not a luxury automobile.

What is the allowable MACRS depreciation on Convers' property in the current year?

$22,800, under the mid-quarter convention, as computed below. Convers is required to use the mid-quarter convention because greater than 40 percent of tangible personal property was placed in service during its 4th quarter. Convers placed 59.3% [$150,000 / ($70,000 + $10,000 + $23,000 + $150,000)] of its tangible personal property in service during the 4th quarter (April – June).

Asset	Placed in Service	Quarter	(1) Original Basis	(2) Rate	(1) × (2) Depreciation
Machinery (7 year)	*October 25*	*2nd*	*$70,000*	*17.85%*	*$12,495*
Computer Equipment (5 year)	*February 3*	*3rd*	*$10,000*	*15.00%*	*$1,500*
Used delivery truck (5 year)	*March 17*	*3rd*	*$23,000*	*15.00%*	*$3,450*
Furniture (7 year)	*April 22*	*4th*	*$150,000*	*3.57%*	*$5,355*
Total			*$253,000*		*$22,800*

51. [LO 2] Harris Corp. is a technology start-up and is in its second year of operations. The company didn't purchase any assets this year but purchased the following assets in the prior year:

Asset	Placed in Service	Basis
Office Equipment	August 14	$10,000
Manufacturing Equipment	April 15	68,000
Computer System	June 1	16,000
Total		$94.000

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Harris did not know depreciation was tax deductible until it hired an accountant this year and didn't claim any depreciation expense in its first year of operation.

a) What is the maximum amount of depreciation expense Harris Corp. can deduct in its second year of operation (ignore bonus and §179 expense)?

b) What is the basis of the office equipment at the end of the second year?

a) Harris is limited to the regular MACRS depreciation using the second year depreciation rates. Harris is not required to use the mid-quarter convention as it did not place more than 40 percent of its assets into service last year. Its depreciation for this year is $24,222, calculated as follows:

Asset	***Placed in Service***	***(1) Original Basis***	***(2) Rate***	***(1) × (2) Depreciation***
Office equipment (7 year)	*August 14*	*$10,000*	*24.49%*	*$2,449*
Manufacturing equipment (7 year)	*April 15*	*68,000*	*24.49%*	*16,653*
Computer system (5 year)	*June 1*	*16,000*	*32.00%*	*5,120*
Total		*$94,000*		*$24,222*

b) The basis of the office equipment at the end of the second year is calculated by subtracting the depreciation allowable from the original basis. In this case, Harris must reduce the basis by $1,429 for the first year's depreciation that was not taken but was allowable plus $2,449 for the second year's depreciation. After reducing the original cost by these depreciation amounts, the remaining basis is $6,122.

52. [LO 2] {Planning} Parley needs a new truck to help him expand Parley's Plumbing Palace. Business has been booming and Parley would like to accelerate his tax deductions as much as possible (ignore §179 expense and bonus depreciation for this problem). On April 1, Parley purchased a new delivery van for $25,000. It is now September 26 and Parley, already in need of another vehicle, has found a deal on buying a truck for $22,000 (all fees included). The dealer tells him if he doesn't buy the truck (Option 1), it will be gone tomorrow. There is an auction (Option 2) scheduled for October 5 where Parley believes he can get a similar truck for $21,500, but there is also a $500 auction fee.

    a. Which option allows Parley to generate more depreciation expense deductions this year (the vehicles are not considered to be luxury autos)?
    b. Assume the original facts except that the delivery van was placed in service one day earlier on March 31 rather than April 1. Which option generates more depreciation expense?

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a. Option 1 generates more depreciation. Option 1 generates $9,400 of depreciation and Option 2 generates $7,350.

Option 1: Half-year convention applies

Asset	Date Placed in Service	(1) Original Basis	(2) Rate	(1) × (2) Depreciation
Delivery Van	April 1	$25,000	20.00%	$5,000
Option 1	September 26	$22,000	20.00%	$4,400
Total				$9,400

Option 2: Mid-quarter convention applies

Asset	Date Placed in Service	Quarter	(1) Original Basis	(2) Rate	(1) × (2) Depreciation
Delivery Van	April 1	2nd	$25,000	25.00%	$6,250
Option 2	October 5	4th	$22,000	5.00%	$1,100
Total					$7,350

b. Option 2 generates more depreciation expense ($9,850 vs. 9,400).
Under Option 1, because the half-year convention applies, the depreciation expense is $9,400, the same as it is in part a.
Under Option 2, because the mid-quarter convention applies and the Delivery Van was placed in service in the first quarter (on March 31), Parley is allowed to deduct more depreciation overall. The depreciation under Option 2 in this scenario is $9,850, computed as follows:

Option 2: Mid-quarter convention applies

Asset	Date Placed in Service	Quarter	(1) Original Basis	(2) Rate	(1) × (2) Depreciation
Delivery van	March 31	1st	$25,000	35.00%	$8,750
Option 2	October 5	4th	$22,000	5.00%	$1,100
Total					$9,850

53. [LO 2] Way Corporation disposed of the following tangible personal property assets in the current year. Assume that the delivery truck is not a luxury auto. Calculate Way Corporation's 2016 depreciation expense (ignore §179 expense and bonus depreciation for this problem).

Asset	Date acquired	Date sold	Conventio	Original Basis

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			n	
Furniture (7 year)	5/12/12	7/15/16	HY	$55,000
Machinery (7 year)	3/23/13	3/15/16	MQ	$72,000
Delivery truck (5 year)	9/17/14	3/13/16	HY	$20,000
Machinery (7 year)	10/11/15	8/11/16	MQ	$270,000
Computer (5 year)	10/11/16	12/15/16	HY	$80,000

Depreciation is $51,851, calculated as follows:

Asset	***Original Basis***	***Quarter If mid quarter***	***Rate***	***Portion of Year***	***Depreciation Expense***
Furniture	*$55,000*	***n/a***	*8.93%*	*50.00%*	*$2,456*
Machinery	*$72,000*	*1st*	*10.93%*	*12.50%*	*$984*
Delivery truck	*$20,000*	***n/a***	*19.20%*	*50.00%*	*$1,920*
Machinery	*$270,000*	*4th*	*27.55%*	*62.50%*	*$46,491*
Computer	*$80,000*	***n/a***	*0.00%*	*50.00%*	*$0 **
Total Depreciation Expense					*$51,851*

**No depreciation for assets acquired and disposed of in the same year.*

54. [LO 2] On November 10 of year 1 Javier purchased a building, including the land it was on, to assemble his new equipment. The total cost of the purchase was $1,200,000; $300,000 was allocated to the basis of the land and the remaining $900,000 was allocated to the basis of the building.

    a. Using MACRS, what is Javier's depreciation expense on the building for years 1 through 3?
    b. What would be the year 3 depreciation expense if the building was sold on August 1 of year 3?
    c. Answer the question in part (a), except assume the building was purchased and placed in service on March 3 instead of November 10.
    d. Answer the question in part (a), except assume that the building is residential property.
    e. What would be the depreciation for 2016, 2017, and 2018 if the property were nonresidential property purchased and placed in service November 10, 1999 (assume the same original basis)?

a. The depreciation for the 3 years is computed as follows:

Year	***Recovery***	***Date Placed in***	***(1) Original***	***(2)***	***(1) × (2)***

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	Method	Period	Service	Basis	Rate	Depreciation
1	SL	39	Nov. 10	$900,000	0.321%	$2,889
2				$900,000	2.564%	$23,076
3				$900,000	2.564%	$23,076

b. The depreciation for year 3 would be $14,423 and is computed as follows (The building is sold in month 8 so depreciation for the year is for 8 minus one-half month =7.5 months.):

Year	Method	Recovery Period	Date Placed in Service	(1) Basis	(2) Rate	(1) × (2) Depreciation
3	SL	39	Nov. 10	$900,000	2.564%	$23,076
					Partial year	x 7.5/12
						$14,423

c. The depreciation for years 1 – 3 is computed as follows (note that years 2 and 3 are the same):

Year	Method	Recovery Period	Date Placed in Service	(1) Original Basis	(2) Rate	(1) × (2) Depreciation
1	SL	39	March 3	$900,000	2.033%	$18,297
2				$900,000	2.564%	$23,076
3				$900,000	2.564%	$23,076

d. If the property was residential real property, the building is depreciated over 27.5 years instead of 39 years. The depreciation for years 1 - 3 is computed as follows:

Year	Method	Recovery Period	Date Placed in Service	(1) Original Basis	(2) Rate	(1) × (2) Depreciation
1	SL	27.5	Nov. 10	$900,000	0.455%	$4,095
2				$900,000	3.636%	$32,724
3				$900,000	3.636%	$32,724

e. If the property was nonresidential real property purchased in 1999, the depreciation for the 3 years is computed as follows for years 18, 19, and 20 in the depreciation table:

Year	Method	Recovery Period	Date Placed in Service	(1) Original Basis	(2) Rate	(1) × (2) Depreciation

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2016	*SL*	*39*	*1999*	*$900,000*	*2.564%*	*$23,076*
2017				*$900,000*	*2.564%*	*$23,076*
2018				*$900,000*	*2.564%*	*$23,076*

55. [LO 2] Carl purchased an apartment complex for $1.1 million on March 17 of year 1. $300,000 of the purchase price was attributable to the land the complex sits on. He also installed new furniture into half of the units at a cost of $60,000.
    a. What is Carl's allowable depreciation expense for his real property for years 1 and 2?
    b. What is Carl's allowable depreciation expense for year 3 if the real property is sold on January 2 of year 3?

a. The depreciation on the real property for the 2 years is computed as follows:

Year	***Method***	***Recovery Period***	***Date Placed in Service***	***(1) Original Basis***	***(2) Rate***	***(1) × (2) Depreciation***
1	*SL*	*27.5*	*March 17*	*$800,000*	*2.879%*	*$23,032*
2				*$800,000*	*3.636%*	*$29,088*

Note that the furniture is depreciable personal property.

b. The depreciation for year 3 is computed as follows:

Year	***Method***	***Recovery Period***	***Date Placed in Service***	***(1) Original Basis***	***(2) Rate***	***(1) × (2) Depreciation***
3	*SL*	*27.5*	*March 17*	*$800,000*	*3.636%*	*$29,088*
					*Partial year**	*x .5/12*
						$1,212

**mid-month convention applies to real property in year of acquisition and year of disposition.*

56. [LO 2, LO 3] AMP Corporation (calendar year end) has 2016 taxable income of $900,000 before the §179 expense. During 2016, AMP acquired the following assets:

Asset	**Placed in Service**	**Basis**
Machinery	September 12	$1,550,000
Computer Equipment	February 10	365,000
Office Building	April 2	480,000
Total		$2,395,000

a. What is the maximum amount of §179 expense AMP may deduct for 2016?

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b. What is the maximum total depreciation expense, including §179 expense, that AMP may deduct in 2016 on the assets it placed in service in 2016 assuming no bonus depreciation?

a. The maximum §179 expense is $500,000.

Description	Amount	Explanation
(1) Property placed in service in 2016	$1,915,000	Total §179 qualified property
(2) Threshold for §179 phase-out	(2,010,000)	2016 amount [§179(b)(2)]
(3) Phase-out of maximum §179 expense	$-0-	(1) – (2) (*permanently disallowed*), not less than $0.
(4) Maximum 179 expense before phase-out	$500,000	2016 amount [§179(b)(1)]
(5) Phase-out of maximum §179 expense	$-0-	From (3)
Maximum §179 expense after phase-out	**$500,000**	(4) – (5)

b. The maximum depreciation expense is $731,776 (half-year convention). Depreciation is maximized by applying the §179 expense against 7-year rather than 5-year property.

Asset	Original Basis	§179 Expense	Remaining Basis	Rate	Depreciation Expense
Machinery (7-year)	$1,550,000	$500,000	$1,050,000	14.29%	$150,045
Computer Equipment (5-year)	$365,000		$365,000	20.00%	$73,000
Office building (39 year)	$480,000		$480,000	1.819%	$8,731
§179 Expense					$500,000
Total cost recovery					$731,776

57. [LO 2, LO 3] Assume that TDW Corporation (calendar year end) has 2016 taxable income of $650,000 before the §179 expense, acquired the following assets during 2016:

Asset	Placed in Service	Basis
Machinery	October 12	$1,270,000
Computer Equipment	February 10	263,000
Furniture	April 2	880,000
Total		$2,413,000

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a. What is the maximum amount of §179 expense TDW may deduct for 2016?
b. What is the maximum total depreciation expense, including §179 expense, that TDW may deduct in 2016 on the assets it placed in service in 2015 assuming no bonus depreciation?

a. The maximum §179 expense is $97,000.

Description	Amount	Explanation
(1) Property placed in service in 2016	$2,413,000	Total qualified property
(2) Threshold for §179 phase-out	(2,010,000)	2016 amount [§179(b)(2)]
(3) Phase-out of maximum §179 expense	$403,000	(1) – (2) (*permanently disallowed*)
(4) Maximum 179 expense before phase-out	$500,000	2016 amount [§179(b)(1)]
(5) Phase-out of maximum §179 expense	$403,000	From (3)
(6) **Maximum §179 expense after phase-out**	**$97,000**	(4) – (5)

b. The maximum depreciation expense is $388,006 (mid-quarter convention). Depreciation is maximized by applying the §179 expense against 7-year rather than 5-year property, and in this case, depreciation is maximized by applying the §179 expense against the machinery.

Asset	Original Basis	§179 Expense	Remaining Basis	Rate	Depreciation Expense
Machinery (7-year)	$1,270,000	$97,000	$1,173,000	3.57%	$41,876
Computer Equipment (5-year)	$263,000		$263,000	35.00%	92,050
Furniture (7 year)	$880,000		$880,000	17.85%	157,080
§179 Expense					97,000
Total cost recovery					$388,006

58. [LO 2, LO 3] Assume that Timberline Corporation has 2016 taxable income of $240,000 before the §179 expense.

Asset	Purchase Date	Basis
Furniture (7-year)	December 1	$350,000
Computer Equipment (5-year)	February 28	90,000
Copier (5-year)	July 15	30,000
Machinery (7-year)	May 22	480,000
Total		$950,000

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a. What is the maximum amount of §179 expense Timberline may deduct for 2016? What is Timberline's §179 carryforward to 2017, if any?
b. What would Timberline's *maximum* depreciation expense be for 2016 assuming no bonus depreciation?
c. What would Timberline's *maximum* depreciation expense be for 2016 if the furniture cost $2,000,000 instead of $350,000 and assuming no bonus depreciation?

a. The maximum section 179 expense would be $240,000:

Description	***Amount***	***Explanation***
(1) Property placed in service	*$950,000*	*Total qualified assets*
(2) Threshold for §179 phase-out	*(2,010,000)*	2016 *amount (§179(b)(2))*
(3) Phase-out of maximum §179 expense	*$0*	*(1) – (2) (permanently disallowed), not less than $0.*
(4) Maximum 179 expense before phase-out	*$500,000*	2016 *amount (§179(b)(1))*
(5) Phase-out of maximum §179 expense	*$0*	*From (3)*
(6) ***Maximum §179 expense after phase-out***	***$500,000***	*(4) – (5)*
(7) Taxable income before §179 deduction	*$240,000*	*Given in problem*
(8) §179 expense after taxable income limitation.	***$240,000***	*Lesser of (6) and (7)*
§179 carryforward to next year	***$260,000***	*(6) – (8)*

b. The half-year convention applies because only 15.49% of its personal property was placed in service in the 4th quarter (($350,000 – 240,000)/(950,000 – 240,000)=110,000/710,000). (Because the mid-quarter test is applied after taking §179 expense, it is optimal to take the §179 expense against qualified property placed into service during the fourth quarter.)

Timberline's depreciation expense is $348,311 computed as follows:

Asset	***Original Basis***	***§179 Expense***	***Remaining Basis***	***Rate***	***Depreciation Expense***
Furniture	*$350,000*	*$240,000*	*$110,000*	*14.29%*	*$15,719*
Computer Equipment	*$90,000*		*$90,000*	*20.00%*	*$18,000*
Copier	*$30,000*		*$30,000*	*20.00%*	*$6,000*
Machinery	*$480,000*		*$480,000*	*14.29%*	*$68,592*
§179 Expense					*$240,000*
*Total Depreciation Expense**					*$348,311*

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**Depreciation expense is maximized by applying the §179 expense against 7-year instead of 5-year property.*

c. The maximum section 179 expense would be $0, computed as follows:

Description	***Amount***	***Explanation***
(1) Property placed in service	*$2,600,000*	*Total of qualifying assets*
(2) Threshold for §179 phase-out	*(2,010,000)*	2016 *amount (§179(b)(2))*
(3) Phase-out of maximum §179 expense	*$590,000*	*(1) – (2) (permanently disallowed)*
(4) Maximum 179 expense before phase-out	*$500,000*	2016 *amount [§179(b)(1)]*
(5) Phase-out of maximum §179 expense	*$590,000*	*From (3)*
Maximum §179 expense after phase-out	***$0***	*(4) – (5), but not below 0*

The maximum depreciation expense for 2016 using the mid-quarter convention would be $193,080, computed as follows:

Asset	***Original Basis***	***§179 Expense***	***Remaining Basis***	***Quarter***	***Rate***	***Depreciation Expense***
Furniture	*$2,000,000*		*$2,000,000*	*4th*	*3.57%*	*$71,400*
Computer Equipment	*$90,000*		*$90,000*	*1st*	*35.00%*	*$31,500*
Copier	*$30,000*		*$30,000*	*3rd*	*15.00%*	*$4,500*
Machinery	*$480,000*		*$480,000*	*2nd*	*17.85%*	*$85,680*
§179 Expense						*$0*
Total Depreciation Expense						*$193,080*

59. [LO 2, LO 3] {Planning} Dain's Diamond Bit Drilling purchased the following assets this year. Assume its taxable income for the year was $53,000 before deducting any §179 expense (assume no bonus depreciation).

Asset	**Purchase Date**	**Original Basis**
Drill Bits (5-year)	January 25	$90,000
Drill Bits (5-year)	July 25	95,000
Commercial Building	April 22	220,000

a. What is the maximum amount of §179 expense Dain may deduct for the year?
b. What is Dain's *maximum* depreciation expense for the year (including §179 expense)?
c. If the January drill bits' original basis was $2,375,000, what is the maximum amount of §179 expense Dain may deduct for the year?

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d. If the January drill bits' basis was $2,495,000, what is the maximum amount of §179 expense Dain may deduct for the year?

a. The maximum section 179 expense is $53,000, computed as follows:

Description	Amount	Explanation
(1) Property placed in service this year	$185,000	Total of qualifying assets
(2) Threshold for §179 phase-out	(2,010,000)	2016 amount (§179(b)(2))
(3) Phase-out of maximum §179 expense	$0	(1) – (2) (*permanently disallowed*), not less than $0
(4) Maximum 179 expense before phase-out	$500,000	2016 amount (§179(b)(1))
(5) Phase-out of maximum §179 expense	$0	From (3)
(6) Maximum §179 expense after phase-out	$500,000	(4) – (5)
(7) Taxable income before §179 deduction	$53,000	Assumed in problem
§179 expense deductible after taxable income limitation.	$53,000	Lesser of (6) and (7)

b. Dain's depreciation expense would be $83,402, calculated as follows:

Asset	Original Basis	§179 Expense	Remaining Basis	Rate	Depreciation Expense
Drill Bits (5 year)	$90,000	$53,000	$37,000	20.00%	$7,400
Drill Bits (5 year)	$95,000		$95,000	20.00%	$19,000
Commercial Building (39 year)	$220,000		$220,000	1.819%	$4,002
§179 Expense					$53,000
Total Depreciation Expense					$83,402

c. The maximum section 179 expense would be $40,000:

Description	Amount	Explanation
(1) Property placed in service	$2,470,000	Total of qualifying assets
(2) Threshold for §179 phase-out	(2,010,000)	2016 amount (§179(b)(2))
(3) Phase-out of maximum §179 expense	$460,000	(1) – (2) (*permanently disallowed*)
(4) Maximum 179 expense before phase-out	$500,000	2016 amount (§179(b)(1))
(5) Phase-out of maximum §179 expense	$460,000	From (3)
(6) **Maximum §179 expense after phase-out**	**$40,000**	(4) – (5)
(7) Taxable income before §179 deduction	$53,000	Assumed in problem

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Maximum §179 expense after taxable income limitation.	**$40,000**	Lesser of (6) and (7)

d. The maximum section 179 expense would be $0:

Description	Amount	Explanation
(1) Property placed in service	$2,590,000	Total of qualifying assets
(2) Threshold for §179 phase-out	(2,010,000)	2016 amount (§179(b)(2))
(3) Phase-out of maximum §179 expense	$580,000	(1) – (2) (*permanently disallowed*)
(4) Maximum 179 expense before phase-out	$500,000	2016 amount (§179(b)(1))
(5) Phase-out of maximum §179 expense	$580,000	From (3)
(6) Maximum §179 expense after phase-out	$0	(4) – (5) , not less than $0
(7) Taxable income before §179 deduction	$53,000	Assumed in problem
Maximum §179 expense after taxable income limitation.	**$0**	Lesser of (6) and (7)

60. [LO 2, LO 3] {Research} Assume that ACW Corporation has 2016 taxable income of $1,000,000 before the §179 expense, acquired the following assets during 2016 (assume no bonus depreciation):

Asset	Placed in Service	Basis
Machinery	September 12	$470,000
Computer equipment	February 10	70,000
Delivery truck	August 21	93,000
Qualified leasehold improvements	April 2	380,000
Total		$1,013,000

a. What is the maximum amount of §179 expense ACW may deduct for 2016?
b. What is the maximum *total* depreciation expense that ACW may deduct in 2016 on the assets it placed in service in 2016?

a. The maximum §179 expense is $500,000.

Description	Amount	Explanation
(1) Qualifying property placed in service in 2015	$1,013,000	Total of qualifying assets
(2) Threshold for §179 phase-out	(2,010,000)	2016 amount [§179(b)(2)]
(3) Phase-out of maximum §179 expense	$-0-	(1) – (2) (*permanently disallowed*), not less

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		than $0
(4) Maximum 179 expense before phase-out	$500,000	2016 amount [§179(b)(1)]
(5) Phase-out of maximum §179 expense	$-0-	From (3)
Maximum §179 expense after phase-out	**$500,000**	(4) – (5)

b. The maximum depreciation expense is $582,615 (half year convention). Depreciation is maximized by applying the §179 expense against the qualified real property first up to its maximum amount and then applying to the 7-year rather than 5-year property.

Asset	Original Basis	§179 Expense	Remaining Basis*	Rate	Depreciation Expense
Machinery (7-year)	$470,000	$120,000	$350,000	14.29%	$50,015
Computers (5-year)	$70,000		$70,000	20.00%	$14,000
Delivery Truck (5 year)	$93,000		$93,000	20.00%	$18,600
Leasehold improvements (15 year)	$380,000	380,000	$0		0
§179 Expense					$500,000
Total Depreciation Expense					$582,615

61. [LO2, LO3] Chaz Corporation has taxable income in 2016 of $312,000 before the §179 expense and acquired the following assets during the year:

Asset	Placed in Service	Basis
Office furniture	September 12	$1,280,000
Computer Equipment	February 10	930,000
Delivery Truck	August 21	68,000
Total		$2,278,000

What is the maximum *total* depreciation expense that Chaz may deduct in 2016?

The maximum depreciation expense is $1,429,680 determined as follows:

Description	Amount	Explanation
(1) Property placed in service	$2,278,000	Total of qualifying assets
(2) Threshold for §179 phase-out	(2,010,000)	2016 amount [§179(b)(2)]
(3) Phase-out of maximum §179 expense	$268,000	(1) – (2) (*permanently disallowed*)

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(4) Maximum 179 expense before phase-out	$500,000	2016 amount [§179(b)(1)]
(5) Phase-out of maximum §179 expense	268,000	From (3)
Maximum §179 expense after phase-out	**$ 232,000**	(4) – (5), not limited by taxable income

Chaz will receive the most benefit by applying the §179 amount to the furniture (7-year property.

Asset	Original Basis	§179 Expense	Remaining Basis	Bonus Depreciation	Remaining Basis	Rate	Depreciation Expense
Furniture (7-year)	$1,280,000	$232,000	$1,048,000	524,000	$524,000	14.29%	$74,880
Computers (5-year)	930,000		930,000	465,000	465,000	20.00%	93,000
Delivery Truck (5-year)	68,000		68,000	34,000	34,000	20.00%	6,800
§179 Expense							$232,000
Bonus depreciation				$1,023,000			$1,023,000
Total Depreciation Expense							$1,429,680

62. [LO2, LO3] {Planning} {Research} Woolard Inc. has taxable income in 2016 of $150,000 before any depreciation deductions (§179, bonus, or MACRS) and acquired the following assets during the year:

Asset	Placed in Service	Basis
Office furniture (used)	March 20	$600,000

a. If Woolard elects $50,000 of §179, what is Woolard's total depreciation deduction for the year?
b. If Woolard elects the maximum amount of §179 for the year, what is the amount of deductible §179 expense for the year? What is the *total* depreciation expense that Woolard may deduct in 2016? What is Woolard's §179 carryforward to next year, if any?
c. Woolard is concerned about future limitations on its §179 expense. How much §179 expense should Woolard expense this year if it wants to maximize its depreciation this year and to avoid any carryover to future years?

a. Woolard's total deductible depreciation is $128,595 calculated as follows:

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Description	Amount	Explanation
(1) Property placed in service	$600,000	Total of qualifying assets
(2) Elected §179 amount	(50,000)	Given in problem
(3) Remaining asset basis	$550,000	(1) – (2)
(4) MACRS depreciation rate	14.29%	7-yr, half-year convention
(5) MACRS depreciation	$78,595	(3) × (4)
(6) Taxable income limitation for §179	71,405	$150,000 – (5);
(7) Deductible §179	50,000	Lesser of elected amount or (6)
(7) Total deductible depreciation	$128,595	(5) + (7)

The furniture does not qualify for bonus depreciation since it is used.

b. *Woolard deducts $135,710 of §179. Woolard carries forward §179 expense of $364,290 to next year. The total deductible depreciation is $150,000 determined as follows:*

Description	Amount	Explanation
(1) Property placed in service	$600,000	Total of qualifying assets
(2) Threshold for §179 phase-out	(2,010,000)	2016 amount [§179(b)(2)]
(3) Phase-out of maximum §179 expense	0	(1) – (2) (*permanently disallowed*), not less than $0
(4) Maximum 179 expense before phase-out	$500,000	2016 amount [§179(b)(1)]
(5) Phase-out of maximum §179 expense	0	From (3)
(6) Maximum §179 expense after phase-out	$500,000	(4) – (5) This is the amount Woolard elects for the year.
(7) Remaining basis in furniture	100,000	(1) – (6)
(8) MACRS depreciation rate	14.29%	7-year, half-year convention
(9) MACRS depreciation	14,290	(7) × (8)
(10) §179 taxable income limitation	$135,710	$150,000 – (9)
(11) Maximum deductible §179 expense after taxable income limitation.	**$135,710**	Lesser of (6) or (10)
Excess §179 expense carried forward	$364,290	(6) – (11)
Woolard's total depreciation deduction	$150,000	(9) + (11)

Woolard elects the maximum allowed for the year and must reduce the assets' bases by this amount. The remaining basis is subject to regular MACRS depreciation. Since the furniture is used property it is not eligible for bonus depreciation. The §179 taxable income limitation is taxable income after regular depreciation deductions but before the §179 expense. Woolard's §179 deduction is limited to this taxable income

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amount. The remaining §179 amount that Woolard elected but is not allowed to deduct this year can be carried over to future years.

c. *Woolard should elect to expense $74,974 of §179 to maximize its depreciation this year and to avoid any carryover determined as follows:*

Description	Amount	Explanation
(1) Property placed in service	$600,000	Total of qualifying assets
(2) Threshold for §179 phase-out	(2,010,000)	2016 amount [§179(b)(2)]
(3) Phase-out of maximum §179 expense	0	(1) – (2) (*permanently disallowed*)
(4) Maximum 179 expense before phase-out	$500,000	2016 amount [§179(b)(1)]
(5) Phase-out of maximum §179 expense	0	From (3)
(6) Maximum §179 expense after phase-out	$500,000	(4) – (5)
(7) §179 amount Woolard elects to maximize the current year total depreciation deduction	$74,974	See discussion below
(8) Remaining basis in furniture	525,026	(1) – (7)
(9) MACRS depreciation rate	14.29%	7-year, half-year convention
(10) MACRS depreciation	75,026	(9) × (8)
(11) §179 taxable income limitation	$74,974	$150,000 – (10)
(12) Maximum §179 expense after taxable income limitation.	**$74,974**	Lesser of (7) or (11). This is the amount Woolard elects for the year.
Excess §179 expense	$-0-	(7) – (12)
Woolard's total depreciation deduction	$150,000	(10) + (12)

Woolard must determine the maximum §179 amount allowed for the year without being limited by the taxable income limitation. To do this, Woolard determines the §179 amount as follows:
§179 amount = Taxable income before any depreciation minus regular MACRS depreciation.

The MACRS depreciation amount is determined after the §179 elected amount because the depreciable basis is reduced by the elected §179 amount and would be determined as follows:

MACRS depreciation = Depreciation rate × (asset cost minus elected §179)

To solve this, assume the following labels:
I = taxable income before any depreciation

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R = MACRS depreciation rate
C = asset cost
S = §179 expense

The elected §179 amount will equal:
$S = I - R(C - S)$

Rearranging and solving for S:
$S = (I - RxC)/(1 - R)$

Substituting in Woolard's facts:
$S = (\$150{,}000 - 14.29\% \times \$600{,}000)/(1 - 14.29\%)$
$S = \$74{,}974.$

This amount of §179 minimizes Woolard's required basis reduction of its assets and produces the most depreciation Woolard is eligible to take this year.

63. [LO 2, LO 3] {Planning} Assume that Sivart Corporation has 2016 taxable income of $750,000 before the §179 expense and acquired the following assets during 2016:

Asset	Placed in Service	Basis
Machinery	October 12	$1,440,000
Computer Equipment	February 10	70,000
Delivery Truck - used	August 21	93,000
Furniture	April 2	310,000
Total		$1,913,000

a. What is the maximum amount of §179 expense Sivart may deduct for 2016?
b. What is the maximum *total* depreciation expense (§179, bonus, MACRS) that Sivart may deduct in 2016 on the assets it placed in service in 2016?

a. The maximum §179 expense is $500,000.

Description	Amount	Explanation
(1) Property placed in service in 2016	$1,913,000	Total of qualifying assets
(2) Threshold for §179 phase-out	2,010,000	2016 amount [§179(b)(2)]
(3) Phase-out of maximum §179 expense	$0	(1) – (2) (*permanently disallowed*), not less than $0
(4) Maximum §179 expense before phase-out	$500,000	2016 amount [§179(b)(1)]

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(5) Phase-out of maximum §179 expense	$0	From (3)
(6) **Maximum §179 expense after phase-out**	**$500,000**	(4) – (5), not limited by taxable income

b. The maximum depreciation expense is $1,230,647 (mid-quarter convention). Depreciation is maximized by (1) applying the §179 expense against 7-year rather than 5 year property and (2) applying against the 7-year property placed in service in the 4th quarter (machinery) rather than the furniture that was placed in service in the second quarter because, due to the mid-quarter convention, the percentage for computing depreciation on the machine is only 3.57% while it is 17.85% for the furniture. As a general rule, the taxpayer will maximize current year depreciation expense by applying the §179 expense against the asset with the lowest depreciation percentage. The new assets are eligible for 50 percent bonus. The truck does not qualify for bonus depreciation because it is used property.

Asset	Original Basis	§179 Expense	Remaining Basis	Bonus Depreciation	Remaining Basis	Rate	Depreciation Expense
Machinery (7-year)	$1,440,000	$407,000	$1,033,000	$516,500	$516,500	3.57%	$18,439
Computers (5-year)	70,000		70,000	35,000	35,000	35.00%	12,250
Delivery Truck (5-year)	93,000	93,000		-		15.00%	13,950
Furniture (7-year)	310,000		310,000	155,000	155,000	17.85%	27,668
§179 Expense							$500,000
Bonus depreciation				$706,500			$706,500
Total Depreciation Expense							**$1,264,857**

64. [LO 2, LO 3] {Planning} Acorn Construction (calendar-year end C-corporation) has had rapid expansion during the last half of the current year due to the housing market's recovery. The company has record income and would like to maximize their cost recovery, as much as possible, for the current year. Acorn provided the following information:

Assets	Placed in Service	Basis
New Equipment and Tools	August 20	$800,000
Used Light Duty Trucks	October 17	1,200,000
Used Machinery	November 6	525,000
Total		$2,525,000

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a. What is Acorn's maximum cost recovery expense in the current year?
b. What planning strategies would you advise Acorn to consider?

a. Acorn is not eligible for §179 expensing because its new assets exceed the $2,010,000 threshold by more than $500,000. Therefore its maximum §179 amount is reduced to zero. In addition, Acorn must use the mid-quarter convention because it places more than 40 percent of its assets into service in the last quarter ((1,200,000+525,000)/2,525.000 = 68%). Acorn is eligible to take bonus depreciation on its new (not used) assets. Acorn's maximum cost recovery is $521,583, calculated as follows:

Asset	Original Basis	Bonus Depr	Remaining Basis	MACRS Rate	Depreciation Expense
New Equipment and Tools (7-year)	$800,000	$400,000	400,000	10.71%	$42,840
Used Light Duty Trucks (5-year)	1,200,000	-0-	1,200,000	5%	60,000
Used Machinery (7-year)	525,000	-0-	525,000	3.57%	18,743
Bonus depreciation					400,000
Total	2,525,000				$521,583

b. Acorn may want to consider the timing of its asset purchases. It may want to accelerate the purchases to the third quarter or defer them until the first quarter next year in order to avoid using the mid-quarter convention.

65. [LO 3] Phil owns a ranch business and uses 4-wheelers to do much of his work. Occasionally, though, he and his boys will go for a ride together as a family activity. During year 1, Phil put 765 miles on the 4-Wheeler that he bought on January 15 for $6,500. Of the miles driven, only 175 miles were for personal use. Assume 4-Wheelers qualify to be depreciated according to the 5-Year MACRS schedule and the 4-Wheeler was the only asset Phil purchased this year.

a. Calculate the allowable depreciation for year 1 (ignore the §179 expense and bonus depreciation).
b. Calculate the allowable depreciation for year 2 if total miles were 930 and personal use miles were 400 (ignore the §179 expense and bonus depreciation).

a. The depreciation expense will be $1,003 in year 1, calculated as follows:

Description	***Amount***	***Explanation***
(1) Original basis of 4-wheeler	*$6,500*	*Assumed in problem*
(2) MACRS depreciation rate	*20%*	*5-yr prop, yr. 1, ½ yr. convention.*

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(3) Full MACRS depreciation expense	*$1,300*	*(1) × (2)*
(4) Business use percentage	*77.12%*	*590 miles/765 miles*
Depreciation deduction for year	***$1,003***	*(3) × (4)*

b. The depreciation expense will be $1,185 in year 2, calculated as follows:

Description	***Amount***	***Explanation***
(1) Original basis of 4-wheeler	*$6,500*	*Assumed in problem*
(2) MACRS depreciation rate	*32%*	*5-yr prop, yr. 1, ½ yr. convention.*
(3) Full MACRS depreciation expense	*$2,080*	*(1) × (2)*
(4) Business use percentage	*56.99%*	*530 miles/930 miles*
Depreciation deduction for year	***$1,185***	*(3) × (4)*

66. [LO 3] Assume that Ernesto purchased a laptop computer on July 10 of year 1 for $3,000. In year 1, 80 percent of his computer usage was for his business and 20 percent was for computer gaming with his friends. This was the only asset he placed in service during year 1. Ignoring any potential §179 expense and bonus depreciation, answer the questions for each of the following alternative scenarios:

a. What is Ernesto's depreciation deduction for the computer in year 1?
b. What would be Ernesto's depreciation deduction for the computer in year 2 if his year 2 usage were 75 percent business and 25 percent for computer gaming?
c. What would be Ernesto's depreciation deduction for the computer in year 2 if his year 2 usage were 45 percent business and 55 percent for computer gaming?
d. What would be Ernesto's depreciation deduction for the computer in year 2 if his year 2 usage were 30 percent business and 70 percent for computer gaming?

a. The depreciation expense will be $480 in year 1, calculated as follows:

Description	***Amount***	***Explanation***
(1) Original basis of laptop	*$3,000*	*Assumed in problem*
(2) MACRS depreciation rate	*20%*	*5-yr prop, yr. 1, ½ yr. convention.*
(3) Full MACRS depreciation expense	*$600*	*(1) × (2)*
(4) Business use percentage	*80%*	*Assumed in the problem*
Depreciation deduction for year	***$480***	*(3) × (4)*

b. The depreciation expense will be $720 in year 2, calculated as follows:

Description	***Amount***	***Explanation***
(1) Original basis of laptop	*$3,000*	*Assumed in problem*
(2) MACRS depreciation rate	*32%*	*5-yr prop, yr. 1, ½ yr. convention.*
(3) Full MACRS depreciation expense	*$960*	*(1) × (2)*

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(4) Business use percentage	*75%*	*Assumed in the problem*
Depreciation deduction for year	***$720***	*(3) × (4)*

c. $30. Because his business usage is below 50%, Ernesto must use the straight-line method to determine depreciation. Using this method, his depreciation expense for year 2 is $270. However, because his business usage dropped from above to below 50%, he must also recalculate prior year depreciation using the straight line method. Any accelerated depreciation that he claimed in the prior year in excess of the straight-line amount for that prior year reduces the $270 of depreciation expense for year 2. In this case, the excess $240 depreciation reduces the $270, leaving $30 of depreciation expense as computed below.

Description	***Amount***	***Explanation***
(1) Straight-line depreciation in current year	*$270*	*$3,000/5 years × 45% business*
(2) Prior year straight-line depreciation	*$240*	*$3,000/5 × ½ year convention × 80% business use percentage*
(3) Prior year accelerated depreciation	*$480*	*From part "a" above*
(4) Excess accelerated depreciation	*$240*	*(3) – (2)*
Current year depreciation deduction	***$30***	*(1) – (4).*

d. Income of $60 (no depreciation deduction). Because his business usage in year 2 is below 50%, Ernesto must use the straight-line method to determine depreciation. Using this method, his depreciation expense is $180 in year 2 because his business use is 30%. Moreover, because the computer is listed property and fell below 50% business use, depreciation for year 1 must be recalculated using the straight-line method and any excess depreciation reduces the year 2 depreciation amount. In this case, the excess depreciation of $240 is $60 greater than the $180 straight line depreciation so Ernesto does not get to deduct depreciation expense in year 2, but instead he must recognize ordinary income of $60. The $60 of income is computed as follows:

Description	***Amount***	***Explanation***
(1) Straight-line depreciation in current year	*$180*	*$3,000/5 years × 30% business*
(2) Prior year straight-line depreciation	*$240*	*$3,000/5 × ½ year convention × 80% business use percentage*
(3) Prior year accelerated depreciation	*$480*	*From part "a" above*
(4) Excess accelerated depreciation	*$240*	*(3) – (2)*
Current year income	***($60)***	*(1) – (4).*

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67. [LO 3] Lina purchased a new car for use in her business during 2016. The auto was the only business asset she purchased during the year and her business was extremely profitable. Calculate her maximum depreciation deductions (including §179 expense unless stated otherwise) for the automobile in 2016 and 2017 (Lina doesn't want to take bonus depreciation for 2016 or 2017) in the following alternative scenarios (assuming half-year convention for all):

a. The vehicle cost $15,000 and business use is 100 percent (ignore §179 expense).
b. The vehicle cost $40,000, and business use is 100 percent.
c. The vehicle cost $40,000, and she used it 80 percent for business.
d. The vehicle cost $40,000, and she used it 80 percent for business. She sold it on March 1 of year 2.
e. The vehicle cost $40,000, and she used it 20 percent for business.
f. The vehicle cost $40,000 and is an SUV that weighed 6,500 pounds. Business use was 100 percent.

a. The depreciation expense is $3,000 in 2016 and $4,800 in 2017, *calculated as follows:*

Description	***2016 Amount***	***2017 Amount***	***Explanation***
(1) Original basis of auto	*$15,000*	*$15,000*	*Given in problem*
(2) MACRS depreciation rate	*20%*	*32%*	*5-yr prop, yr. 1, ½ yr. convention.*
(3) Full MACRS depreciation expense	*$3,000*	*$4,800*	*(1) ×(2)*
(4) Maximum auto depreciation	*$3,160*	*$5,100*	*Luxury auto limits*
Depreciation deduction for year	***$3,000***	***$4,800***	*Lesser of (3) or (4))*

b. The depreciation expense is $3,160 in 2016 and $5,100 in 2017, calculated as follows:

Description	***2016 Amount***	***2017 Amount***	***Explanation***
(1) Original basis of auto	*$40,000*	*$40,000*	*Given in problem*
(2) MACRS depreciation rate	*20%*	*32%*	*5-yr prop, yr. 1, ½ yr. convention.*
(3) Full MACRS depreciation expense	*$8,000*	*$12,800*	*(1) × (2)*
(4) Maximum auto depreciation	*$3,160*	*$5,100*	*Luxury auto limits*
Depreciation deduction for year	***$3,160***	***$5,100***	*Lesser of (3) or (4)*

c. The depreciation expense will be $2,528 in 2016 and $4,080 in 2017, calculated as follows:

Description	***2016***	***2017***	***Explanation***

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	Amount	***Amount***	
(1) Original basis of auto	*$40,000*	*$40,000*	*Given in problem*
(2) MACRS depreciation rate	*20%*	*32%*	*5-yr prop, yr. 1, ½ yr. convention.*
(3) Full MACRS depreciation expense	*$8,000*	*$12,800*	*(1) × (2)*
(4) Maximum auto depreciation	*$3,160*	*$5,100*	*Luxury auto limits*
(5) ***Depreciation deduction for year based on 100% business use***	***$3,160***	***$5,100***	*Lesser of (3) or (4)*
(6) Business use percentage	*80%*	*80%*	*Assumed in problem*
Depreciation deduction for year	***$2, 528***	***$4,080***	*(5) × (6)*

d. The depreciation expense will be $2,528 in 2016 (as calculated in part c above). The depreciation expense will be $2,040 in 2017, calculated as follows:

Description	***2017 Amount***	***Explanation***
(1) Original basis of auto	*$40,000*	*Given in problem*
(2) MACRS depreciation rate	*32%*	*5-yr prop, yr. 1, ½ yr. convention.*
(3) Full MACRS depreciation expense	*$12,800*	*(1) × (2)*
(4) Maximum auto depreciation	*$5,100*	*Luxury auto limit year 2*
(5) Depreciation for entire year	***$5,100***	*Lesser of (3) or (4)*
(6) Partial year	***50%***	*Half year of depreciation (half-year convention)*
(7) Depreciation deduction for year	***$2,550***	
(8) Business use percentage	*80%*	*Assumed in problem*
Depreciation deduction for year	***$2,040***	*(7) × (8)*

e. The depreciation expense will be $632 in 2016 and $1,020 in 2017, calculated as follows:

Description	***2016 Amount***	***2017 Amount***	***Explanation***
(1) Original basis of auto	*$40,000*	*$40,000*	*Given in problem*
(2) MACRS (Straight-line) depreciation rate	*10%*	*20%*	*5-yr straight-line, ½ yr. convention.*
(3) Full MACRS depreciation expense	*$4,000*	*$8,000*	*(1) × (2)*
(4) Maximum auto depreciation	*$3,160*	*$5,100*	*Luxury auto limits*
(5) ***Depreciation deduction for year based on 100% business use***	***$3,160***	***$5,100***	*Lesser of (3) or (4)*
(6) Business use percentage	*20%*	*20%*	*Assumed in problem*
Depreciation deduction for year	***$632***	***$1,020***	*(5) × (6)*

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f. The depreciation expense will be $28,000 in 2016 and $4,800 in 2017, calculated as follows:

Description	***2016 Amount***	***2017 Amount***	***Explanation***
(1) Original basis of auto	*$40,000*	*N/A*	*Given in problem*
(2) Section 179 expense	*$25,000*	*N/A*	*Maximum §179 expense for SUV*
(3) Depreciable basis	*$15,000*	*$15,000*	*(1) – (2)*
(4) MACRS depreciation rate	*20%*	*32%*	*5-yr prop, yr. 1, ½ yr. convention.*
(5) Full MACRS depreciation expense	*$3,000*	***$4,800***	*(3) × (4)*
Depreciation deduction in including §179 expense for year	***$28,000***	***$4,800***	*(2) + (5)*

Note that the depreciation is maximized in b – e even without the §179 expense.

68. [LO 2, LO 3] Burbank Corporation (calendar-year end) acquired the following property this year:

Asset	**Placed in Service**	**Basis**
Used Copier	February 12	$7,800
New Computer Equipment	June 6	14,000
Furniture	July 15	32,000
New Delivery Truck	October 28	19,000
Luxury Auto	December 31	70,000
Total		$142,800

a. Assuming no bonus or §179 expense, what is Burbank's maximum cost recovery for this year?
b. Assuming Burbank would like to maximize its cost recovery by electing bonus and §179 expense, which assets should Burbank immediately expense?
c. What is Burbank's maximum cost recovery this year assuming it elects §179 expense and bonus depreciation?

a. Burbank Corporation must use the mid-quarter convention to determine its cost recovery because more than 40% ((19,000 + 70,000)/142,800 = 62%) of its assets are placed in service in its fourth quarter. The cost recovery on the luxury auto is limited to the maximum $3,160 for the year. Burbank's cost recovery is $13,767, calculated as follows:

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Asset	Original Basis	Convention/ Quarter	Rate	Depreciation Expense
Used Copier (5 yr)	$7,800	MQ – Q1	35%	$2,730
New Computer Equipment (5 yr)	14,000	MQ – Q2	25%	3,500
Furniture (7 yr)	32,000	MQ – Q3	10.71%	3,427
New Delivery Truck (5 yr)	19,000	MQ – Q4	5%	950
Luxury Auto (5 yr – limited)	70,000	MQ – Q4	-	3,160
Total				$13,767

b. Burbank is not subject to the §179 asset limitation and may expense all of its assets using §179 expense except the luxury auto.

c. Burbank's maximum cost recovery assuming it elects bonus and §179 expense is $83,960. The cost recovery on the luxury auto is limited to $8,000 of bonus depreciation plus the limited $3,160 under the luxury automobile provisions.

Asset	Original Basis	§179 Expense	Remaining Basis	Bonus Depreciation	Remaining Basis	Depreciation Expense
Copier (5-year)	$7,800	$7,800	$-0-	$-0-	$-0-	$-0-
Computer Eq (5-year)	14,000	14,000	-0-	-0-	-0-	-0-
Furniture (7-year)	32,000	32,000	-0-	-0-	-0-	-0-
Delivery Truck (5-year)	19,000	19,000	-0-	-0-	-0-	-0-
Luxury Auto (5-year)	$70,000	0	70,000	8,000	62,000	3,160
§179 Expense						$72,800
Bonus depreciation				$8,000		$8,000
Total Cost Recovery						$83,960

69. [LO 3] [Research] Paul Vote purchased the following assets this year (ignore §179 expensing and bonus depreciation when answering the questions below):

Asset	Purchase Date	Basis
Machinery	May 12	$23,500
Computers	August 13	$20,000
Warehouse	December 13	$180,000

a. What is Paul's allowable MACRS depreciation expense for the property?

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b. What is Paul's allowable alternative minimum tax (AMT) depreciation expense for the property? You will need to find the AMT depreciation tables to compute the depreciation.

a. $7,551, under the half-year convention, calculated as follows:

Asset	Original Basis	Rate	Depreciation Expense
Machinery	*$23,500*	*14.29%*	*$3,358*
Computers	*$20,000*	*20.00%*	*$4,000*
Nonresidential building	*$180,000*	*0.107%*	*$193*
Total Depreciation Expense			*$7,551*

b. $5,710, using the AMT table and the half-year convention, calculated as follows:

Asset	Original Basis	Rate	Depreciation Expense
Machinery (7 year 150% DB)	*$23,500*	*10.71%*	*$2,517*
Computers (5 year 150% DB)	*$20,000*	*15.00%*	*$3,000*
Nonresidential building (39-year straight-line)	*$180,000*	*0.107%*	*$193*
Total Depreciation Expense			*$5,710*

70. [LO 4] After several profitable years running her business, Ingrid decided to acquire the assets of a small competing business. On May 1 of year 1, Ingrid acquired the competing business for $300,000. Ingrid allocated $50,000 of the purchase price to goodwill. Ingrid's business reports its taxable income on a calendar-year basis.

a. How much amortization expense on the goodwill can Ingrid deduct in year 1, year 2, and year 3?
b. In lieu of the original facts, assume that Ingrid purchased only a phone list with a useful life of 5 years for $10,000. How much amortization expense on the phone list can Ingrid deduct in year 1, year 2, and year 3?

a. Ingrid could deduct $2,222 amortization expense on the goodwill in year 1 and $3,333 of amortization expense on the goodwill in years 2 and 3, computed as follows:

b.

Description	Amount	Explanation
(1) Basis of Goodwill	*$50,000*	*Provided*
(2) Recovery period	*180*	*15 years*
(3) Monthly amortization	*$277.78*	*(1) / (2)*

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(4) Months in year 1	*× 8*	*May through December*
(5) ***Year 1 straight-line amortization***	***$2,222***	*(3) × (4)*
(6) Months in years 2 and 3	*× 12*	*January through December*
(7) ***Years 2 and 3, annual straight-line amortization***	***$3,333***	*(3) × (6)*

b. Ingrid's amortization for the phone list for year 1 is $1,333, years 2 and 3 is $2,000, computed as follows:

Description	***Phone List***
(1) Basis of phone list	*$10,000*
(2) Recovery period in months	*60*
(3) Monthly amortization	*$166.67*
(4) Months in year 1	*× 8*
(5) ***Year 1 straight-line amortization***	***$1,333***
(6) Months in years 2 and 3	*× 12*
(7) ***Years 2 and 3, annual straight-line amortization***	***$2,000***

Since Ingrid purchased only the phone list, it is not considered a §197 intangible and will be amortized over its remaining useful life.

71. [LO 4] Juliette formed a new business to sell sporting goods this year. The business opened its doors to customers on June 1. Determine the amount of start-up costs Juliette can immediately expense (not including the portion of the expenditures that are amortized over 180 months) this year in the following alternative scenarios.

    a. She incurred start-up costs of $2,000.
    b. She incurred start-up costs of $45,000.
    c. She incurred start-up costs of $53,500.
    d. She incurred start-up costs of $63,000.
    e. How would you answer parts (a-d) if she formed a partnership or a corporation and she incurred the same amount of organizational expenditures rather than start-up costs (how much of the organizational expenditures would be immediately deductible)?

a. $2,000, computed as follows:

Start-up Expenses		
Description	***Amount***	***Explanation***
(1) Maximum immediate expense	*$5,000*	
(2) Total start-up costs	*$2,000*	*Given in problem*
(3) Phase-out threshold	*50,000*	

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(4) Immediate expense phase-out	*$0*	*(2) – (3)*
Allowable immediate expense	***$2,000***	*Lesser of (2) or [(1) minus – (4)]*

b. $5,000, computed as follows:

Start-up Expenses		
Description	***Amount***	***Explanation***
(1) Maximum immediate expense	*$5,000*	
(2) Total start-up costs	*$45,000*	*Given in problem*
(3) Phase-out threshold	*50,000*	
(4) Immediate expense phase-out	*$0*	*(2) – (3), not less than $0*
Allowable immediate expense	***$5,000***	*Lesser of (2) or [(1) minus – (4)]*

c. $1,500, computed as follows:

Start-up Expenses		
Description	***Amount***	***Explanation***
(1) Maximum immediate expense	*$5,000*	
(2) Total start-up costs	*$53,500*	*Given in problem*
(3) Phase-out threshold	*50,000*	
(4) Immediate expense phase-out	*$3,500*	*(2) – (3), not less than $0*
Allowable immediate expense	***$1,500***	*Lesser of (2) or [(1) minus – (4)]*

d. $0, computed as follows:

Organizational Expenditures		
Description	***Amount***	***Explanation***
(1) Maximum immediate expense	*$5,000*	
(2) Total start-up costs	*$63,000*	*Given in problem*
(3) Phase-out threshold	*50,000*	
(4) Immediate expense phase-out	*$13,000*	*(2) – (3)*
Allowable immediate expense	***$0***	*Lesser of (2) or [(1) minus – (4)] (not less than $0)*

e. The answers would be the same if these were organizational expenditures instead of start-up costs. Note, however, that organizational expenditures only apply to corporations and partnerships and do not apply to businesses organized as sole proprietorships.

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72. [LO 4] Nicole organized a new corporation. The corporation began business on April 1 of year 1. She made the following expenditures associated with getting the corporation started:

Expense	**Date**	**Amount**
Attorney fees for articles of incorporation	February 10	$32,000
March 1 – March 30 wages	March 30	$4,500
March 1 – March 30 rent	March 30	$2,000
Stock issuance costs	April 1	$20,000
April 1 – May 30 wages	May 30	$12,000

a. What is the total amount of the start-up costs and organizational expenditures for Nicole's corporation?
b. What amount of the start-up costs and organizational expenditures may the corporation immediately expense in year 1 (excluding the portion of the expenditures that are amortized over 180 months)?
c. What amount can the corporation deduct as amortization expense for the organizational expenditures and for the start-up costs for year 1 (not including the amount determined in part b)?
d. What would be the allowable organizational expenditures, including immediate expensing and amortization, if Nicole started a sole proprietorship instead?

a. The only qualifying organizational expenditure is the $32,000 of attorney fees related to the drafting articles of incorporation. The start-up costs are the wages ($4,500) and rent ($2,000) before business began. Therefore, total start-up costs are $6,500.

b. The corporation may immediately expense $5,000 of the organizational expenditure and $5,000 of the start-up costs because the amount of organizational expenditures is under $50,000 and the amount of start-up costs is under $50,000.

c. The corporation will deduct amortization expense of $1,350 for organizational expenditures and $75 of amortization for start-up costs, computed as follows:

Start-up costs		
Description	***Amount***	***Explanation***
(1) Maximum immediate expense	*$5,000*	*§195(b)(1)(A)(ii)*
(2) Total start-up expenditures	*$6,500*	
(3) Phase-out threshold	*50,000*	***§195(b)(1)(A)(ii)***

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(4) Immediate expense phase-out	*$0*	*(2) – (3), not less than $0*
(5) ***Allowable immediate expense***	***$5,000***	*(1) – (4)*
(6) Remaining organizational expenditures	*$1,500*	*(2) – (5)*
(7) Recovery period in months	*180*	*15 years* ***§195(b)(1)(B)***
(8) Monthly straight-line amortization	*8.33*	*(6) / (7)*
(9) Teton business months during year 1	*× 9*	*April through December*
Year 1 straight-line amortization for start-up costs	***$75***	*(8) × (9)*

Organizational expenditures		
Description	***Amount***	***Explanation***
(1) Maximum immediate expense	*$5,000*	*§248(a)(1)*
(2) Total organizational expenditures	*$32,000*	*Given in problem*
(3) Phase-out threshold	*50,000*	*§248(a)(1)(B)*
(4) Immediate expense phase-out	*$0*	*(2) – (3), not less than $0*
(5) ***Allowable immediate expense***	***$5,000***	*(1) – (4)*
(6) Remaining organizational expenditures	*$27,000*	*(2) – (5)*
(7) Recovery period in months	*180*	*15 years §248(a)(2)*
(8) Monthly straight-line amortization	*150*	*(6) / (7)*
(9) Teton business months during year 1	*× 9*	*April through December*
Year 1 straight-line amortization for organizational expenditures	***$1,350***	*(8) × (9)*

d. Organizational expenditures are only authorized for corporations (§248) and partnerships (§709). They are not authorized for sole proprietorships. Typically, sole proprietorships do not incur many of the expenses that would qualify as organizational expenditures anyway.

73. [LO 4] Bethany incurred $20,000 in research and experimental costs for developing a specialized product during July of year 1. Bethany went through a lot of trouble and spent $10,000 in legal fees to receive a patent for the product in August of year 3. Bethany expects the patent to have a remaining useful life of 10 years.
    a. What amount of research and experimental expenses for year 1, year 2, and year 3 may Bethany deduct if she elects to amortize the expenses over 60 months?
    b. How much *patent* amortization expense would Bethany deduct in year 3 assuming she elected to amortize the research and experimental costs over 60 months?
    c. If Bethany chose to capitalize but *not* amortize the research and experimental expenses she incurred in year 1, how much patent amortization expense would Bethany deduct in year 3?

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a. *The amortization of the research expenditures is $2,000 in year 1, $4,000 in year 2, and $2,333 in year 3, computed as follows:*

Description	***Amount***	***Explanation***
(1) ***Research and experimental expenses***	***$20,000***	*Given in problem*
(2) Recovery period in months	*60*	*60 months §174*
(3) Monthly straight-line amortization	*333.33*	*(1) / (2)*
(4) Bethany's business months during year 1	*× 6*	*July through December*
(5) Year 1 straight-line amortization	***$2,000***	*(3) × (4)*
(6) Bethany's business months during year 2	*12*	*January through December*
(7) Year 2 straight-line amortization	***$4,000***	*(3) × (5)*
(8) Bethany's business months during year 3 before patent is issued in August	***7***	*January through July, year 3*
(9) Year 3 straight-line amortization on research and experimentation costs	***2,333***	*(3) × (8)*
(10) Accumulated amortization through July of year 3	*8,333*	*(5) + (7) + (9)*
(11) Unamortized research and experimentation expenditures as of August, year 3	*$11,667*	*(1) – (10)* *Used in answer to part b*

b. *The patent amortization is $902.79, computed as follows:*

Description	***Amount***	***Explanation***
(1) Unamortized research and experimental expenses	***$11,667***	*See (11) part a above*
(2) Legal expenses related to patent	*$10,000*	*Given in problem*
(3) Amortizable expenses for patent	*$21,667*	*(1) + (2)*
(4) Recovery period in months	*120*	*10 year useful life*
(5) Monthly straight-line amortization	*180.56*	*(3) / (4)*
(6) Bethany's business months from August through December	*× 5*	
Year 3 straight-line amortization for patent	***$902.79***	*(5) × (6)*

c. *The patent amortization is $1,250, computed as follows:*

Description	***Amount***	***Explanation***
(1) ***Research and experimental expenses***	***$20,000***	*Given in problem (not amortized)*
(2) Legal expenses related to patent	*$10,000*	*Given in problem*
(3) Amortizable expenses	*$30,000*	*(1) + (2)*
(4) Recovery period in months	*120*	*10 year useful life*
(5) Monthly straight-line amortization	*250*	*(3) / (4)*

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(6) Bethany's business months from August through December	*× 5*	
Year 3 straight-line amortization for patent	***$1,250***	*(5) × (6)*

74. [LO 5] Last Chance Mine (LC) purchased a coal deposit for $750,000. It estimated it would extract 12,000 tons of coal from the deposit. LC mined the coal and sold it, reporting gross receipts of $1 million, $3 million, and $2 million for years 1 through 3, respectively. During years 1 – 3, LC reported net income (loss) from the coal deposit activity in the amount of ($20,000), $500,000, and $450,000, respectively. In years 1 – 3, LC actually extracted 13,000 tons of coal as follows:

		Depletion	**Tons extracted per year**		
(1)	(2)	(2)/(1)			
Tons of Coal	Basis	Rate	Year 1	Year 2	Year 3
12,000	$750,000	$62.50	2,000	7,200	3,800

a. What is Last Chance's cost depletion for years 1, 2, and 3?
b. What is Last Chance's percentage depletion for each year (the applicable percentage for coal is 10 percent)?
c. Using the cost and percentage depletion computations from the previous parts, what is Last Chance's actual depletion expense for each year?

a. Last Chance's cost depletion is $125,000 for year 1, $450,000 for year 2, and $175,000 for year 3, calculated as follows:

	Year 1	*Year 2*	*Year 3*	*Explanation*
(1) Tons extracted	*2,000*	*7,200*	*3,800*	
(2) Depletion rate	*$62.50*	*$62.50*	*$62.50*	
Cost Depletion Expense	*$125,000*	*$450,000*	*$175,000**	*(1) × (2)*

**This is the remaining basis. Under the cost depletion method, the taxpayer's amortization is limited to the cost basis in the natural resource. The full amount of amortization would have been $237,500 if this were not the case.*

b. Last Chance's percentage depletion for each year is calculated as follows:

	Year 1	*Year 2*	*Year 3*	*Explanation*
(1) Net income from activity (before depletion expense)	*($20,000)*	*$500,000*	*$450,000*	*Given in problem*
(2) Gross Income	*$1,000,000*	*$3,000,000*	*$2,000,000*	
(3) Percentage	*× 10%*	*× 10%*	*× 10%*	
(4) Percentage Depletion Expense before limit	*$100,000*	*$300,000*	*$200,000*	*(2) × (3)*
(5) 50% of net income limitation	*$0*	*$250,000*	*$225,000*	*(1) × 50%*

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Allowable percentage depletion	***$0***	***$250,000***	***$200,000***	*Lesser of (4) or (5)*

Note that percentage depletion is not limited to the basis in the property.

c. Depletion expense is the greater of cost depletion or percentage depletion calculated as follows:

Tax Depletion Expense

	Year 1	***Year 2***	***Year 3***	***Explanation***
(1) Cost depletion	*$125,000*	*$450,000*	*$175,000*	*Part a*
(2) Percentage depletion	*$0*	*$250,000*	*$200,000*	*Part b*
Deductible depletion expense	***$125,000***	***$450,000***	***$200,000***	*Greater of (1) or (2)*

Comprehensive Problems

75. Back in Boston, Steve has been busy creating and managing his new company, Teton Mountaineering (TM), which is based out of a small town in Wyoming. In the process of doing so, TM has acquired various types of assets. Below is a list of assets acquired during 2015:

Asset	**Cost**	**Date Place in Service**
Office furniture	$10,000	02/03/2015
Machinery	560,000	07/22/2015
Used delivery truck*	15,000	08/17/2015

*Not considered a luxury automobile, thus not subject to the luxury automobile limitations

During 2015, TM had huge success (and had no §179 limitations) and Steve acquired more assets the next year to increase its production capacity. These are the assets acquired during 2016:

Asset	**Cost**	**Date Place in Service**
Computers & Info. System	$40,000	03/31/2016
Luxury Auto†	80,000	05/26/2016
Assembly Equipment	475,000	08/15/2016
Storage Building	400,000	11/13/2016

†Used 100% for business purposes. .

TM generated taxable income in 2016 before any §179 expense of $732,500.

Required

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a. Compute the maximum 2015 depreciation deductions including §179 expense (ignoring bonus depreciation).
b. Compute the maximum 2016 depreciation deductions including §179 expense (ignoring bonus depreciation).
c. Compute the maximum 2016 depreciation deductions including §179 expense, but now assume that Steve would like to take bonus depreciation.
d. Ignoring part c, now assume that during 2016, Steve decides to buy a competitor's assets for a purchase price of $350,000. Compute the maximum 2016 cost recovery including §179 expense (ignoring bonus depreciation). Steve purchased the following assets for the lump-sum purchase price.

Asset	**Cost**	**Date Placed in Service**
Inventory	$20,000	09/15/2016
Office furniture	30,000	09/15/2016
Machinery	50,000	09/15/2016
Patent	98,000	09/15/2016
Goodwill	2,000	09/15/2016
Building	130,000	09/15/2016
Land	20,000	09/15/2016

e. Complete Part I of Form 4562 for part b (use the most current form available).

a. The 2015 depreciation deduction is $513,003.

Description	***Cost***	***Sec. 179 Expense***	***MACRS Basis***	***Current MACRS Expense***	***Total Expense***
Office Furniture	*10,000*	*10,000*	*-*	*-*	*10,000*
Machinery	*560,000*	*490,000*	*70,000*	*10,003*	*500,003*
Used Delivery Truck	*15,000*		*15,000*	*3,000*	*3,000*
Totals	*585,000*	*500,000*	*85,000*	*13,003*	*513,003*

b. The 2016 depreciation deduction is $529,387.

Description	*Cost*	*Sec. 179 Expense*	*MACRS Basis*	*Current MACRS Expense*	*Total Expense*
Office Equipment	*10,000*		*-*	*-*	*-*
Machinery	*560,000*		*70,000*	*17,143*	*17,143*
Used Delivery Truck	*15,000*		*15,000*	*4,800*	*4,800*

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Computers & Info. System	*40,000*	*25,000*	*15,000*	*3,000*	*28,000*
Luxury Auto	*80,000*		*80,000*	*3,160*	*3,160*
Assembly Equipment	*475,000*	*475,000*	*-*	*-*	*475,000*
Storage Building	*400,000*		*400,000*	*1,284*	*1,284*
Totals	*1,580,000*	*500,000*	*580,000*	*29,387*	*529,387*

c. The 2016 depreciation deduction is $543,387.

Description	*Cost*	*Sec. 179 Expense*	*Bonus*	*MACRS Basis*	*Current MACRS Expense*	*Total Expense*
Office Furniture	*10,000*				*-*	*-*
Machinery	*560,000*			*70,000*	*17,143*	*17,143*
Used Delivery Truck	*15,000*			*15,000*	*4,800*	*4,800*
Computers & Info. System	*40,000*	*25,000*	*7,500*	*7,500*	*1,500*	*34,000*
Luxury Auto	*80,000*		*8,000*	*72,000*	*3,160*	*11,160*
Assembly Equipment	*475,000*	*475,000*	*-*	*-*	*-*	*475,000*
Storage Building	*400,000*			*400,000*	*1,284*	*1,284*
Totals	*1,580,000*	*500,000*	*15,500*	*564,500*	*27,887*	*$ 543,387*

d. 2016 cost recovery is $545,443.

Description	*Cost*	*Sec. 179 Expense*	*MACRS Basis*	*Current Expense*	*Total Expense*
Office Furniture	*10,000*		*-*	*-*	*-*
Machinery	*560,000*		*70,000*	*17,143*	*17,143*
Used Delivery Truck	*15,000*		*15,000*	*4,800*	*4,800*
Computers & Info. System	*40,000*		*40,000*	*8,000*	*8,000*
Luxury Auto	*80,000*		*80,000*	*3,160*	*3,160*
Assembly Equipment	*475,000*	*475,000*	*-*	*-*	*475,000*
Storage Building	*400,000*		*400,000*	*1,284*	*1,284*

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Inventory	*20,000*		*n/a*	*-*	*-*
Office Furniture	*30,000*	*25,000*	*5,000*	*715*	*25,715*
Machinery	*50,000*		*50,000*	*7,145*	*7,145*
Patent	*98,000*		*98,000*	*2,178*	*2,178*
Goodwill	*2,000*		*2,000*	*44*	*44*
Building	*130,000*		*130,000*	*974*	*974*
Land	*20,000*		*n/a*	*-*	*-*
Totals	*1,930,000*	*500,000*	*890,000*	*45,443*	*545,443*

e. Complete Part I of Form 4562 for part b.

Form **4562** — **Depreciation and Amortization** (Including Information on Listed Property) — OMB No. 1545-0172 — 2015

Department of the Treasury, Internal Revenue Service (99) — ▶ Attach to your tax return. ▶ Information about Form 4562 and its separate instructions is at *www.irs.gov/form4562*. — Attachment Sequence No. 179

Name(s) shown on return	Business or activity to which this form relates	Identifying number
Steve Dallimore	Teton Mountaineering	

Part I **Election To Expense Certain Property Under Section 179**
Note: If you have any listed property, complete Part V before you complete Part I.

1	Maximum amount (see instructions)	1	500,000
2	Total cost of section 179 property placed in service (see instructions)	2	595,000
3	Threshold cost of section 179 property before reduction in limitation (see instructions)	3	2,010,000
4	Reduction in limitation. Subtract line 3 from line 2. If zero or less, enter -0-	4	-0-
5	Dollar limitation for tax year. Subtract line 4 from line 1. If zero or less, enter -0-. If married filing separately, see instructions	5	500,000

6 (a) Description of property	(b) Cost (business use only)	(c) Elected cost
Computers & info systems	40,000	25,000
Assembly equipment	475,000	475,000

7	Listed property. Enter the amount from line 29	7	
8	Total elected cost of section 179 property. Add amounts in column (c), lines 6 and 7	8	500,000
9	Tentative deduction. Enter the **smaller** of line 5 or line 8	9	500,000
10	Carryover of disallowed deduction from line 13 of your 2014 Form 4562	10	
11	Business income limitation. Enter the smaller of business income (not less than zero) or line 5 (see instructions)	11	732,500
12	Section 179 expense deduction. Add lines 9 and 10, but do not enter more than line 11	12	500,000
13	Carryover of disallowed deduction to 2016. Add lines 9 and 10, less line 12 ▶	13	

Note: Do not use Part II or Part III below for listed property. Instead, use Part V.

Part II **Special Depreciation Allowance and Other Depreciation (Do not** include listed property.**)** (See instructions.)

14	Special depreciation allowance for qualified property (other than listed property) placed in service during the tax year (see instructions)	14	
15	Property subject to section 168(f)(1) election	15	
16	Other depreciation (including ACRS)	16	

Part III **MACRS Depreciation (Do not** include listed property.**)** (See instructions.)

Section A

17	MACRS deductions for assets placed in service in tax years beginning before 2015	17	
18	If you are electing to group any assets placed in service during the tax year into one or more general asset accounts, check here ▶ ☐		

76. While completing undergraduate school work in information systems, Dallin Bourne and Michael Banks decided to start a business called ISys Answers which was a technology support company. During year 1, they bought the following assets and incurred the following fees at start-up:

Year 1 Assets	**Purchase Date**	**Basis**
Computers (5-year)	October 30, Y1	$15,000

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Office equipment (7-year)	October 30, Y1	$10,000
Furniture (7-year)	October 30, Y1	$3,000
Start-up costs	October 30, Y1	$17,000

In April of year 2, they decided to purchase a customer list from a company started by fellow information systems students preparing to graduate who provided virtually the same services. The customer list cost $10,000 and the sale was completed on April 30th. During their summer break, Dallin and Michael passed on internship opportunities in an attempt to really grow their business into something they could do full time after graduation. In the summer, they purchased a small van (for transportation, not considered a luxury auto) and a pinball machine (to help attract new employees). They bought the van on June 15, Y2 for $15,000 and spent $3,000 getting it ready to put into service. The pinball machine cost $4,000 and was placed in service on July 1, Y2.

Year 2 Assets	**Purchase Date**	**Basis**
Van	June 15, Y2	$18,000
Pinball Machine (7-year)	July 1, Y2	$4,000
Customer List	April 30, Y2	$10,000

Assume that ISys Answers does not claim any §179 expense or bonus depreciation.

a. What are the maximum cost recovery deductions for ISys Answers for Y1 and Y2?
b. Complete ISys Answers' Form 4562 (use the most current form available).
c. What is ISys Answers' basis in each of its assets at the end of Y2?

a. ISys Answers' Y1 cost recovery deductions are $6,414, including the expensing of the start-up costs. ISys Answers' Y2 cost recovery deductions are $14,754.

Y1 Cost Recovery

Asset	*Original Basis*	*Expense*	*Remaining Basis*	*Quarter*	*Rate*	*Cost Recovery Expense*
Computer Equipment	*$15,000*		*$15,000*	*4th*	*5.00%*	*$750*
Office Equipment	*$10,000*		*$10,000*	*4th*	*3.57%*	*$357*
Furniture	*$3,000*		*$3,000*	*4th*	*3.57%*	*$107*
Start-up costs	*$17,000*	*$5,000*	*$12,000*	*N/A*	*See below*	*$200*
Start-up immediate expense						*$5,000*
Total Cost Recovery Expense						*$6,414*

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Start-up costs Y1		
Description	***Amount***	***Explanation***
(1) Maximum immediate expense	*$5,000*	*§195*
(2) Total start-up costs	*$17,000*	*Given in problem*
(3) Phase-out threshold	*50,000*	*§195*
(4) Immediate expense phase-out	*$0*	*(2) – (3); not less than $0*
(5) ***Allowable immediate expense***	***$5,000***	*(1) – (4)*
(6) Remaining start-up costs	*$12,000*	*(2) – (5)*
(7) Recovery period in months	*180*	*15 years §195*
(8) Monthly straight-line amortization	*66.67*	*(6) / (7)*
(9) ISys' business months during year 1	*× 3*	*October through December*
Year 1 straight-line amortization for start-up costs	***$200***	*(8) × (9)*

Y2 Cost Recovery

Asset	***Original Basis***	***Expense***	***Remaining Basis***	***Quarter***	***Rate***	***Cost Recovery Expense***
Computer Equipment	*$15,000*		*$15,000*	*4th*	*38.00%*	*$5,700*
Office Equipment	*$10,000*		*$10,000*	*4th*	*27.55%*	*$2,755*
Furniture	*$3,000*		*$3,000*	*4th*	*27.55%*	*$827*
Start-up costs	*$17,000*	*$5,000*	*$12,000*	*N/A*	*$66.67 × 12*	*$800*
Delivery van	*$18,000*			*HY*	*20.00%*	*$3,600*
Pinball machine	*$4,000*			*HY*	*14.29%*	*$572*
Customer List	*$10,000*			*N/A*	*See below*	*$500*
Total Cost Recovery Expense						*$14,754*

Description	***Amount***	***Explanation***
(1) Customer list (section 197 intangible)	***$10,000***	
(2) Recovery period in months	*180*	*Section 197*
(3) Monthly straight-line amortization	*55.56*	*(1) / (2)*
(4) April through December	*× 9*	
Year 1 straight-line amortization for customer list	***$500***	*(3) × (4)*

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b. ISys Answers' Form 4562 is as follows:

Form **4562** — Department of the Treasury, Internal Revenue Service (99)

Depreciation and Amortization
(Including Information on Listed Property)
▶ Attach to your tax return.
▶ Information about Form 4562 and its separate instructions is at *www.irs.gov/form4562.*

OMB No. 1545-0172
2015
Attachment Sequence No. 179

Name(s) shown on return: ISys Answers | Business or activity to which this form relates | Identifying number

Part I **Election To Expense Certain Property Under Section 179**
Note: If you have any listed property, complete Part V before you complete Part I.

1	Maximum amount (see instructions)	1	
2	Total cost of section 179 property placed in service (see instructions)	2	
3	Threshold cost of section 179 property before reduction in limitation (see instructions)	3	
4	Reduction in limitation. Subtract line 3 from line 2. If zero or less, enter -0-	4	
5	Dollar limitation for tax year. Subtract line 4 from line 1. If zero or less, enter -0-. If married filing separately, see instructions	5	

6	(a) Description of property	(b) Cost (business use only)	(c) Elected cost

7	Listed property. Enter the amount from line 29	7	
8	Total elected cost of section 179 property. Add amounts in column (c), lines 6 and 7	8	
9	Tentative deduction. Enter the **smaller** of line 5 or line 8	9	
10	Carryover of disallowed deduction from line 13 of your 2014 Form 4562	10	
11	Business income limitation. Enter the smaller of business income (not less than zero) or line 5 (see instructions)	11	
12	Section 179 expense deduction. Add lines 9 and 10, but do not enter more than line 11	12	
13	Carryover of disallowed deduction to 2016. Add lines 9 and 10, less line 12 ▶	13	

Note: Do not use Part II or Part III below for listed property. Instead, use Part V.

Part II **Special Depreciation Allowance and Other Depreciation (Do not** include listed property.**)** (See instructions.)

14	Special depreciation allowance for qualified property (other than listed property) placed in service during the tax year (see instructions)	14	
15	Property subject to section 168(f)(1) election	15	
16	Other depreciation (including ACRS)	16	

Part III **MACRS Depreciation (Do not** include listed property.**)** (See instructions.)

Section A

17	MACRS deductions for assets placed in service in tax years beginning before 2015	17	
18	If you are electing to group any assets placed in service during the tax year into one or more general asset accounts, check here ▶ ☐		

Section B—Assets Placed in Service During 2015 Tax Year Using the General Depreciation System

(a) Classification of property	(b) Month and year placed in service	(c) Basis for depreciation (business/investment use only—see instructions)	(d) Recovery period	(e) Convention	(f) Method	(g) Depreciation deduction
19a 3-year property						
b 5-year property		15,000	5 year	HY	DDB	750
c 7-year property		13,000	7 year	HY	DDB	464
d 10-year property						
e 15-year property						
f 20-year property						
g 25-year property			25 yrs.		S/L	
h Residential rental property			27.5 yrs.	MM	S/L	
			27.5 yrs.	MM	S/L	
i Nonresidential real property			39 yrs.	MM	S/L	
				MM	S/L	

Section C—Assets Placed in Service During 2015 Tax Year Using the Alternative Depreciation System

20a Class life					S/L	
b 12-year			12 yrs.		S/L	
c 40-year			40 yrs.	MM	S/L	

Part IV **Summary** (See instructions.)

21	Listed property. Enter amount from line 28	21	
22	**Total.** Add amounts from line 12, lines 14 through 17, lines 19 and 20 in column (g), and line 21. Enter here and on the appropriate lines of your return. Partnerships and S corporations—see instructions	22	1,214
23	For assets shown above and placed in service during the current year, enter the portion of the basis attributable to section 263A costs	23	

For Paperwork Reduction Act Notice, see separate instructions. Cat. No. 12906N Form **4562** (2015)

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Part VI Amortization

(a) Description of costs	(b) Date amortization begins	(c) Amortizable amount	(d) Code section	(e) Amortization period or percentage	(f) Amortization for this year
42 Amortization of costs that begins during your 2015 tax year (see instructions):					
Start up costs	10/30/14	12,000	195	15 years	200
43 Amortization of costs that began before your 2015 tax year				43	
44 **Total.** Add amounts in column (f). See the instructions for where to report				44	200

Form **4562** (2015)

c. ISys Answers' basis is as follows:

Asset	*Original Basis*	*Expense*	*Adjusted Basis Year 1 Cost Recovery*	*Year 2 Cost Recovery*	*Y2 Ending Basis*
Computer Equipment	*$15,000*		*$750*	*$5,700*	*$8,550*
Office Equipment	*10,000*		*357*	*2,755*	*6,888*
Furniture	*3,000*		*107*	*827*	*2,066*
Start-up costs	*17,000*	*$5,000*	*200*	*800*	*11,000*
Delivery van	*18,000*			*3,600*	*14,400*
Pinball machine	*4,000*			*572*	*3,428*
Customer List	*10,000*			*500*	*9,500*
Totals	*$77,000*	*$5,000*	*$1,414*	*$14,754*	*$55,832*

77. Diamond Mountain was originally thought to be one of the few places in North America to contain diamonds, so Diamond Mountain Inc. (DM) purchased the land for $1,000,000. Later, DM discovered that the only diamonds on the mountain had been planted there and the land was worthless for mining. DM engineers discovered a new survey technology and discovered a silver deposit estimated at 5,000 pounds on Diamond Mountain. DM immediately bought new drilling equipment and began mining the silver.

    In years 1-3 following the opening of the mine, DM had net (gross) income of $200,000 ($700,000), $400,000 ($1,100,000), and $600,000 ($1,450,000), respectively. Mining amounts for each year were as follows: 750 pounds (year 1), 1,450 pounds (year 2), and 1,800 pounds (year 3). At the end of year 2, engineers used the new technology (which had been improving over time) and estimated there was still an estimated 6,000 pounds of silver deposits.

    DM also began a research and experimentation project with the hopes of gaining a patent for its new survey technology. Diamond Mountain Inc. chooses to capitalize

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research and experimentation expenditures and amortize the costs over 60 months or until it obtains a patent on its technology. In March of year 1, DM spent $95,000 on research and experimentation. DM spent another $75,000 in February of year 2 for research and experimentation. In September of year 2, DM paid $20,000 of legal fees and was granted the patent in October of year 2 (the entire process of obtaining a patent was unusually fast).

Answer the following questions regarding DM's activities (assume that DM tries to maximize its deductions if given a choice).

a. What is DM's depletion expense for years 1 - 3?
b. What is DM's research and experimentation amortization for years 1 and 2?
c. What is DM's basis in its patent and what is its amortization for the patent in year 2?

a. DM's depletion expense is as follows, actual cost and percentage depletion are shown below:

Actual Depletion		
Original basis	*$*	*1,000,000*
Year 1 depletion (cost depletion)	*$*	*(150,000)*
Year 1 Ending basis	*$*	*850,000*
Year 2 depletion (cost depletion)	*$*	*(165,431)*
Year 2 Ending basis	*$*	*684,569*
Year 3 depletion (percentage depletion)	*$*	*(217,500)*
Year 3 Ending basis	*$*	*467,069*

Cost Depletion Method

	Year 1	***Year 2***	***Year 3***
Year 1 Beginning basis	*$1,000,000*	*$850,000*	*$684,569*
Estimated pounds of silver in mine at beginning of year	*5,000*	*7,450*	*6,000*
Basis depletion per pound	*$ 200*	*$ 114.09*	*$114.09*
Pounds of silver mined in year	*750*	*1,450*	*1,800*
Year depletion	*$150,000*	*$165,431*	*$205,362*
Basis at end of year	*$ 850,000*	*$ 684,569*	*$ 479,207*

Percentage Depletion Method

	Year 1	***Year 2***	***Year 3***
Net income	*$ 200,000*	*$ 400,000*	*$ 600,000*
Gross income	*$ 700,000*	*$1,100,000*	*$ 1,450,000*

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Percentage	*15%*	*15%*	*15%*
Percentage depletion expense before limit	*$ 105,000*	*$ 165,000*	*$ 217,500*
50% of net income limitation	*$ 100,000*	*$ 200,000*	*$ 300,000*
Allowable percentage depletion	*$ 100,000*	*$ 165,000*	*$ 217,500*

b. DM's research and experimentation amortization for years 1 and 2 are as follows:

Description	***Year 1 Amount***	***Year 2 Amount***	
Research and experimental expenses	*$95,000*	*$75,000*	
Recovery period in months	*60*	*60*	
Monthly straight-line amortization	*$1,583.33*	*$1,250*	
DM's business months during year 1	*10*	*0*	
Year 1 straight-line amortization	*$15,833*	*$ -*	
DM's business months during year 2 before the patent is issued	*9*	*8*	
Year 2 straight-line amortization	*$14,250*	*$10,000*	
Accumulated amortization through September of year 2	*$30,083*	*$10,000*	
Unamortized Research and experimentation	*$64,917*	*$65,000*	*$129,917*

c. DM's basis in its patent and amortization for patent in year 2 are as follows:

Description	***Amount***
Unamortized research and experimental expenses	***$129,917***
Legal expenses related to patent	*$20,000*
Amortizable expenses for patent	*$149,917*
Recovery period in months	*204*
Monthly straight-line amortization	*734.89*
DM's business months from October through December	*3*
Year 2 straight-line amortization for patent	***$2,205***

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Chapter 2
Property Acquisition and Cost Recovery

INSTRUCTOR'S MANUAL

Learning Objectives

1. Explain the concept of basis and adjusted basis and describe the cost recovery methods used under the tax law to recover the cost of personal property, real property, intangible assets, and natural resources.
2. Determine the applicable cost recovery (depreciation) life, method, and convention for tangible personal and real property and calculate the deduction allowable under basic MACRS.
3. Explain the additional special cost recovery rules (§179, bonus, listed property) and calculate the deduction allowable under these rules.
4. Explain the rationale behind amortization, describe the four categories of amortizable intangible assets, and calculate amortization expense.
5. Explain cost recovery of natural resources and the allowable depletion methods.

Teaching Suggestions

This chapter is organized around issues dealing with acquiring assets and cost recovery. There are many topics in this chapter. The instructor may not wish to cover all topics.

Depreciation is something accounting students have learned in introduction to financial and managerial accounting. So it is easy to build on that background. The section was written to cover the basics of method, recovery period and convention. Once these principles are understood, the application to any tax depreciation problem is relatively simple. There has been a significant amount of legislative activity providing preferences to specific assets which can be interesting to discuss (e.g. motorsports entertainment complexes, qualified leasehold, retail, and restaurant property, etc.). There are also a lot of provisions designed to prevent perceived abuses in the listed property area—one point of contention between taxpayers and the Internal Revenue Service has been with respect to cell phones. Recently, the IRS has removed cell phones from listed property requirements. Another development is the recent issuance of the repair regulations. Although the chapter does not provide great detail on the new regulations, it provides instructors with an opportunity to add a research component to this content.

During the recent tax stimulus provisions enacted during the past decade bonus depreciation and additional §179 expensing have been used substantially. These items can either be discussed in detail or from a theoretical perspective. The primary discussion of these provisions assumes they will be extended to the current year; however, there is also a discussion assuming they are not extended.

Amortization can be relatively straightforward. For those focusing on small business, the start-up expenditures and organizational cost provisions are important. All others may want to focus on the acquisition of §197 intangibles.

Depletion is a topic that is often not covered. The President's budget proposes several changes to the oil and gas tax incentives if you want to discuss current legislative activity.

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Assignment Matrix

			Learning Objectives					Text Feature		
		Difficulty	LO1	LO2	LO3	LO4	LO5	Research	Planning	Tax Forms
DQ2-1	10 min.	Easy	X							
DQ2-2	10 min.	Easy	X							
DQ2-3	15 min.	Easy	X							
DQ2-4	10 min.	Easy	X							
DQ2-5	15 min.	Easy	X							
DQ2-6	10 min.	Easy	X							
DQ2-7	10 min.	Easy	X							
DQ2-8	10 min.	Easy		X						
DQ2-9	10 min.	Easy		X						
DQ2-10	10 min.	Easy		X					X	
DQ2-11	15 min.	Easy		X						
DQ2-12	10 min.	Easy		X						
DQ2-13	10 min.	Easy		X				X		
DQ2-14	10 min.	Easy		X						
DQ2-15	10 min.	Easy		X						
DQ2-16	10 min.	Easy		X						
DQ2-17	10 min	Easy		X						
DQ2-18	10 min.	Easy		X						
DQ2-19	10 min	Easy		X				X		
DQ2-20	15 min.	Easy		X						
DQ2-21	15 min.	Easy			X					
DQ2-22	15 min.	Easy			X					
DQ2-23	15 min.	Easy			X					
DQ2-24	15 min.	Easy			X					
DQ2-25	15 min.	Easy			X					
DQ2-26	15 min.	Easy			X					
DQ2-27	15 min.	Easy			X					
DQ2-28	15 min.	Easy			X					
DQ2-29	15 min.	Medium			X					
DQ2-30	15 min.	Easy				X				
DQ2-31	15 min.	Easy				X				
DQ2-32	15 min.	Easy				X				
DQ2-33	15 min.	Easy				X				
DQ2-34	15 min.	Easy				X				
DQ2-35	15 min.	Easy				X				
DQ2-36	15 min.	Easy					X			
DQ2-37	15 min.	Easy					X			
P2-38	20 min.	Easy	X							
P2-39	20 min.	Medium	X					X		
P2-40	20 min.	Medium	X					X		

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P2-41	20 min.	Easy	X							
P2-42	10 min.	Easy	X							
P2-43	10 min.	Easy	X							
P2-44	15 min.	Easy	X							
P2-45	25 min.	Medium	X							
P2-46	30 min	Medium		X						
P2-47	30 min	Medium		X						
P2-48	30 min	Medium		X						
P2-49	25 min.	Medium		X						
P2-50	35 min	Medium		X						
P2-51	35 min	Medium		X						
P2-52	35 min	Medium		X					X	
P2-53	40 min.	Medium		X						
P2-54	35 min.	Medium		X						
P2-55	20 min	Easy		X						
P2-56	35 min.	Medium		X	X					
P2-57	30 min.	Medium		X	X					
P2-58	40 min.	Medium		X	X					
P2-59	35 min	Medium		X	X				X	
P2-60	45 min.	Hard		X	X			X		
P2-61	40 min.	Hard		X	X					
P2-62	60 min.	Hard		X	X			X	X	
P2-63	60 min	Hard		X	X				X	
P2-64	45 min.	Hard		X	X				X	
P2-65	25 min.	Medium			X					
P2-66	25 min.	Medium			X					
P2-67	25 min.	Medium			X					
P2-68	30 min.	Medium		X	X					
P2-69	30 min.	Medium			X			X		
P2-70	45 min.	Hard				X				
P2-71	30 min.	Medium				X				
P2-72	30 min.	Medium				X				
P2-73	30 min.	Hard				X				
P2-74	30 min.	Medium					X			
CP2-75	75 min.	Hard								X
CP2-76	75 min.	Hard								X
CP2-77	75 min.	Hard								

Lecture Notes

1) Cost Recovery and Basis for Cost Recovery
   a) For financial accounting and tax accounting purposes, businesses must capitalize the cost of assets with a useful life of more than one year rather than expense the cost immediately.
   b) Methods used to recover the cost of assets through cost recovery deductions:
      i) Depreciation
      ii) Amortization
      iii) Depletion
      iv) Refer to Exhibit 2-1 for Assets and Cost Recovery and Exhibit 2-2 for Weyerhaeuser Assets.

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c) Basis for Cost Recovery
   i) Recouping the cost of assets starts when the business starts using the assets.
   ii) The amount of an asset's cost that has to be recovered through cost recovery deductions is called assets adjusted basis or tax basis.
      (1) An Asset's Adjusted Basis = Asset's Initial Cost or Historical Cost minus Accumulated Depreciation (or Amortization or Depletion)
   iii) Cost Basis is usually the same for book and tax purposes.
   iv) An asset's cost basis includes all expenses needed to purchase the asset, prepare it for use, and begin using it.
      (1) Work through Example 2-1.
   v) New repair regulations provide guidance on whether costs incurred after acquisition should be capitalized or immediately deducted. Several safe harbors exist: de minimis and routine maintenance for example.
      (1) Work through Example 2-2.
   vi) Special basis rules apply when personal assets are converted to business use and when assets are acquired through nontaxable transactions, gifts, or inheritances.

2) Depreciation
   a) To depreciate an asset, a business must determine:
      i) Original basis
      ii) Depreciation method
      iii) Recovery period
      iv) Depreciation convention
   b) Today businesses use MACRS – Modified Accelerated Cost Recovery System
   c) Personal Property Depreciation
      i) Includes all tangible property, such as computers, automobiles, furniture, machinery and equipment, other than real property.
      ii) Personal property is relatively short-lived and subject to obsolescence when compared to real property.
      iii) Depreciation method
         (1) MACRS provide three acceptable methods for depreciating personal property:
            (a) 200 percent (double) declining balance (default method);
            (b) 150 percent declining balance; and
            (c) Straight line.
         (2) Work through Example 2-3.
      iv) Depreciation recovery period
         (1) For financial accounting purposes, an asset's recovery period (depreciable life) is based on its taxpayer- determined estimated useful life.
         (2) For tax purposes, an asset's recovery period is predetermined by IRS in the Rev. Proc. 87-56 which helps payers to categorize each of their assets based upon the property's description.
            (a) Refer to Exhibit 2-3 for Excerpt from Revenue Procedure 87-56.
            (b) Refer to Exhibit 2-4 for Recovery Period for Most Common Business Assets.
            (c) Refer to Exhibit 2-5 for Teton Personal Property Summary (Base Scenario).
      v) Depreciation conventions
         (1) It specifies the portion of a full year's depreciation the business can deduct for an asset in the year the asset is first placed in service and in the year the asset is sold.
         (2) For personal property – taxpayers must either use the half-year convention or the mid-quarter convention.
            (a) Half-year convention
               (i) One-half of a year's depreciation is allowed in the first and the last year of an asset's life.

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(ii) The IRS depreciation tables automatically account for the half-year convention
1. Refer to Table 1 (in chapter appendix) for MACRS-200 percent Declining Balance Using the Half-Year Convention.
2. Work through Example 2-4.

vi) Calculating Depreciation for Personal Property
(1) IRS provides depreciation percentage tables in Rev. Proc. 87-57
(2) Steps to determine the depreciation for the asset:
(a) Locate the applicable table provided in Rev. Proc. 87-57.
(b) Select the column that corresponds with the asset's recovery period.
(c) Find the row identifying the year of the asset's recovery period.
(d) Refer Table 1 for MACRS 200 percent Declining Balance Using the Half-Year Convention.

vii) Applying the Half-Year Convention
(1) Work through Example 2-5.
(2) Half-year convention for year of disposition
(a) Work through the Example 2-6.
(3) Mid-quarter convention
(a) The mid-quarter convention is required when more than 40 percent of a taxpayer's personal property placed in service during the year was placed during the fourth quarter.
(b) Each quarter has its own depreciation table. Once you begin using a table, you must use the table over the asset's whole life.
(c) If an asset is disposed of before it is fully depreciated, use the formula given to determine the allowable depreciation in the year of disposition.
(d) Steps to determine whether the mid-quarter convention applies are the following
(i) Sum the total basis of the tangible personal property that was placed in service during the year.
(ii) Sum the total basis of the tangible personal property that was place in service in the fourth quarter.
(iii) Divide the outcome of Step 2 by the outcome of Step 1. If the quotient is greater than 40 percent, the business must use the mid-quarter convention to determine the depreciation for all personal property the business places in service during the year. Otherwise, the business uses the half-year convention for depreciating this property.
(e) Work through Examples 2-7 and 2-8.

viii) Applying the Mid-Quarter Convention
(1) Work through Examples 2-9 and 2-10.
(2) Refer to Table 2a-d (in the chapter appendix) for Mid-Quarter Convention Tables.
(3) Mid-quarter convention for year of disposition
(a) Work through Example 2-11.

ix) Real Property
(1) Real property is depreciated using the straight line method.
(2) Real property uses the mid-month convention.
(3) Residential property has a recovery period of 27.5 years.
(4) Nonresidential property placed in service after 1993 has a life of 39 years.
(5) Refer to Exhibit 2-7 for Recovery Period for Real Property.
(a) Applicable method
(i) All depreciable real property is depreciated for tax purposes using the straight-line method.
(b) Applicable convention - All real property is depreciated using the mid-month convention.

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(c) Depreciation tables
  (i) Work through Example 2-12.
  (ii) Mid-month convention for the year of disposition
    1. Process for calculating
      a. Step 1: Determine the amount of depreciation expense for the asset as if the asset was held for the entire year.
      b. Step 2: Subtract one-half of a month from the month in which the asset was sold (if sold in third month, subtract .5 from 3 to get 2.5). (Subtract half of a month because the business is treated as though the asset was disposed of in the middle of the third month—not the end.)
      c. Step 3: Divide the amount determined in Step 2 by 12 months (2.5/12). This is the fraction of the full year's depreciation the business is eligible to deduct.
      d. Step 4: Multiply the Step 3 outcome by the full depreciation determined in Step 1.
      e. Formula: Full year's depreciation × (Month in which asset was disposed – 0.5)/12
      f. Work through Example 2-13.

x) Special Rules Relating to Cost Recovery
  (1) Immediate expensing
  (2) This incentive is commonly referred as §179 expense or immediate expensing election.
  (3) It helps small businesses to purchase new or used tangible personal property.
    (a) Work through Example 2-14.
  (4) Limits on immediate expensing
    (a) The maximum amount a business may elect to claim for the year is subject to a phase-out limitation.
      (i) Work through Examples 2-15 and 2-16.
  (5) Choosing the assets to immediately expense
    (a) $500,000 of tangible personal property is expected to be immediately expensed in 2016.
    (b) Businesses are eligible for the full amount of this expense when tangible personal property placed in service is less than $2,010,000 for 2016. Beginning at $2,010,000, the §179 expense is phased out, dollar-for dollar. When assets placed in service exceed $2,510,000, no §179 expense can be taken.
    (c) §179 expenses are also limited to a business's taxable income before the §179 expense. §179 expenses cannot create losses.
      (i) Work through Example 2-17.
  (6) Bonus depreciation
    (a) To stimulate the economy, policy makers occasionally implement bonus depreciation. In 2016, taxpayers can expense 50 percent of qualified property under the bonus depreciation rules assuming bonus depreciation is extended to 2016.
    (b) Work through the Example 2-18.
  (7) Listed property
    (a) When an asset is used for both personal and business use, calculate what percentage was used for business purposes.
    (b) If the business-use percentage is above 50 percent, the allowable depreciation is limited to the business use percentage.
    (c) If a listed property's business-use percentage falls below 50 percent, depreciation for all previous years is retroactively restated using MACRS straight line method.
    (d) Work through the Example 2-19.

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(e) Businesses can use the following five steps to determine its current depreciation expense for the asset:
(i) Compute depreciation for the year it drops to 50% or below using the straight-line method
(ii) Compute the amount of depreciation the taxpayer would have deducted if the taxpayer had used the straight-line method over the ADS recovery period for all prior years.
(iii) Compute the amount, taxpayer actually deducted on the assets for all prior years
(iv) Subtract amount of step 2 from step 3, which is prior year accelerated depreciation in excess of straight line depreciation
(v) Subtract the excess accelerated depreciation from Step 4 from the current year straight-line depreciation in Step 1. This is the business's allowable depreciation expense on the asset for the year. If the prior year excess depreciation from Step 4 exceeds the current year straight-line depreciation in Step 1, the business is not allowed to deduct any depreciation on the asset for the year and must actually recognize additional ordinary income for the amount of the excess.
(vi) Work through the Example 2-20.

(8) Luxury automobiles
(a) Depreciation on automobiles weighing less than 6,000 lbs. is subject to luxury auto provisions.
(b) Luxury automobiles have a maximum depreciation limit for each year.
(c) Listed property rules are also applicable to luxury automobiles.
(d) Refer Exhibit 2-8 for Automobile Depreciation Limits.
(e) Work through the Example 2-21.

xi) Depreciation for Alternative Minimum Tax
(1) For AMT purposes, the allowable recovery period and conventions are the same for all depreciable assets as they are for regular tax purposes.
(2) The difference between regular tax depreciation and AMT depreciation is an adjustment that is either added to or subtracted from regular taxable income in computing the alternative minimum tax base.

xii) Depreciation Summary
(1) Refer Exhibit 2-9 for Tax Depreciation Expense Summary and 2-10 for Teton's Form 4562 Parts I – IV for Depreciation.

3) Amortization
a) Businesses recover the cost of intangible assets through amortization rather than depreciation expense
b) For tax purposes, an intangible asset can be placed into one of the following four general categories:
i) Section197 Intangibles
(1) Purchased intangibles are amortized over a period of 180 months, regardless of their explicitly stated lifetimes.
(2) The full-month convention applies to amortizable assets which allows taxpayers to deduct an entire month's worth of amortization for the month of purchase and all subsequent months in the year
(3) Work through the Example 2-22.

ii) Organizational Expenditures and Start-Up Costs
(1) Organizational expenditures include expenditures to form and organize a business in the form of a corporation or a partnership.
(2) Start-up costs are incurred when a business is started
(3) Taxpayers may immediately expense up to $5,000 of organizational expenditures and $5,000 of start-up costs.

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(4) The $5,000 immediate expense rule has a dollar-for-dollar phase out that begins at $50,000, so that when expenses exceed $55,000, there is no immediate expensing.
(a) Work through the Examples 2-23 to 2-26.

c) Research and Experimentation Expenditures
i) Businesses often invest in activities which will generate innovative products or improve their current products or processes.
(1) Includes expenditures for research laboratories including salaries, materials, and other related expenses.

d) Patents and Copyrights
i) The manner in which a business amortizes a patent or copyright depends on whether the business directly purchases the patent or copyright or whether itself-creates the intangibles.
ii) Work through the Example 2-27.
iii) Refer Exhibit 2-12 for Summary of Amortizable Assets.
iv) Businesses amortize all intangible assets in these categories using the straight-line method for both book and tax purposes.

e) Amortizable Intangible Asset Summary
i) Refer Exhibit 2-13 for Teton Form 4562, Part VI Amortization of Organizational Expenditures and Patent.

4) Depletion
a) A method taxpayers use to recover their capital investment in natural resources.
b) It is particularly significant deduction for business in mining, oil and gas and forestry industries
c) Cost depletion involves estimating resource reserves and allocating a pro-rata share of basis based on the number of units extracted.
d) Percentage depletion is determined by a statutory percentage of gross income that is permitted to be expensed each year. Different resources have different statutory percentages (i.e., gold, tin, coal).
e) Taxpayers may expense the larger of cost or percentage depletion.
i) Work through the Examples 2-28, 2-29, and 2-30.
ii) Refer Exhibit 2-14 for Applicable Percentage Depletion Rates.

5) Appendix A- MACRS Tables

Ethics

From page 2-6:

ETHICS

Catherine Travis is starting a new business. She has several assets that she wants to use in her business that she has been using personally. Since she plans to convert several assets from personal to business use, she will need to find out how much each asset is worth so she can determine her basis for depreciating the assets. Catherine has decided that getting an appraisal would be too costly so she simply uses her cost basis for the assets. What do you think of Catherine's strategy for determining her business asset bases?

Discussion points:

- When converting assets from personal use to business use, the basis for business use will be the lesser of (1) the cost basis of the asset or (2) the fair market value on the date of conversion.
- The business basis is used to compute depreciation, gain or loss upon sale of the asset, and the character of any resulting gain or loss on the sale.

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- Catherine may be trying to convert a nondeductible personal loss into a deductible business loss by choosing the better of the two appraisals for the assets.

Class Activities

- **Tax Research:** Have students search for Revenue Procedure 87-56 and find the recovery period for some obscure assets. You can create a discussion around what the actual recovery period of certain assets should be.
- An interesting provision related to bonus depreciation is Section 168(k)(4). The provision was designed as a stimulus measure for NOL companies that could not take advantage of the current deductions provided by bonus depreciation. The provision provides an ability to cash out historic R&D and AMT credits in lieu of bonus depreciation. An interesting exercise is to have students locate the off-code provision contained in the history of this section (see also P.L. 12-289, §3081(b)). This provision was designed to provide Chrysler LLC with the same benefits that GM and Ford were to receive as C corporations under Section 168(k)(4).
- **Legislative Activity:** Senate Bill 844 (S 844) sponsored by Senators Bingaman and Grassley would significantly extend the recovery period for Public Private Partnership (P3) tangible and intangible assets. These deals sell publicly owned infrastructure to private investors who reap tax benefits from cost recovery of these assets. Should the public care whether these assets or public or private? Are the purchased assets primarily tangible and intangible?
- **Comprehensive problems.** Have students work in groups (three to five students) to complete Comprehensive Problem 75. Make yourself available to students to answer questions but try to get them to work together to answer resolve their questions. If time is short, skip part C.

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Chapter 2

Property Acquisition and Cost Recovery

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Learning Objectives

1. Explain the concept of basis and adjusted basis and describe the cost recovery methods used under the tax law to recover the cost of personal property, real property, intangible assets, and natural resources.
2. Determine the applicable cost recovery (depreciation) life, method, and convention for tangible personal and real property and calculate the deduction allowable under basic MACRS.
3. Explain the additional special cost recovery rules (§179, bonus, listed property) and calculate the deduction allowable under these rules.
4. Explain the rationale behind amortization, describe the four categories of amortizable intangible assets, and calculate amortization expense.
5. Explain cost recovery of natural resources and the allowable depletion methods.

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Cost Recovery

- Businesses must capitalize the cost of assets with a useful life of more than one year on the balance sheet rather than expense the cost immediately
- Also known as depreciation, amortization, or depletion – depending upon the underlying nature of asset
- Business use these methods to recover cost of assets due to wear, tear and obsolescence of assets

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Cost Recovery

- Different methods to recover the costs of assets
  - Depreciation – Deducting the cost of tangible personal and real property (other than land) over a specific period of time
  - Amortization – Deducting the cost of intangible property over a specific period of time
  - Depletion – Deducting the cost of natural resources over time

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Cost Recovery

- Basis for Cost Recovery –
  - Once the use of purchased assets is started, recouping the cost of assets also starts
  - Cost basis reduces when cost is recovered through Cost Recovery Deductions which is called Assets Adjusted Basis or Tax Basis
  - Assets Adjusted Basis = Assets Initial Cost or Historical basis minus Accumulated Depreciation (Amortization or Depletion)

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Basis Example

- Scrap-Happy Inc., a scrapbooking retail chain, purchased an old office building for $175,000 for use in expanding its current operations. An additional $15,000 was spent painting and remodeling the building in preparation for its opening.
- Two years later, a Scrap-Happy employee discovered that several leaks in the roof were causing serious water damage to the store's inventory; the company spent $50,000 to re-roof the building.
- Every six months, Scrap-Happy pays $500 to have the carpet professionally cleaned.

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Basis Example (cont.)

- What is the original basis of the building?
  - $175,000 initial cost

  + $15,000 painting and remodeling

  $190,000 Original Basis
- What effects do the other two transactions have on the original basis?
  - $50,000 re-roofing expense: **Added to basis** (results in a restoration of a major component of the building)
  - $500 biannual carpet cleaning: **No effect on basis** (Expensed immediately → routine maintenance)

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Cost Recovery

EXHIBIT 2-1 **Assets and Cost Recovery**

Asset Type	Cost Recovery Method
Personal property is comprised of tangible assets such as automobiles, equipment, and machinery.	Depreciation
Real property is comprised of buildings and land (although land is nondepreciable).	Depreciation
Intangible assets are nonphysical assets such as goodwill and patents.	Amortization
Natural resources are commodities that are considered valuable in their natural form such as oil, coal, timber, and gold.	Depletion

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Depreciation

- Before 1981, tax depreciation methods closely resembled financial accounting methods which required businesses to determine “Salvage Values” and “Useful Lives”
- In 1981, ACRS – Accelerated Cost Recovery System was introduced to depreciate assets over predetermined, fixed recovery periods
- Today, businesses calculate their tax depreciation using the MACRS – Modified Accelerated Cost Recovery System – which is pronounced “makers” by tax accountants

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Depreciation

- To compute MACRS depreciation for an asset, following are to be known
  - asset's original cost,
  - applicable depreciation method,
  - asset's recovery period (or depreciable "life"),
  - applicable depreciation convention (depreciation deductible in the year of acquisition and the year of disposition)

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Depreciation

- Personal Property Depreciation
  - Includes all tangible property such as computers, automobiles, furniture, machinery and equipment, other than real property
  - Personal property (not real property) and personal use property (used for personal purposes) not the same

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Depreciation

- Depreciation Method
  - Three acceptable methods for depreciating personal property
    - 200 percent (double) declining balance
    - 150 percent declining balance
    - straight-line

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Depreciation

- Depreciation Recovery Period
  - For financial accounting purposes an assets recovery period (depreciable life) is based on its taxpayer-determined estimated useful life
  - For tax purposes, an assets recovery period is predetermined by IRS in the Rev. Proc. 87-56 which helps payers to categorize each of their assets based upon the property's description

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Depreciation

- Once the business has determined the appropriate categories for its assets, it can use the Revenue Procedure to identify the recovery period for all assets in a particular category

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Depreciation

EXHIBIT 2-3 **Excerpt from Revenue Procedure 87-56**

Description of Assets Included	Years		
Specific depreciable assets used in all business activities, except as noted:	Class Life	General Recovery Period	Alternative Recovery Period
00.11 Office Furniture, Fixtures, and Equipment: Includes furniture and fixtures that are not a structural component of a building. Includes such assets as desks, files, safes, and communications equipment. Does not include communications equipment that is included in other classes.	10	7	10
00.241 Light General Purpose Trucks: Includes trucks for use over the road (actual unloaded weight less than 13,000 pounds) . . .	4	5	5
34.0 Manufacture of Fabricated Metal Products Special Tools: Includes assets used in the production of metal cans, tinware . . .	12	7	12

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Depreciation

EXHIBIT 2-4 Recovery Period for Most Common Business Assets

Asset Description (summary of Rev. Proc. 87-56)	Recovery Period
Cars, light general-purpose trucks, and computers and peripheral equipment.	5-year
Office furniture, fixtures, and equipment.	7-year

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Depreciation

- Depreciation Conventions
  - Half-year Convention
    - One-half year's depreciation is allowed in first and last year of an asset's life
    - An IRS depreciation tables automatically account for the half-year convention in year of purchase and disposition
    - If an asset is disposed of before it is fully depreciated, only one-half of the table's applicable depreciation percentage is allowed in the year of disposition

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Depreciation

- Mid–Quarter Convention
  - Steps to determine whether the mid-quarter convention applies
    1) Sum of the total basis of tangible personal property that was placed in service during the year
    2) Sum of the total basis of tangible personal property that was placed in service during the fourth quarter
    3) Divide step (2) by step (1), if the quotient is more than 40%, then the business must use this method or else half–year convention is used

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Depreciation

- Calculating depreciation for personal property
  - Locate the applicable table provided in Rev. Proc. 87-57
  - Select the column that corresponds with the assets recovery period
  - Find the row identifying the year of the assets recovery period
- Applying the half-year and mid–quarter convention
- Half-year convention for year of disposition
- Mid-quarter convention for year of disposition

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Depreciation

TABLE 1 MACRS Half-Year Convention

Depreciation Rate for Recovery Period						
Year	3-Year	5-Year	7-Year	10-Year	15-Year	20-Year
1	33.33%	20.00%	14.29%	10.00%	5.00%	3.750%
2	44.45	32.00	24.49	18.00	9.50	7.219
3	14.81	19.20	17.49	14.40	8.55	6.677
4	7.41	11.52	12.49	11.52	7.70	6.177
5		11.52	8.93	9.22	6.93	5.713
6		5.76	8.92	7.37	6.23	5.285
7			8.93	6.55	5.90	4.888
8			4.46	6.55	5.90	4.522
9				6.56	5.91	4.462
10				6.55	5.90	4.461
11				3.28	5.91	4.462
12					5.90	4.461
13					5.91	4.462
14					5.90	4.461
15					5.91	4.462
16					2.95	4.461
17						4.462
18						4.461
19						4.462
20						4.461
21						2.231

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Depreciation

Mid-Quarter Depreciation Table for Personal Property by Quarter Placed in Service and Recovery Period (Excerpts from Rev. Proc. 87-57)

	First Quarter		Second Quarter		Third Quarter		Fourth Quarter	
Year	5-year	7-year	5-year	7-year	5-year	7-year	5-year	7-year
1	35.00%	25.00%	25.00%	17.85%	15.00%	10.71%	5.00%	3.57%
2	26.00	21.43	30.00	23.47	34.00	25.51	38.00	27.55
3	15.60	15.31	18.00	16.76	20.40	18.22	22.80	19.68
4	11.01	10.93	11.37	11.97	12.24	13.02	13.68	14.06
5	11.01	8.75	11.37	8.87	11.30	9.30	10.94	10.04
6	1.38	8.74	4.26	8.87	7.06	8.85	9.58	8.73
7		8.75		8.87		8.86		8.73
8		1.09		3.33		5.53		7.64

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Depreciation

EXHIBIT 2-6 **Mid-Quarter Convention Percentage of Full Year's Depreciation in Year of Disposition**

Quarter of Disposition	Percentage	Calculation*
First	12.5%	1.5/12
Second	37.5	4.5/12
Third	62.5	7.5/12
Fourth	87.5	10.5/12

*The calculation is the number of months the taxpayer held or is deemed to have held the asset in the year of disposition divided by 12 months in the year.

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Depreciation Example

- In 2016, Scrap-Happy purchased and placed in service the following assets:

Asset	Cost	Date placed in service
Di-Cut Machine	$3,500	February 2 (1st Qtr.)
Computer	$1,200	October 25 (4th Qtr.)

- What is the recovery period for each of the assets?
  - Computer = 5 years
  - Di-Cut Machine = 7 years
- Which convention should Scrap-Happy use to determine depreciation for 2016?
  - Answer: Half-year
    - → $1,200 4th qtr. assets/$4,700 total assets = 25.53% < 40%

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Depreciation Example

- Now assume all the same facts, except that the computer was purchased in February and the machine in October, as shown:

Asset	Cost	Date placed in service	Recovery Period
Computer	$1,200	February 2 (1st Qtr.)	5 Years
Di-Cut Machine	$3,500	October 25 (4th Qtr.)	7 Years

- What convention should be used in computing depreciation for the year?
  - Answer: Mid-quarter
    - → $3,500 4th qtr. assets/$4,700 total assets = 74.46% > 40%
- How much depreciation can they take for each of the assets in 2016?
  - Computer: $1,200 × 35%* = $420
  - Di-Cut Machine: 3,500 × 3.57%* = $125

*See respective mid-quarter MACRS tables for rates

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Depreciation

- Real Property
  - It uses mid–month convention and depreciated using straight line method

EXHIBIT 2-7 **Recovery Period for Real Property**

Asset Description (summary from Rev. Proc. 87-57)	Recovery Period
Residential	27.5 years
Nonresidential property placed in service on or after May 13, 1993	39 years
Nonresidential property placed in service before May 13, 1993	31.5 years

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REAL PROPERTY:

Depreciation Example

- On July 12, Scrap-Happy purchases and places in service a warehouse and the land it resides on for $170,000 ($120,000 is allocated to the building and $50,000 to the land).
- What is the amount of depreciation on the property for the first year?
  - Answer: $120,000 × 1.177% = **$1,412**
    - 1.177% is the rate given in the nonresidential real property MACRS table under the column for the 7th month*
  - Land is not included in the calculation because it is not depreciable

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Depreciation

- Immediate Expensing
  - This incentive is commonly referred as §179 expense or immediate expensing election
  - Limits on immediate expensing
  - Choosing the assets to immediately expense
- Bonus Depreciation
  - To stimulate the economy, policy makers occasionally implement bonus depreciation

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Depreciation

- Listed Property
  - Business can use the following steps to determine its current depreciation expense for the asset
    1) Compute depreciation for the year if it drops to 50% or below using the straight-line method
    2) Compute amount to be deducted if straight line method is used over ADS recovery period for all prior years (limited to business – use percentage)
    3) Compute the amount of depreciation, taxpayer actually deducted on the assets for all prior years
    4) Subtract amount of step 2 from step 3, which is prior year accelerated depreciation in excess of straight line depreciation
    5) Subtract amount of step 4 from step 1 which is business's allowable depreciation expense on the asset for that year

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Depreciation

- Luxury Automobiles

EXHIBIT 2-8 **Automobile Depreciation Limits**

Recovery Year	Year Placed in Service			
	2016	2015	2014	2013
1	3,160*	3,160*	3,160*	3,160*
2	5,100	5,100	5,100	5,100
3	3,050	3,050	3,050	3,050
4 and after	1,875	1,875	1,875	1,875

*$8,000 additional depreciation is allowed when bonus depreciation is elected.

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Amortization

- For intangible assets businesses recover cost of the asset through amortization
- Intangible assets in the form of capitalized expenditures, such as capitalized research and experimentation (R&E) costs or covenants do not have physical characteristics
- Intangible assets has one of the following characteristics
  - Section 197 Intangibles
  - Start-up expenditures and organizational costs
  - Research and experimentation costs
  - Patents and Copyrights

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Amortization

- Section 197 intangibles
  - According to §197, these assets have a recovery period of 180 months (15 years), regardless of their actual life
  - Uses full month convention allows taxpayers to deduct an entire month's worth of amortization for the month of purchase and all subsequent months in the year

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Amortization

- Organizational Expenditures and Start-up Costs
  - Organizational expenditures include expenditures to form and organize a business in the form of a corporation or a partnership and are incurred prior to the starting business
  - Start-up costs are costs businesses incur to, start up a business

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Amortization

- Research and Experimentation Expenditures
  - To stay competitive, businesses often invest in activities which will generate innovative products or significantly improve their current products or processes
  - Businesses may immediately expense these costs or they may elect to capitalize and amortize these costs using the straight-line method over a period of not less than 60 months, beginning in the month benefits are first derived from the research

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Amortization

- Patents and Copyrights
  - It depends on the way how business directly purchases the patent or copyright or whether itself creates the intangibles
  - Businesses directly purchasing patents or copyrights amortize the cost over the remaining life of the patents or copyrights
  - Businesses receiving “self-created” patents or copyrights amortize the cost or basis of the self-created intangible assets over the shorter of the legal life or remaining useful life

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Amortization

EXHIBIT 2-12 Summary of Amortizable Assets

Asset Description	Recovery Period (months)	Applicable Method	Applicable Convention	Financial Accounting Treatment
§197 purchased intangibles including goodwill, trademarks, patents, and covenants not to compete.[57]	180	Straight-line	Full-month beginning with month of purchase.	ASC 350 tests for annual impairment.
Organizational expenditures and start-up costs are required to be capitalized.	180	Straight-line	Full-month in month business begins.	AICPA SOP 98-5.
Research and experimentation costs that are capitalized.	Determinable useful life, or 60 (not less than); ceases when patent is issued.	Straight-line	Full-month in first month that benefits from research are obtained.	Expensed.
Self-created patents and copyrights.	Actual life.	Straight-line	Full-month in month intangible is obtained.	Expensed.
Purchased patents and copyrights.	Remaining life.	Straight-line	Full-month in month intangible is obtained.	Expensed.

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Depletion

- A method used to recover their capital investment in natural resources
- Businesses compute annual depletion expense under both the cost and percentage depletion methods and they deduct the larger of the two
- Taxpayers must estimate or determine the number of units or reserves that remain at the beginning of the year and allocate a pro rata share of that basis to each unit that is extracted during the year

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Cost Depletion Example

- Scrap-Happy purchases a tract of forest land which they plan to use to harvest trees for the production of scrapbook paper. It is estimated that the tract contains 30,000 board feet of timber. The original cost of the property is $75,000, of which $60,000 is allocated to the timber and $15,000 to the land.
- What is the cost depletion per board foot?
  - Answer: $60,000 basis/30,000 ft = $2/ft
- If the company uses 10,000 board feet during the first year, how much will they expense under the cost depletion method?
  - Answer: 10,000 ft × $2/ft = $20,000

  OR $60,000 basis × 33.33% resource used = $20,000

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Depletion

- Once entire cost is recovered, businesses are not allowed to use cost depletion to determine depletion expense
- The amount of percentage depletion for a natural resource business activity is determined by multiplying the gross income from the resource extraction activity by a fixed percentage based on the type of natural resource as indicated in Exhibit 10-14

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Depletion

EXHIBIT 2-14 **Applicable Percentage Depletion Rates**

Statutory Percentage	Natural Resources (Partial list)
5 percent [§613(b)(6)]	Gravel, pumice, and stone.
14 percent [§613(b)(3)]	Asphalt rock, clay, and other metals.
15 percent [§613(b)(2)]	Gold, copper, oil shale, and silver.
15 percent [§613A(c)(1)]	Domestic oil and gas
22 percent [§613(b)(1)]	Platinum, sulfur, uranium, and titanium.

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