Basic Appraisal Principles

Solutions Booklet

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I. What is an Appraiser?

Later in the course, we'll formally define the term *appraiser,* but we want your thoughts for now. Use the space below to write down some of your ideas.

There is no preset answer to this question. Address the important concept

that appraisers provide independent, impartial, and objective value opinions.

An appraiser's opinion can involve all types of real property and can also

include personal property and intangible business assets.

II. Appraisal Practice

A. Appraisal practice is a valuation service performed by an individual acting as an appraiser.

B. Professional services that come under appraisal practice include

1. *Appraisal*

2. *Appraisal review*

3. *Other services while acting as an appraiser*

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IV. Career Perspective

If you were to picture your career as a high-rise building with each floor representing one year of experience, what kind of foundation would you need to support 30 stories?
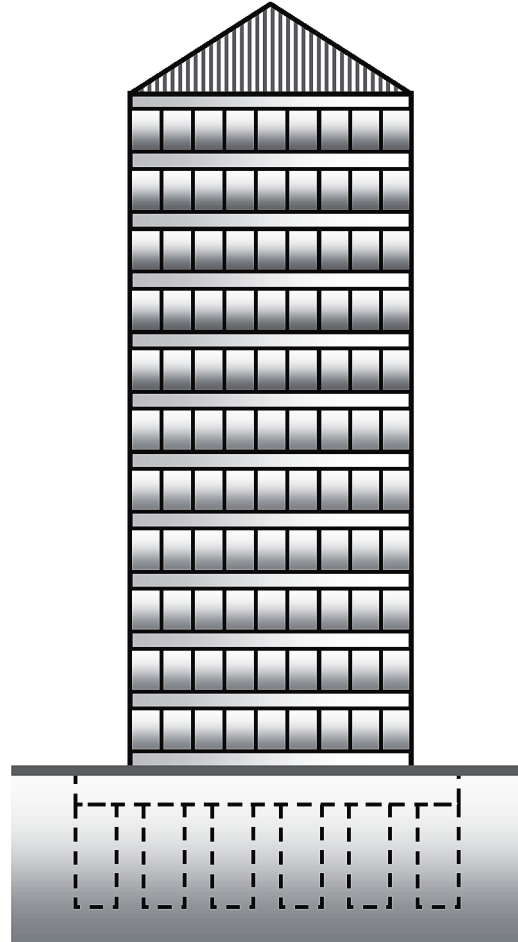
Career pinnacle

Enhanced skill sets

Experience

Knowledge

Education

Competent practice

Ethical principles

1.1 Dilemma

Two parties involved in a real property valuation dispute are seeking to hire one appraiser to help resolve the matter.

Is it ethical for an appraiser to perform this type of assignment when the parties have conflicting interests?

An appraiser does not "represent" or advocate a client's position.

Since an appraiser is impartial and independent, it is ethical to

perform a valuation service for both parties in this dispute assuming

they agree to abide by the results.

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1.2 Dilemma

I completed an appraisal assignment for a bank last week with a $250,000 value conclusion. The bank called today and said they need another $5,000 to put the deal together; otherwise, they won't pay me. That's a 2% difference, and I guess it's not worth arguing about. This is my sole client, and I can't afford to lose the business. What should I do?

What advice do you have for this appraiser?

Changing the appraisal would favor the cause of the client and alter the impartial and objective nature of the appraiser-client relationship.

1.3 Discussion Question. **In the Real World**

An appraiser discovers during the course of the assignment that he lacks the required knowledge and experience to complete the assignment competently.

What should the appraiser do?

Instructions: Before attempting to answer this question, read the content on the next page of the handbook and then discuss the issues with those seated at your table area.

Inform the client and satisfy the competency issue or withdraw from the assignment. The appraiser's obligation to address competency applies even if the issue is discovered during the course of the assignment due to previously unknown facts or conditions.

Review Quiz

Fill in the missing content for the following questions.

1. Appraisers must develop and communicate their work in a manner that is meaningful and _that does not misrepresent_ their services to intended users.

2. An appraiser must not advocate the cause or interest of any _party or issue_.

3. At what point must an appraiser be competent regarding an appraisal assignment? _At completion of the assignment_.

4. The appraiser must be prepared to demonstrate that the type and extent of research and analyses performed in the appraisal is sufficient to produce _credible_ assignment results.

5. An appraiser performing an assignment in an unfamiliar geographic location must spend sufficient time to understand the _nuances_ of the local market.

Check the appropriate box for each question.

	TRUE	FALSE
6. A series of errors in an appraisal is acceptable as long as it does not significantly affect the value conclusion.	☐	☒
7. An appraiser must inform a client prior to accepting the assignment if he or she lacks the requisite training, information, and/or work experience to complete the assignment competently.	☒	☐
8. A fee arrangement contingent on an appraiser's value conclusion will help the appraiser to maintain impartiality and independence.	☐	☒
9. In an assignment that involves a dispute between two parties, it is the appraiser's duty to represent his client's position.	☐	☒
10. The unethical practices of a few can sometimes damage public trust for an entire profession.	☒	☐

II. Fundamental Land Rights

Certain rights accompany land such as air rights, water rights, mineral rights, and oil and gas rights. These land rights together with all the other rights in real property (comprehensively known as the bundle of rights) are the interests that appraisers analyze and evaluate. For now, we'll focus on fundamental land rights.
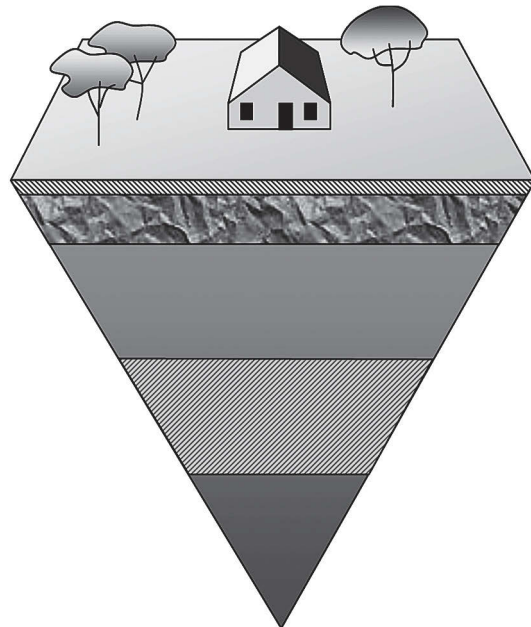
A. The inverted pyramid

Land theory suggests that ownership in land includes complete possession from the center of the earth to the ends of the universe. Of course, in real practice, land ownership has limitations due to governmental controls.

1. *Suprasurface rights*

2. *Surface rights*

3. *Subsurface rights*

C. Surface rights

1. Rights include land, water, and anything attached to the land—either naturally or placed by human hands.

2. Water rights

   a. _____*Riparian rights*_____ These are rights pertaining to properties touching a body of water or a waterway such as a river or stream (generally interpreted as flowing waters) with an emphasis on the benefit and useful purpose to which the flowing water may be applied.

   b. _____*Littoral rights*_____ These are rights pertaining to properties abutting an ocean, lake or pond (generally interpreted as non-flowing waters) with an emphasis on the use and enjoyment of the shore (the area between high and low water levels).

   c. Landowners with water rights generally have an unrestricted right to use the water that adjoins their property. However, they cannot interrupt or divert the flow of water (or contaminate it). Riparian and littoral owners cannot impair the rights of other riparian or littoral landowners. This often involves agricultural issues of farming and irrigation.

   d. Riparian and littoral rights are **appurtenant** (that is, attached) to the land and cannot be retained by the seller after the property is sold.

   e. **Prior appropriation water rights.** This system of allocating water rights is different from riparian and littoral rights. Water law in the western United States generally follows the appropriation doctrine (sometimes referred to as the *Colorado Doctrine*) which came about due to the scarcity of water in that area of the country. This water right can be summed up as "first in time is first in line," and the rights are unconnected to land ownership.

III. Real Estate, Personal Property, and Real Property

Knowledge Preview. Choose *real estate*, *personal property* or *real property* for 1–6.

1. Schaefer owns land with a grove of trees that are prized for their wood. The trees would be classified as

   Real estate

2. Schaefer cuts down several of the trees and stacks the wood on his land.

   Personal property

3. Schaefer sends the wood to a woodworker to be made into cabinets. The finished cabinets are delivered and placed in Schaefer's house.

   Personal property

4. Schaefer secures the cabinets to a wall in the family room of the house.

   Real estate

5. Years later Schaefer remodels the home and removes the cabinets and places them in the attached garage.

   Personal property

6. Schaefer's marriage falls apart, and a judge orders that Schaefer's spouse receive one-half the wholesale timber value of the tree grove. The interest in the tree grove represents

   Real property

C. Fixtures

  2. Tests of fixtures

Attachment (or annexation)

The manner (permanence) in which the item is affixed

Adaptation

Character of the item (for example, custom-made) and

its adjustment (or modification) to the real estate

Agreement

The intention of the party who attached the item

D. Real property

Rights in Real Property

Transfer

Possession

Lease

Mortgage

Improve

Review Quiz

Write a number on the line opposite each item below to indicate whether the item is best described as
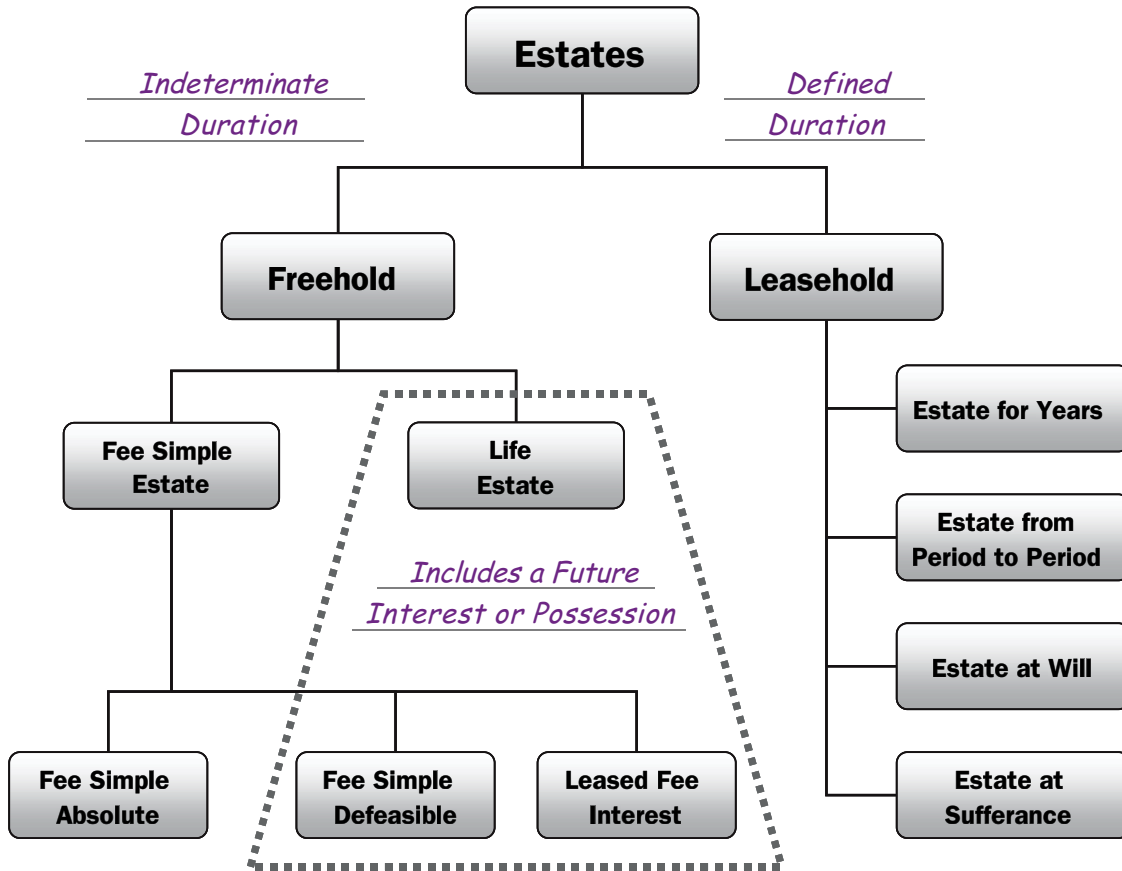
1. Real estate

2. Real property

3. Personal property

4. Fixture

5. Trade fixture

Note. *Permanently attached fixtures are also real estate. Choose "fixture" rather than "real estate" if the test of fixtures applies to the personal property item. Trade fixtures are also personal property, but* **choose the best answer** *that fits the description.*

5   Photographic printing equipment owned and used by a one-hour photo business that rents space in a mall

1   Chain link fence

2   An estate

3   Portable dishwasher

2   Condominium

1   Swimming pool in the ground

3   Swimming pool above the ground

5   Air-handling systems and filters owned and installed by a tenant in leased space of an industrial park

4   Room air conditioner permanently mounted in a wall opening

2   Right to occupy

4   Portable hot tub permanently enclosed in a deck with underground plumbing

1   Shrubbery

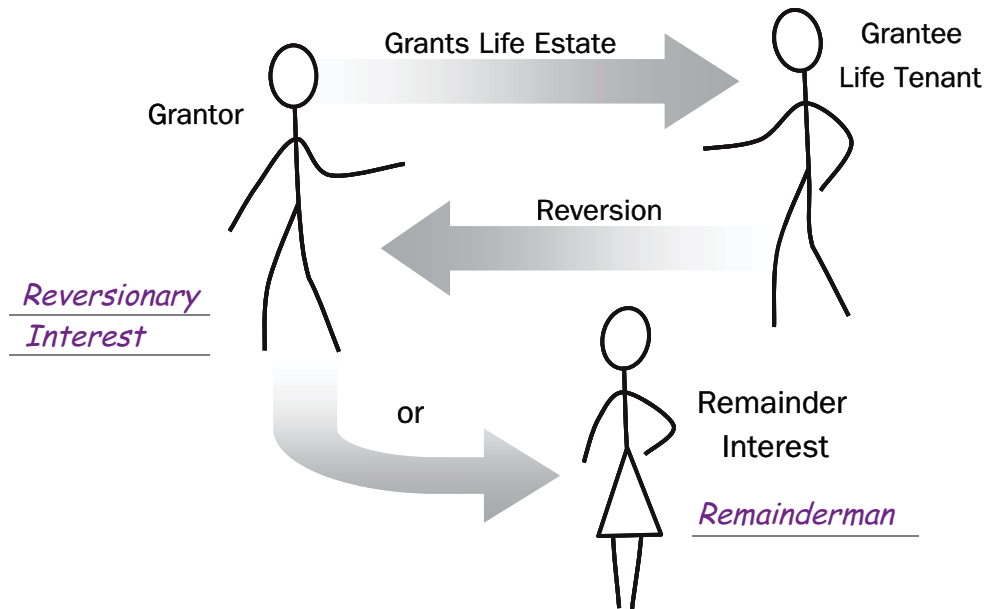*3*   Emails

I.   Estates in Land

There are many types of estates, but not all interests in real estate are defined as estates in land. To be an estate in land, the legal right(s) or interest(s) must allow possession—now or in the future—and specify duration. Estates are distinguished by their duration and fall into two legal categories—**freehold and leasehold estates**.
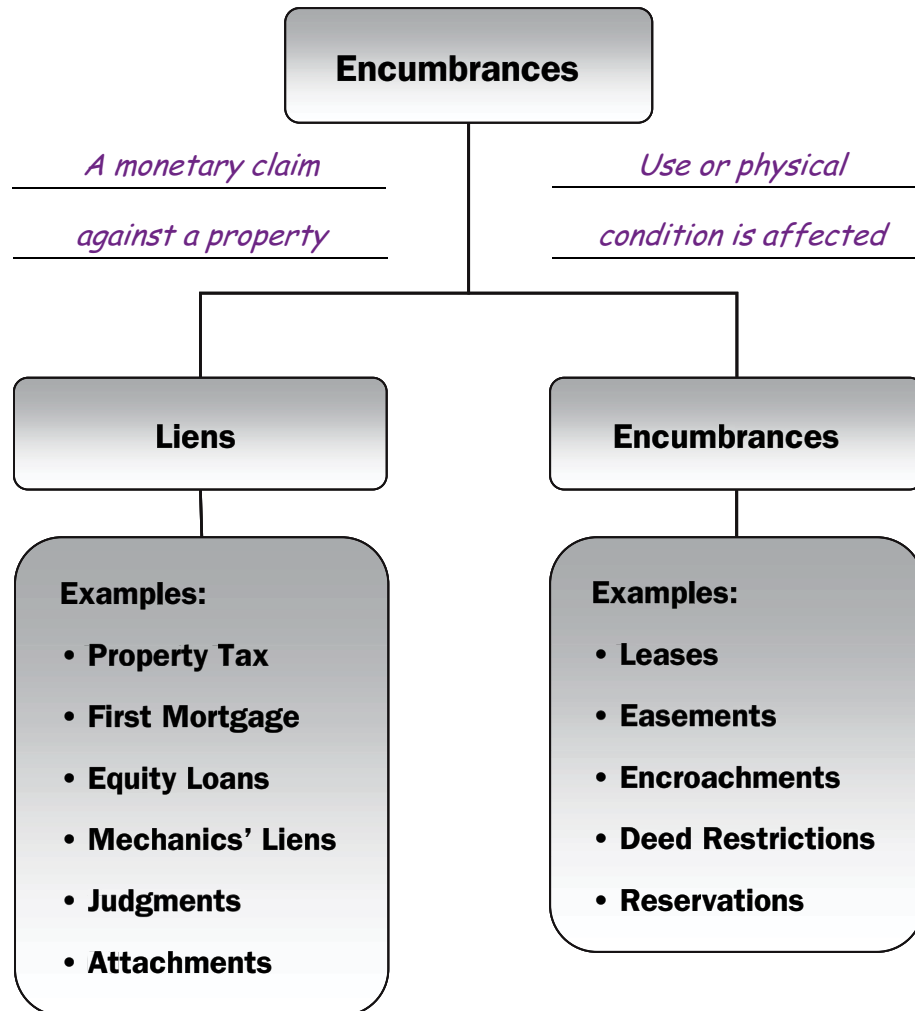
```
                              ┌──────────┐
                              │ Estates  │
                              └──────────┘
        Indeterminate              │              Defined
         Duration                  │              Duration
                         ┌─────────┴─────────┐
                    ┌─────────┐          ┌──────────┐
                    │ Freehold│          │ Leasehold│
                    └─────────┘          └──────────┘

    ┌──────────┐      ┌──────────┐              ┌──────────────┐
    │Fee Simple│      │  Life    │              │Estate for Years│
    │  Estate  │      │  Estate  │              └──────────────┘
    └──────────┘      └──────────┘
                                                ┌──────────────┐
                  Includes a Future             │ Estate from  │
                Interest or Possession          │Period to Period│
                                                └──────────────┘
  ┌──────────┐  ┌──────────┐  ┌──────────┐
  │Fee Simple│  │Fee Simple│  │Leased Fee│      ┌──────────────┐
  │ Absolute │  │Defeasible│  │ Interest │      │ Estate at Will│
  └──────────┘  └──────────┘  └──────────┘      └──────────────┘

                                                ┌──────────────┐
                                                │  Estate at   │
                                                │  Sufferance  │
                                                └──────────────┘
```

B. Types of freehold estates

   2. Life estate

Example of an Ordinary Life Estate

Grants Life Estate

Grantor

Grantee
Life Tenant

Reversion

Reversionary Interest

or

Remainder Interest

Remainderman

II. Encumbrances

```
                        ┌─────────────────────────┐
                        │      Encumbrances        │
                        └─────────────────────────┘
                                   │
        A monetary claim           │           Use or physical
                                   │
       against a property          │          condition is affected
                   ┌───────────────┴───────────────┐
         ┌──────────────────┐            ┌──────────────────┐
         │      Liens       │            │   Encumbrances   │
         └──────────────────┘            └──────────────────┘
                  │                                │
   ┌──────────────────────┐          ┌──────────────────────┐
   │  Examples:           │          │  Examples:           │
   │                      │          │                      │
   │  • Property Tax      │          │  • Leases            │
   │                      │          │                      │
   │  • First Mortgage    │          │  • Easements         │
   │                      │          │                      │
   │  • Equity Loans      │          │  • Encroachments     │
   │                      │          │                      │
   │  • Mechanics' Liens  │          │  • Deed Restrictions │
   │                      │          │                      │
   │  • Judgments         │          │  • Reservations      │
   │                      │          │                      │
   │  • Attachments       │          │                      │
   └──────────────────────┘          └──────────────────────┘
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All liens are encumbrances; not all encumbrances are liens.

Encumbrances

Our focus will be on encumbrances that are not liens. In Part 6 we'll come back to this topic again and look at lien encumbrances. Leases are encumbrances, but we want to treat them separately, and we will examine leases in Part 7.

A. Easements

1. *Easement appurtenant* *An easement that is attached to, benefits, and passes with the transfer of the dominant estate; runs with the land for the benefit of the dominant estate and continues to burden the servient estate.*
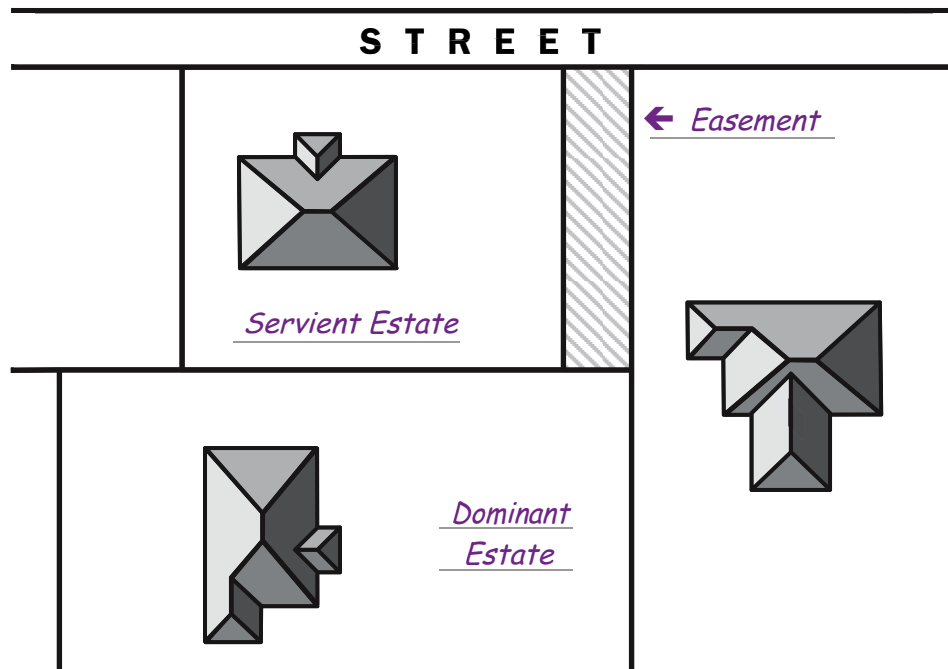
2. *Easement in gross* *An easement that benefits a legal person or entity (individual, corporation, partnership, LLC, government entity, etc.) and not a particular tract of land; an easement having a servient estate but no dominant estate.*

Basic Appraisal Principles

Appurtenant Easements

From the definition

Some things to know

1. The dominant estate is the "owner" of the easement

2. The dominant estate is the land parcel to which the easement is attached

3. It is <u>not</u> attached to the servient estate, but instead burdens the servient estate

Easements in Gross

From the definition

Some things to know

1. There is no dominant estate

2. The "owner" of an easement in gross is a person or entity – often a public body or governmental agency

3. It is <u>not</u> attached to any land, but burdens the parcels subject to the easement in gross
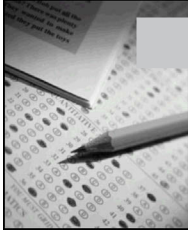
This multiple-choice test is for your benefit and provides a review of everything covered in Section 1. This is a "closed book" test. Choose the *most* correct answer.

1. Which of the following items are considered to be personal property?

    A. a tree orchard

    B. built-in cabinetry

  * C. furniture

    D. interior light fixtures

2. Mayes owns a property but has leased it to Jacobs. Which term describes Jacobs' right in the property?

    A. fee simple interest

    B. leased fee interest

  * C. leasehold interest

    D. lessor interest

3. *Real estate* is best described as

    A. everything resting on the surface of the land.

    B. fixtures and building improvements.

  * C. land and everything permanently attached to the land.

    D. the complete bundle of rights attached to land.

4. Mineral rights are an example of

    A. air rights.

    B. riparian rights.

  * C. subsurface rights.

    D. suprasurface rights.

5.	An appraiser's familiarity with a specific type of property applies to what concept?

*	A.	competency

	B.	impartiality

	C.	intended use

	D.	sufficient diligence

6.	Sanchez is appraising a property for a client with the intended use of filing a tax appeal. In this type of assignment, Sanchez should

	A.	find out what value the client's lawyer recommends.

*	B.	not advocate the cause or interest of any party or issue.

	C.	represent the client's cause in the appeal.

	D.	try to keep the value as low as possible.

7.	Before an appraiser begins an assignment, the problem to be solved must be identified. What is the next step the appraiser must take to ensure credible assignment results?

	A.	a preliminary opinion for the client

	B.	a pro forma for the assignment

	C.	a project timeline

*	D.	determination of the scope of work

8.	Chattel and personalty are terms used to describe

	A.	emblements.

	B.	fixtures.

*	C.	personal property.

	D.	real property.

9.	Hooper gave permission to a nearby business neighbor to place a sign on his corner property to advertise the neighbor's liquidation sale. What has Hooper given his neighbor?

*	A.	a license

	B.	a partial interest in his property

	C.	a personal easement in gross

	D.	an estate

10. What is a tenancy (that is, estate) in which a lessee remains in possession of the property without the lessor's consent?

*   A.   tenancy at sufferance

     B.   tenancy at will

     C.   tenancy for years

     D.   tenancy from period to period

II. Rectangular (Government) Survey System

B. Rectangular survey basics
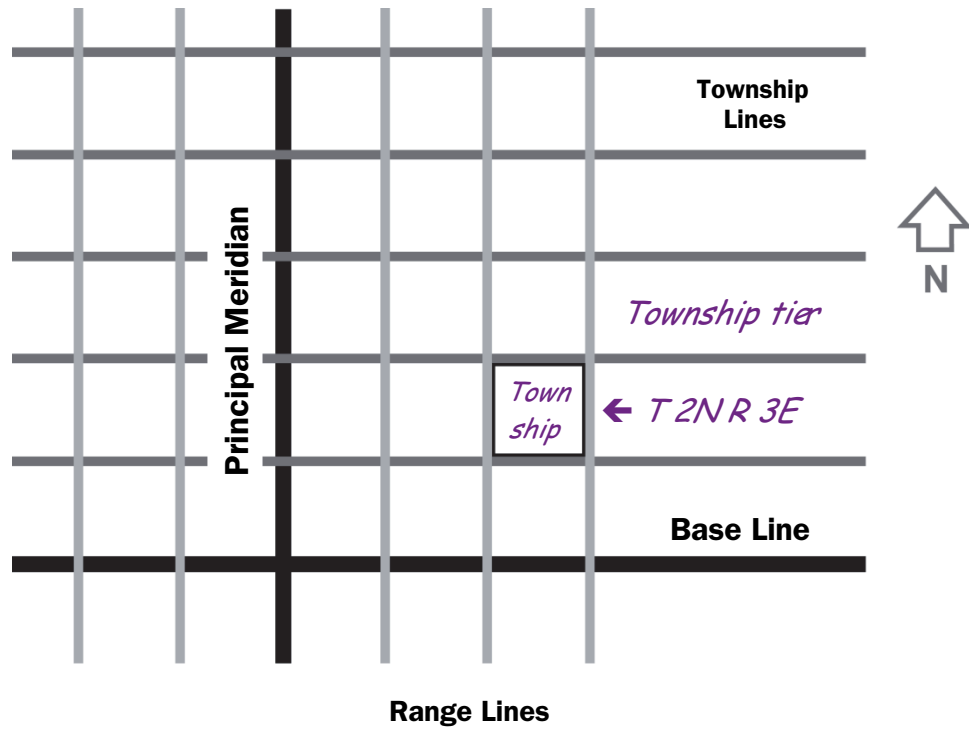
Township Section by the Numbers

Section Description	Size
1 Section	640 Acres
½ Section	320 Acres
¼ Section	160 Acres
¼ of ¼ Section	40 Acres
¼ of ¼ of ¼ Section	10 Acres
¼ of ¼ of ¼ of ¼ Section	2.5 Acres

1 Acre = 43,560 Square Feet

Example. Looking at Section 22 below, write a description for the parcel identified by the shaded area.

E ½ of NW ¼ of SE ¼ of NE ¼ of Section 22, T 2N, R 3E

SECTION 22, TOWNSHIP 2N, RANGE 3E
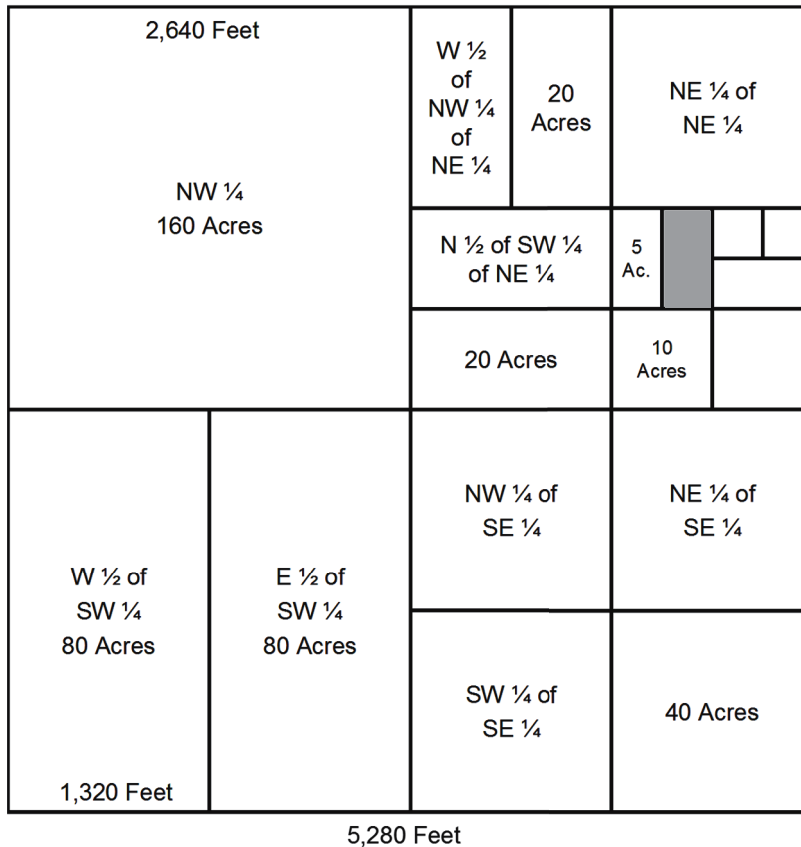
Review Quiz

Fill in the missing data to the following questions:

1. The method of legal description most frequently used west of the Mississippi River is _____*rectangular survey*_____ .

2. Which section is directly north of Section 23? _____*Section 14*_____

3. The SE ¼ of Section 10 contains how many acres? _____*160 acres*_____

4. A land parcel measuring 660 feet by 330 feet contains how many acres? *5 acres*

5. Malloy sold a land tract for $2,500 per acre described as S ½ of the NE ¼. What was the total price of the land? _____*$200,000*_____ (*80 acres × $2,500*)

Use Township Section 12 illustrated below to answer questions 6 through 9.
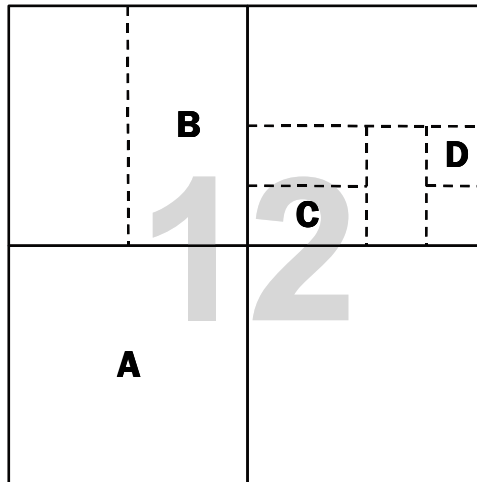
6. Peterson purchased tracts A and B. How many acres did he buy? _____*240 acres*_____

7. What are the dimensions of land tract "C"? _____*1,320 ft. × 660 ft.*_____

8. Provide the legal description of tract "C". _____*S ½ of SW ¼ of NE ¼ of Section 12*_____

9. What is the square foot size of land parcel "D"? _____*435,600 square feet*_____
   10 acres × 43,560 sq. ft.

IV. Trusts

A. Understanding the basics of a trust

How a Basic Trust Works

Trustor

Conveys Title

Trustee

Fiduciary

Kelly

Kelly's
Lawyer

Beneficiary

Kelly's
Grandchildren

Held in
Trust for:
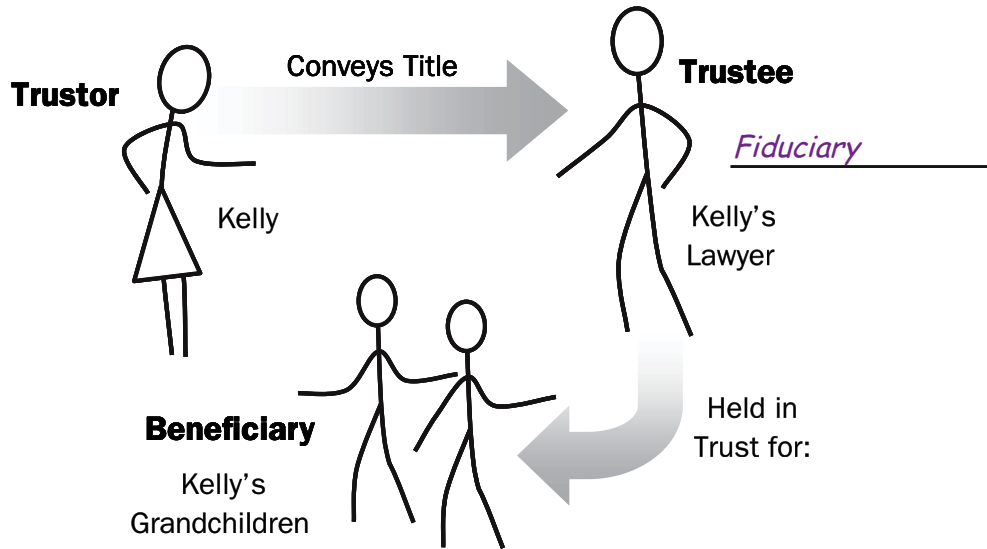
V. Condominiums, Cooperatives, and Timeshares

These forms of ownership function most commonly within residential property types.

A. Condominium ownership

1. How condominiums function

   a. Owner holds a fee simple title to an individual condo unit.

      - Each condominium unit has its own legal description. In states that levy property taxes, each condominium unit receives its own tax statement.

      - An individual unit can be owned in a number of ownership forms such as tenancy in common or joint tenancy as permitted by state laws.

   b. Condominium owners also hold an undivided interest in the remaining condominium real estate known as **common elements**.

      - Common elements *outside* the building can include

        Land, community buildings, swimming pools, tennis courts,

        boat slip for waterfront properties, and parking spaces.

      - Common elements *inside* the building can include

        Lobby, hallways, elevators, underground garage, exercise

        room, balconies, laundry, and storage areas.

Review Quiz

Fill in the missing data to the following questions.

1. Ownership held by an individual or single entity is called _ownership in severalty_.

2. The party that *gives* a mortgage is called _the mortgagor_.

3. Williams owns property with Campbell by tenancy in common. When Williams dies, her interest in the property will go to _her heirs or according to her will_.

4. In a basic trust, the fiduciary is known as the _trustee_.

5. Elevators, tennis courts, and hallways in a condominium are _common elements_.

6. Purchasing a cooperative unit means you are buying _shares of stock_.

7. An ownership interest in real estate that allows the use of the property facilities for a specified period of time is called _timeshare ownership_.

8. Joint tenancy has a right of survivorship feature shared with what other form of ownership? _tenancy by the entirety_

9. Concurrent ownership is also known as _co-ownership_.

10. Trusts that allow 100 or more investors to pool their resources into large real estate investments are called _REITs_.

6.1 Dilemma

A large national company wanted to build its corporate campus in a location accessible to public transportation and other favorable amenities. One municipality eager to have the new campus located in its city offered a large tract of land it considered blighted. The city then set out to purchase the properties in the blighted area and condemn the remaining parcels held by owners unwilling to sell.

Can the city take the properties for this purpose?

The answer can depend on a number of factors. The issue of condemning private property for use by another private party is a hotly debated topic as a result of the 2005 Supreme Court ruling (Kelo v. New London). Unless the courts find the taking arbitrary and capricious, the city has the right to condemn. In either case, appraisers are retained to address valuation issues.

I. Four Government Controls on Ownership

C. Police power

3. Zoning

e. Zoning terminology

- ___*Buffer strip*___ *Open spaces, landscaped areas, fences, walls, berms, or any combination thereof used to physically separate or screen one use or property from another so as to visually shield or block noise, lights, or other nuisances; often associated with a change of land use or density.*

- ___*Spot zoning*___ *An exception to the general zoning regulations; permits specific, usually small, parcels of land to be zoned for a use that is not permitted in the surrounding area.*

- ___*Zoning variance*___ *A legally authorized modification in the use of property at a particular location that does not conform to the regulated use set forth in the zoning ordinance for the surrounding area; not an exception or change in the legally applicable zoning.*

  This zoning concept is sometimes classified by states in different ways. Some states may call it a *use variance*, whereas others may use a term such as *development standard variance* because it deviates from the codified standard of the zoning ordinance (e.g., change in setback or a change in the number of parking spaces allowed for that particular use).

- ___*Legally nonconforming*___ *A use that was lawfully established and maintained, but no longer conforms to the use regulations of its current zoning; also known as* a grandfathered use.

II. Lien Encumbrances

Liens

A. **Liens** are financial encumbrances.

2. Liens fall into two general categories.

a. _General lien_ is a type that binds all the assets of the individual debtor (that is, the debtor's property) to the lien.

b. _Specific lien_ is a type that is levied against or attaches to a specified piece of property.
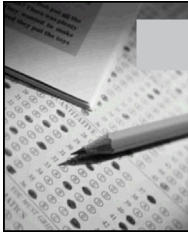
This multiple-choice test is for your benefit and provides a review of everything covered in Section 2. This is a "closed book" test. Choose the most *correct answer.*

1.   When a financial institution puts together a loan for a property owner, the lender is referred to as the

      A.   grantee.

*   B.   mortgagee.

      C.   mortgagor.

      D.   trustor.

2.   Which of the following limitations on ownership is not an exercise of government power?

*   A.   covenants

      B.   escheat

      C.   special assessment lien

      D.   zoning ordinance

3.   The Hawthorns bought a condominium unit in a resort area for $500,000. They use the condo for one month out of every year, and during the remaining months, they rent it out through an agreement with the property management. What type of ownership do the Hawthorns have?

*   A.   condominium

      B.   cooperative

      C.   leasehold

      D.   timeshare

4.   The form of legal description most often used west of the Mississippi River is

      A.   bearing and azimuth.

      B.   metes and bounds.

      C.   recorded plat.

*   D.   rectangular survey.

5.   A claim against real property to secure repayment of a debt is

      A.   a deed restriction.

*   B.   a lien.

      C.   an easement.

      D.   an encroachment.

6.   Sam Gates wants to buy a summer home with his sister Jean. Because they are both retired and have no heirs, they want to be sure that if one of them dies, the interest of the deceased will pass to the other sibling. Which form of ownership should they use to acquire title?

*   A.   joint tenancy

      B.   tenancy by the entirety

      C.   tenancy in common

      D.   tenancy in severalty

7.   When a corporation purchases real estate, it conducts this business as

      A.   a limited partnership.

      B.   a real estate investment trust.

      C.   a syndicate.

*   D.   if it were a single person.

8.   Rick and Alice set up a living trust for their children involving a rental property they own. In this type of agreement, the children are legally referred to as the

*   A.   beneficiaries.

      B.   fiduciaries.

      C.   trustees.

      D.   trustors.

9.   Common elements in condominium ownership include all of the following except the

    A.   elevator.

    B.   land.

*   C.   shareholder stock.

    D.   swimming pool.

10.   Justin owns a property with three other people. When Justin dies, his interest will be passed according to his will and be part of his estate. In this property, Justin is a

    A.   joint tenant.

    B.   tenant by the entirety.

*   C.   tenant in common.

    D.   tenant in severalty.

11.   McKibbin has been approved to have a possessory interest in a property and is given a proprietary lease. What kind of ownership does McKibbin have?

    A.   condominium ownership

*   B.   cooperative ownership

    C.   leasehold ownership

    D.   timeshare ownership

12.   A buyer purchased a quarter acre of land for $5.00 per square foot. What was the price of the parcel?

*   A. $54,450   *(43,560 sq. ft. / 4 = 10,890 × $5.00 = $54,450)*

    B. $108,900

    C. $125,000

    D. $217,800

13.   The process used by the government to acquire land for public benefit is known as

*   A.   condemnation.

    B.   eminent domain.

    C.   escheat.

    D.   foreclosure.

14. How many acres are contained in the tract described as beginning at the NE corner of the NW ¼, then south along the east line to the SE corner of said quarter section, then west 2,640 feet, more or less, to the SW corner of the said NW ¼, then in a straight line to the P.O.B.?

    A. 40 acres

  * B. 80 acres

    C. 120 acres

    D. 160 acres

Appraisal Institute / American Society of Farm Managers and Rural Appraisers / American Society of Appraisers
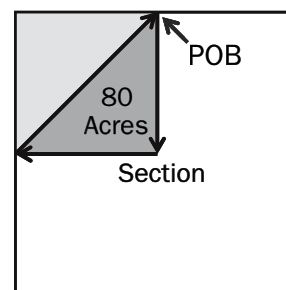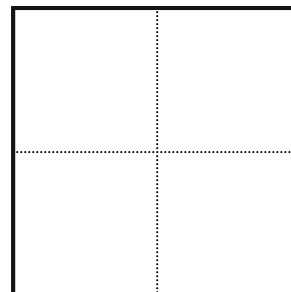
Appraisers view contracts, leases, and deeds as part of their research and analysis. The nature of the appraiser's work determines whether this task is carried out daily or on a less frequent basis. In any event, the appraiser should be familiar with the basics of all three.

I.   Contract Fundamentals

A. An **overview** of the basic elements of a contract

1. *Voluntary*

2. *An agreement or promise*

3. *Legally competent parties*

4. *Legal consideration*

5. *Legal act*

II. Types of Contracts

A. Real estate sale contract

2. The essentials of a sale contract that are of interest to appraisers.

a. *Sale price and terms*

- *Financing details and any seller concessions*

- *List of personal property included in the sale*

b. *Contract date and potential closing date*

c. *Legal description of the land*

d. *Identification of title and form of deed to be conveyed*

e. *Contingencies, if any*

f. *Seller's disclosure statement (listing known defects)*

g. *Signature of all parties to ensure a valid contract*

III. Leases

B. Lease bases

There are two bases used to set up leases.

1. _Gross rental lease_   The lessor pays some or all of the operating expenses. When a landlord pays most, but not all, of the operating expenses, this may be referred to as a **modified gross rental lease**.

2. _Net rental lease_   The tenant pays all the operating expenses.

C. Types of leases

The examples below are a **sampling** of various types of leases. In the second course in this series, *Basic Appraisal Procedures,* we will examine leases in more detail.

1. _____*Flat rental*_____ *A lease with a specified level of rent that continues throughout the lease term.*

2. _____*Graduated rental*_____ *A lease that provides for specified changes in rent at one or more points during the lease term.*

   a. **Step-up lease.** The payments increase at specified intervals.

   b. **Step-down lease.** The payments decrease at specified intervals.

3. _____*Revaluation lease*_____ *A lease that provides for periodic rent adjustments based on the market rental rate of the space.* This is sometimes accomplished through appraisal or arbitration.

4. _____*Index lease*_____ *A lease, usually for a long term, that provides for periodic rent adjustments based on the change in an economic index.*

5. _____*Percentage lease*_____ *A lease in which the rent or some portion of the rent represents a specified percentage of the volume of business, productivity, or use achieved by the tenant*. This type of lease is most frequently used for retail properties. A straight percentage lease may have no minimum rent, but most specify a guaranteed minimum rent and an overage rent.

   a. Rents paid in shopping centers and malls are often percentage leases. A percentage lease can be either a gross or net lease.

   b. **Overage rent.** *The percentage rent paid over and above the guaranteed minimum rent or base rent; calculated as a percentage of sales in excess of a specified breakpoint sales volume.*

6. _____*Sandwich lease*_____ *A lease in which an intermediate, or sandwich, leaseholder is the* tenant *of one party and the* landlord *of another.* (The words *tenant* and *landlord* are substitutions for the words used in *The Dictionary of Real Estate Appraisal*.)

7. <u>*Solar photovoltaic leases or power purchase agreements (PPAs)[7]*</u> vary widely in terms but are generally for 20 years. The leases usually state that the solar photovoltaic system is personal property and the property owner is responsible for paying personal property tax (if any). The appraiser must verify ownership and seek a copy of the lease. Some lease terms may have a negative impact on the property's market value.

IV. Deeds

C. Voluntary and involuntary transfer of title

3. There are two additional involuntary transfers of rights to consider.

a. <u>*Adverse possession*</u> This involuntary transfer of property takes place when a party makes a property claim by taking possession over a period of years, and the owner fails to contest the possession. This type of transfer is allowed because the law recognizes that possession and use of the land is an essential component of ownership. The time required to obtain title legally by this process varies from state to state.

There are requirements for this type of land transfer.

- **Open** (i.e., the possession and use is obvious to everyone).

- **Notorious** (i.e., others know about it).

- **Continuous** possession and occupation.

- **Hostile** (i.e., without the consent of the true landowner).

- **Adverse** (i.e., to the true owner's right of possession).

b. <u>*Prescriptive easement*</u> *The right to use another's land, which is established by exercising this right openly, hostilely, and continuously over a statutory period of time.* The use must be open, notorious, continuous, exclusive, and without the owner's permission. In this case, the claimant gains a legal easement rather than legal title to the land.

A common example of an involuntary transfer is a roadway by prescription. This type of easement can occur when a public road trespassed on an individual's property many years ago and the fee owner did not contest it.

7. A solar power purchase agreement (SPPA) is a financial arrangement in which a third-party developer owns, operates, and maintains the photovoltaic (PV) system and a host customer agrees to site the system and purchases the system's electric output from the solar services provider for a predetermined period. This financial arrangement allows the host customer to receive stable, and sometimes cheaper, electricity, while the solar services provider or another party acquires valuable financial benefits such as tax credits and income generated from the sale of electricity to the host customer. Source: www.epa.gov/greenpower/buygp/solarpower.htm#one

Review Quiz

Fill in the missing data to the following questions.

1. An option agreement is a ____*unilateral*____ type of contract.

2. The initial payment to bind a sales contract is called ____*earnest*____ money.

3. Parties to a valid contract must enter the agreement voluntarily to satisfy the element of ____*consent*____ .

4. A contract where the seller acts in the role of a lender is called a ____*land contract*____ .

5. In a ____*gross*____ lease, the tenant pays a fixed rent and the landlord pays the property's operating expenses.

6. In a leased property, the landlord has a ____*leased fee*____ interest.

7. When a party conveys whatever interest he or she has with no warranties, the type of conveyance used is called a ____*quitclaim deed*____ .

8. The involuntary transfer process by which a party takes possession and use of another's land over a period of years is known as ____*adverse possession*____ .

9. The type of deed that provides all of the covenants to warrant title is known as a ____*general warranty deed*____ .

10. A tenant has an ice cream shop in a shopping mall and pays $2,000 per month plus 4% in overage rent based on gross sales after the first $100,000. This is an example of a ____*percentage*____ lease.

8.1 Dilemma

A wealthy corporate executive spent nearly three years building a house at a cost of $7 million. However, several months before the date of completion, the executive received a promotion and was transferred out of the area. As part of a transfer package, the executive's company needed an appraisal of the property's value to measure against the construction cost that was guaranteed to the executive. Since the residence is new and has never been lived in, the company thought cost and value should be the same.

What are your thoughts on the company's position?

In the case used as the basis for this dilemma, the property sold for $2 million after 700 days on the market. The styling of the house was highly individualistic, and the residence was overimproved in comparison to surrounding homes. This is a good illustration that cost and value may differ—perhaps significantly.

8.2 Dilemma

Keaton recently purchased a property (land and building) for $150,000. Two independent appraisers have provided opinions of $150,000 on the property, so in this case price and value appear to be the same. However, Keaton now intends to sell the property and has set a firm price of $200,000.

Assuming Keaton made no changes to the property and the market is stable, would anyone pay the higher price?

Possibly, because price is influenced by many factors. One factor is contract terms. If Keaton's terms are $0 down at 3% interest and 40 years to pay, that would be about $716 per month. To compare, a 25-year mortgage at 7% with $0 down based on $150,000 is $1,060 per month. A payment difference of $344 per month just might induce a buyer to pay a price of $200,000, but the value of the property is still $150,000.

III. Types of Value

B. **Use value**—The value a specific property has for a specific use.

2. Use value may also come into play when appraising **limited-market properties** and **special-use properties** that have relatively few potential purchasers.

Limited-market property examples

a. Large manufacturing plant

b. Research and development property

Special-use property examples

a. *Religious facility*

c. *Museum, library, school*

d. *Hospital, post office*

8.3 Dilemma

Two residential properties in an assessor's tax district are located on the same street and are very similar. However, one property has been maintained impeccably by its owner, and the other is unkempt with obvious signs of neglect by its owner.

Should the assessor set the values on these properties the same, or should they reflect their respective conditions?

This is a tough question because the assessor does not want to penalize an owner's property with higher taxes simply because the owner maintains the property. However, condition is part of a property's value, and the assessor is obligated to reflect any market difference, including condition, in the valuation.

Review Quiz

Fill in the missing data to the following questions.

1. The value based on ad valorem tax rolls is called ___*assessed*___ value.

2. ___*Value*___ is an opinion of the worth of a property as of a specified time.

3. A tangible benefit of real estate that enhances its attractiveness or increases the satisfaction of the user, but is *not* essential to use is called ___*an amenity*___ .

4. Once stated, ___*price*___ is a historical fact.

5. When interest rates rise and unemployment is high, it may affect a factor of value called ___*effective purchasing power.*___

6. A hospital is classified as a ___*special-use*___ property for valuation purposes.

7. ___*Investment value*___ is the value of an investment to a particular investor.

8. An appraiser estimates the ___*insurable*___ value in the event there is a catastrophic loss such as from a fire or flood.

9. The market value of a business property including the real property and intangible assets is called ___*going-concern value*___ .

10. ___*Development*___ costs are identified with the overall project and include all the expenditures required to bring a property into an operating state.

I. Market Value Fundamentals

B. The components of market value are listed below. The various market value definitions have similar wording.

1. Market value is expressed as the _____*most probable*_____ price. These words must be present in order to define market value. This phrase, however, is actually quite recent. The previous wording was *the highest price paid,* which was the standard used by lending institutions until the mid-1980s.

2. As of a _____*specified*_____ date. The appraiser's report will refer to this component as the effective date of the appraisal.

   a. The **effective date** is simply the date of the value opinion.

   b. Effective date can be expressed in one of three ways: 1) Retrospective (past), 2) Current (present), or 3) Prospective (future).

3. In cash, or terms _____*equivalent*_____ to cash or in other precisely revealed terms (to the seller).

9.1 Dilemma

Halvorson is performing an appraisal assignment and has learned the following information about a comparable property she wants to use in her appraisal:

The property sold during a tight credit market and high interest rates. At the time of sale, the seller agreed to pay 6 points to buy down the buyer's mortgage in order to obtain the desired price. The buyer paid $250,000 and applied for an 80% mortgage.

How should Halvorson analyze the concessions?

1) $250,000 sale price x 0.80 LTV = $200,000 mortgage

2) Seller-paid points: $200,000 x 0.06 = $12,000 mortgage buydown

3) $250,000 sale less $12,000 = $238,000 cash equivalent price

The appraiser should further analyze the market to ensure that the cash equivalent price of $238,000 reflects what similar properties sell for without seller concessions. Remember, seller concessions may impact the sale price but not the value.

4. The next component in defining market value is _____*reasonable exposure*_____ *in a competitive market under all conditions requisite to a fair sale.*

5. Buyer and seller each acting

    a. *Prudently*

    b. *Knowledgeably*

    c. *For self-interest*

    d. *Unaffected by undue stimulus*

6. **Self-test** – combine all the components of market value—The following definition is taken from *The Appraisal of Real Estate,* 15ᵗʰ ed., P. 48.

    Market value is *the* _____*most probable*_____ *price, as of a* _____*specified*_____ *date, in cash, or in terms* _____*equivalent*_____ *to cash, or in other precisely revealed terms, for which the specified property rights should sell after* _____*reasonable*_____ *exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently,* _____*knowledgeably*_____ *and for self-interest, and assuming that neither is under* _____*undue*_____ *duress.*

II. Market Value in Appraisal Practice

B. When exposure time is a component of the definition for the value opinion being developed in an assignment, the appraiser must also develop an opinion of reasonable exposure time connected to that value opinion.

   2. Exposure time will differ depending on the real estate's property type, value range, and market conditions. The following are some examples that might not meet the definition of market value:

      a. *Liquidation, forced sale (sheriff's auction)*

      b. *Excessive or limited time on the market*

   3. **Marketing time** is *an opinion of the amount of time it might take to sell a real or personal property interest at the concluded market value level during the period immediately after the effective date of an appraisal.*

9.2 Discussion Question. In the Real World

1. Ackerson is working on an assignment of a newly built property and is having difficulty finding comparable sales. After extensive research in the property database at the county offices, Ackerson discovered four sales of newly built homes. After further checking, it turned out that all four sales were individually custom-built for the buyer and never offered on the open market.

   Is it acceptable for Ackerson to use these sales in a market value appraisal?

   Generally, no. The sales reflect the cost and price between buyers and builders, but the properties were never offered on the general market for a reasonable period of time. They should be considered but not as primary market sales.

2. Whitney is working on an appraisal of a condominium unit located in an economically distressed area. The research reveals that all comparable properties in the area are foreclosure sales.

   Is it appropriate for the appraiser to use these sales if market value is being sought?

   Typically not appropriate. If the market is comprised primarily of foreclosed properties, the appraisal should include non-forced sales—even if those sales are located outside the immediate area.

3. Armstrong was asked to perform a retrospective appraisal using a date 3 years prior to the date of the report. Armstrong used sales that sold and closed after the effective date identified in her appraisal.

   Can she use these sales in an appraisal assignment involving market value?

   Yes, but she must also include sales that sold before the effective date to ensure that the assignment results are not misleading.

   "Misleading" is defined in USPAP as "intentionally or unintentionally misrepresenting, misstating, or concealing relevant facts or conclusions"

   __Note:__ This problem was based on an FAQ included with The Appraisal Foundation's USPAP document.
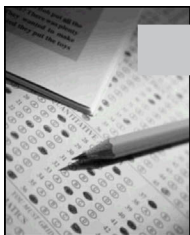
This multiple-choice test is for your benefit and provides a review of everything covered in Section 3. This is a "closed book" test. Choose the *most* correct answer.

1.   A typical option contract to purchase real property binds which of the following?

    A.   both buyer and seller

    B.   neither buyer nor seller

    C.   only the buyer

*   D.   only the seller

2.   The total dollar expenditure to develop an improvement is called

*   A.   cost.

    B.   going-concern.

    C.   price.

    D.   use value.

3.   An increase in demand will typically affect a commodity in what way?

    A.   a decrease in price

    B.   an increase in market exposure time

*   C.   an increase in price

    D.   an increase in supply

4.   An agreement that is presumed to exist because of the parties' actions is called an implied contract. In contrast, an agreement that is put into words (spoken or written) is what type of contract?

*   A.   express contract

    B.   forbearance contract

    C.   legal purpose contract

    D.   unilateral contract

5. Jensen has a sale contract on a property, but it does not state the legal description, and it is not signed by the seller. The contract is

    A. implied

    B. unilateral

    C. valid

*   D. void

6. The value according to tax rolls in ad valorem taxation is called

*   A. assessed value

    B. insurable value

    C. investment value

    D. liquidation value

7. A portion of the purchase price given to bind the transaction is known as

    A. a guarantee certificate

    B. a purchase receipt

*   C. earnest money

    D. trust funds

8. Warner is a tenant and pays a fixed rent, while his landlord pays all of the operating expenses and real estate taxes. What type of lease is this?

    A. double net

*   B. gross

    C. net

    D. sandwich

9. If demand is constant for a particular commodity, what factor of value would make the commodity more valuable?

    A. desire

    B. effective demand

*   C. scarcity

    D. utility

10. Jill sold her property interest to her sister Joanna, involving land they jointly owned. Years later, Joanna decided to sell the land, but the buyer wanted assurance that Jill had no rights to the property. What type of deed would Jill provide in this situation?

    A. bargain and sale deed

    B. general warranty deed

*   C. quitclaim deed

    D. special warrant deed

11. The value of an investment property to one particular investor is called

*   A. investment value

    B. market value

    C. market value of a going concern

    D. use value

12. Rita purchased a timeshare property that included a one-week expense-paid trip to the Cayman Islands as an inducement to buy the property. The trip was valued at $3,000. If the property sold for $28,000, what is a reasonable cash equivalent price for the property?

*   A. $25,000

    B. $28,000

    C. $31,000

    D. none of the above

13. The type of deed that provides the greatest warranty against lawful claims is a

    A. deed of trust

*   B. general warranty deed

    C. special warranty deed

    D. title insurance certificate

14. A sale that takes place between unrelated parties is considered to be what kind of transaction?

*   A.   arm's-length

         B.   cash equivalent

         C.   reasonable exchange

         D.   self-interest

10.1 Discussion Question. **Value Influences – Governmental**

Break up into groups of four to eight people to discuss the various types of governmental and legal influences that you see in the area where you live that might have a measurable influence on real estate values. See how many different types of laws, regulations, and policies that your group can come up with. We will then regroup to discuss your findings with the whole class.

Suggestions

- *Homestead exemption laws*
- *Conservation initiatives (zoning)*
- *Agricultural policies (subsidies)*
- *Business taxes on sales and use*
- *Sign use control*
- *Federal mandates to reduce energy use*
- *Tax credits for energy efficiency*

- *Rent controls*
- *Financing legislation*
- *Environmental legislation*
- *Police, fire, utilities*
- *Health codes*
- *Zoning and building codes*
- *Renaissance zone*
- *Master (comprehensive) plans*

II. Four Forces that Influence Value

C. Economic forces

1. What types of economic forces can you observe at the **national and global** levels that influence real estate values?

   - *Price levels for crude oil (can affect demand for energy-efficient and green sustainable construction)*

   - *National debt and trade deficit / consumer confidence*

   - *Terrorist activities (affecting travel industry)*

   - *Tariffs and embargoes*

   - *Competition with EU and Asian markets (that is, China)*

   - *Foreign competition in agricultural products*

Break up into the same groups to consider and discuss the social trends that you see taking place that are influencing values. Let's divide the trends into three categories—residential, commercial, and agricultural.

Residential

- *Move toward more energy-efficient housing (tighter construction)*

- *Move toward green or high performance-rated homes*

- *Tight clustering of housing surrounded by large open natural areas*

- *Whirlpool tubs, microwaves, and home entertainment systems*

- *Disappearance of living room and dining room in new construction*

- *Home offices*

Commercial

- *Coffee shops (Starbucks replaces corner grocery store)*

- *Grocery and fast-food restaurants located in gas service stations*

- *Old buildings (warehouses) that transition to high-density residential (lofts, etc.) and also convert into high-end entertainment centers*

- *Hyper stores such as Super Wal-Mart and Home Depot*

Agricultural

- *Trend toward more business ownership rather than family farms.*

- *Leasebacks for recreational uses (hunting retreats, etc.)*

- *Organic farming, hobby farms, and farmer's market*

E. Environmental and geographic forces

   1. Environmental and geographic issues that affect real estate

      b. Hazardous substances within commercial and residential structures

         ▪ *Lead (for example, in lead-based paint) and asbestos* ⋯⋯⋯⋯⋯⋯⋯

         ▪ *Radon* ⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯

         ▪ *Indoor air quality (IAQ) and mold issues* ⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯

         ▪ *Carbon monoxide (CO), backdrafting furnaces* ⋯⋯⋯⋯⋯⋯⋯⋯⋯

         ▪ *Electromagnetic fields (EMF) stray voltage (dairy farms)* ⋯⋯⋯

         ▪ *Polychlorinated Biphenyls (PCBs)* ⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯

         ▪ ⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯

      c. Hazardous substances in the surrounding environment

         ▪ *Leaking underground storage tanks* ⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯

         ▪ *Landfills and groundwater contamination* ⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯

         ▪ *Old industrial sites* ⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯

         ▪ *Nuclear waste storage* ⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯

         ▪ ⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯⋯

Review Quiz

Write a number on the line opposite each item below to indicate whether the item is best described as

1. Governmental and legal

2. Economic

3. Social

4. Environmental and geographic

___3___ A sunbelt city has a growing population of senior citizens.

___2___ Stock market averages drop 40% of their value over a one-year period.

___4___ The lack of snow in the last five years hurt several industries in the upper Midwest such as makers of snowmobiles, snow blowers, etc.

___1___ To conserve natural resources, a city makes it easier for developers to get plans approved for clustered developments.

___2___ Higher gas prices cause housing prices and rents to increase near the business centers of the city.

___3___ Two-bedroom homes are in greater demand due to smaller families.

___2___ The changing work environment causes home offices to increase in popularity.

___4___ Couple decides against buying a property due to proximity to a landfill.

___3___ Couple weighs two locations and decides to purchase a particular property because the area has high-speed Internet access.

___4___ New interstate freeway creates a barrier dividing an existing neighborhood.

I. Economic Principles in Real Estate

C. Principle of supply and demand

4. Supply and demand examples

What are the following data telling you about supply and demand?

Period	Median Price	Properties Offered	Properties Sold
1st Quarter	$100,000	100	95
2nd Quarter	$110,000	75	75
3rd Quarter	$115,000	125	120
4th Quarter	$125,000	120	100

Evidence of balance as supply and demand match. Properties are relatively in equilibrium.

Again, what are the following data telling you about supply and demand?

Period	Median Price	Properties Offered	Properties Sold
1st Quarter	$350,000	110	100
2nd Quarter	$355,000	125	90
3rd Quarter	$345,000	135	75
4th Quarter	$360,000	125	120

Market slumps in 2nd and 3rd quarters; then it recovers in the 4th quarter.

F. Principle of balance

2. Subgroup principles based on the principle of balance

c. Subprinciples of conformity

- *Principle of progression*

  The concept that a lower-priced property will be worth more in a higher-priced neighborhood than it would in a neighborhood of comparable properties.

- *Principle of regression*

  The concept that a higher-priced property will be worth less in a lower-priced neighborhood than it would in a neighborhood of comparable properties.

II. Introduction to the Concept of Highest and Best Use

A. Defining highest and best use

4. Decision process in a highest and best use analysis:

Land as though vacant
Options
Improve
Leave vacant

Property as improved
Options
Leave as is
Alter
Demolish

D. Excess land and surplus land
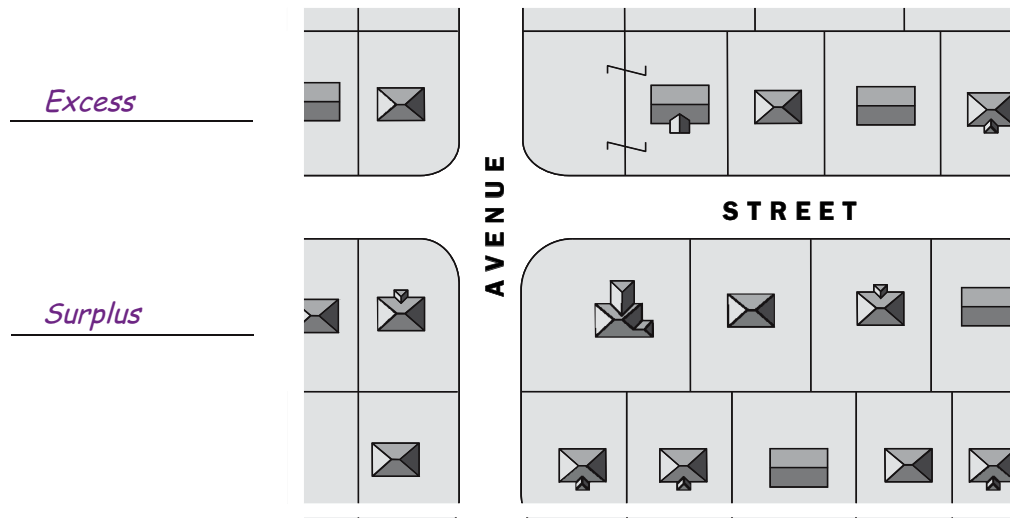
Excess _____

Surplus _____

Review Quiz

Write a number on the line opposite each item below to indicate whether the item is best described as

1. Anticipation	7. Externalities
2. Balance	8. Increasing and decreasing returns
3. Change	9. Opportunity cost
4. Competition	10. Substitution
5. Conformity	11. Supply and demand
6. Contribution	12. Surplus productivity

___10___ Property values tend to be set by the cost of acquiring an equally desirable substitute.

___9___ The cost of options foregone or opportunities not chosen.

___12___ The net income that remains after the costs of the various agents of production have been paid.

___7___ Forces outside a property that may have a positive or negative effect on its value.

___2___ Value is created and sustained when supply and demand are moving toward a state of equilibrium.

___1___ Value is the present worth of future benefits.

___5___ Value is created and sustained when the characteristics of a property harmonize with the surrounding area and are typical in the marketplace.

___6___ The value a particular component adds to the value of the whole property.

___3___ The market is dynamic.

12.1 Problem

Pollution Plume

Several months ago, the property owners in a residential neighborhood were surprised to read in their newspaper that several test wells had been installed in their area to monitor a migrating pollution plume. Since that time, no sales activity has taken place in the area.

1. *What economic principles are at work in this problem? How are they working?*

    Anticipation, change, externalities, supply and demand. The market is

    anticipating a negative impact. The external source of the problem

    has significantly changed the dynamics of supply and demand.

2. *What is your opinion about why there is no sales activity in the area?*

    No demand for the properties due to the uncertainty created by the

    migrating plume. What value do these properties have, and to whom?

12.2 Problem

Your instructor will lead the discussion on this problem and provide additional details.

Two adjacent waterfront properties have been listed for sale at the same price. Both have the same lot size but differ in their shoreline and street frontage. Assuming these properties are alike in every way except for the shape of the lots, which property will likely sell for more?
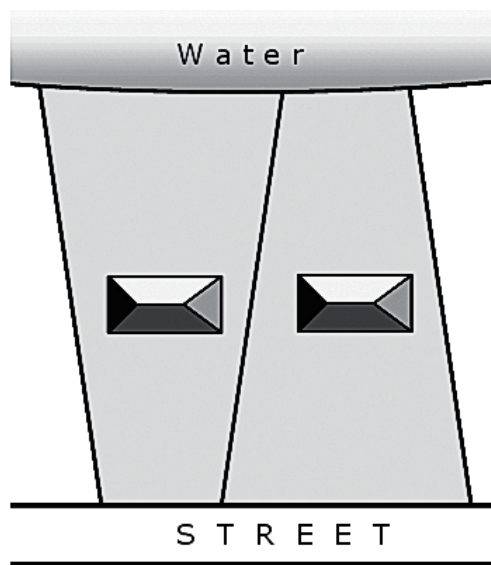
1. *What economic principles are at work in this problem?*

   Balance, competition, increasing and decreasing returns, externalities, substitution.

2. *What features do you believe buyers are looking for in waterfront properties?*

   Access to the water and views of the water.

3. *Which property will likely sell for more and why?*

   The property on the left with more linear feet on the waterfront will likely have greater value than the adjacent property.

12.3 Problem

Setback Requirements

A property owner buys a strip of land from his neighbor allowing him to meet the setback requirements for adding a building improvement that will increase the kitchen and informal dining area of his residence.

What economic principles are at work in this problem? How are they working?

Contribution, increasing and decreasing returns, and possibly conformity.

The principles reflect the owner's belief that his property will be worth

more after the improvements are completed, but the reality of that

issue depends on the market's reaction to the remodeling project.

12.4 Problem

Growing Population

A municipality is under pressure to bring in low-cost, energy-efficient housing and rental units to meet its growing population needs. Federal subsidies are available to cities over the next two years with projects that meet specified guidelines. Regional studies show that growth will outstrip available housing three to one in the next five years unless action is taken.

What economic principles are at work in this problem and why?

Anticipation, change, supply and demand, competition, externalities

due to social and economic pressures, and possibly opportunity cost.

12.5 Problem

Resale of Property

A shopping strip of factory outlets was built within an upscale suburban area. After five years of poor sales performance, the stores closed, and the inventory was liquidated. The property sold after several years on the market to a new owner who removed the buildings and built an upscale car dealership with a LEED Silver certification.[11]

What economic principles are at work in this problem? How are they working?

Supply and demand, competition, opportunity cost, externalities.

Anticipation is also working in a negative manner for the outlet store and a

positive manner for the car dealership. It appears the outlet store was not

the highest and best use for this property given its upscale location.

The LEED certification is the investor's contribution to the community.

Demand is growing for LEED-certified buildings because they have a lower

carbon footprint, are energy efficient, and should have higher net incomes

compared to traditional-built buildings of similar size.

---

10. The Leadership in Energy and Environmental Design (LEED) designation was introduced by the U.S. Green Building Council (USGBC) in 2000 as a green rating system for commercial buildings.

12.6 Problem

Market Resistance

In one-unit residences over $400,000, real estate brokers find moderate market resistance to properties that lack a center island in the kitchen and a whirlpool tub in the bath off the owner's bedroom suite.

What economic principles are at work in this problem? How are they working?

Supply and demand, competition, contribution, conformity, and substitution.

Buyers in a particular market have expectations. Competing properties must

conform to these expectations; otherwise, buyers will find substitutes.

12.7 Problem

Holdout to Land Acquisition

An elderly owner of a one-unit residential property is the last holdout to a massive land acquisition undertaken for the development of a large shopping complex. The exasperated developer is angered by the owner's refusal of his final offer to purchase the property at four times its market value. The developer makes no further offers and builds the center without acquiring the residence. As a result the property is isolated by a parking lot on all sides.

1. *What economic principles are at work in this problem?*

   Revenge (oops, that's not a principle), anticipation, substitution, conformity, externalities, change, supply and demand, and perhaps opportunity cost could be the principles at work in this problem.

2. *What alternatives could the developer have offered?*

   ▪ *Could have offered a life estate to the elderly owner*

   ▪ *Offered to move the existing dwelling to another location*

   ▪ *May have sought help from the municipality to condemn the property if in the public interest (long shot answer) especially in light of the Supreme Court ruling in Kelo v. New London*
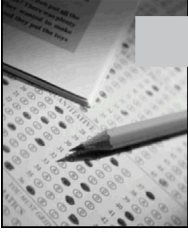
This multiple-choice test is for your benefit and provides a review of everything covered in Section 4. This is a "closed book" test. Choose the *most* correct answer.

1. Which principle states that the property with the lowest price attracts the greatest demand and widest distribution when several competing properties are available?

    A.   competition

    B.   contribution

    C.   increasing and decreasing returns

*   D.   substitution

2. Four forces impact value. Employment levels, wage rates, and interest rates are examples of which force?

*   A.   economic

    B.   environmental and geographic

    C.   governmental and legal

    D.   social

3. Which principle states that real estate value is created and sustained when the characteristics of a property correspond to the demands of its market?

    A.   balance

*   B.   conformity

    C.   externalities

    D.   highest and best use

4. The elements that create wealth, income, or services when they are combined are known as

*   A.   agents of production.

    B.   forces that influence real estate value.

    C.   land and improvements.

    D.   surplus productivity.

5. A temporary use of a property until a different use becomes maximally productive is

    A. conditional use.

    B. excess use.

*   C. interim use.

    D. nonconforming use.

6. Zoning, public transportation, and sales taxes are examples of which of the four forces impacting value?

    A. economic

    B. environmental and geographic

*   C. governmental and legal

    D. social

7. Avery is beginning a highest and best use analysis of a property with existing improvements. What is the first analytical step Avery should perform?

    A. an analysis of consistent use

    B. an analysis of interim use

*   C. an analysis of the land as though vacant

    D. an analysis of whether the property has excess land

8. A small average residence is located in an area of luxury homes. The effect of the surrounding homes on the small residence is called

    A. conformity.

    B. excess profits.

*   C. progression.

    D. regression.

9. In an office market that has more available space than tenants willing to rent, what principle will affect pricing the most?

    A. anticipation

*   B. competition

    C. conformity

    D. contribution

10. Which theory states that land cannot be valued on the basis of one use while the improvements are valued on the basis of another use?

* A. consistent use

B. interim use

C. uniform use

D. value in use

11. An owner continues to make improvements to a property to the point where the value is no longer enhanced. What subgroup principle of balance does this illustrate?

A. contribution

* B. increasing and decreasing returns

C. opportunity cost

D. surplus productivity

12. Moderate profits attract healthy competition, but excess profits can lead to what?

A. decrease in demand

B. equilibrium

C. increase in supply

* D. ruinous competition

13. Which of the following could not be considered an interim use?

A. building in a warehouse district currently used as a religious facility

* B. manufacturing business operating at 75% of its normal production

C. rural tract of land farmed while awaiting subdivision approval

D. vacant downtown commercial land used for surface parking

14. Ellis built his residence on two lots in a manner that makes it impossible to subdivide the land. The land site situation that Ellis has is an example of what?

A. excess land

B. opportunity cost

* C. surplus land

D. surplus productivity

15.   Which of the following is *not* a test of highest and best use?

*   A.   environmental viability

        B.   legal permissibility

        C.   maximum productivity

        D.   physical possibility

We're going to examine how various markets work together to shape real estate value. We'll identify the primary market players and see the roles they play as they interrelate and influence the real estate market.

13.1 Dilemma

Annuity or Lump Sum

You have just won the lottery with a grand prize of $160 million. You can collect the money in equal payments over 25 years, or you can take a lump sum of $92 million, which is really $65 million after taxes.

How would you spend or invest your newfound wealth?

Think about market competition for investment dollars. Would they have concerns about risk and liquidity? Would they take the annuity or lump sum?

Life Insurance Investment

An acquaintance calls asking you for financial advice. Her husband recently died of cancer, and she received $500,000 from his life insurance. She is 35 and has three children under seven years of age.

What advice would you give the widow on investing her funds?

This scenario is a contrast to the previous scenario, or is it? Should she pay off the house or buy a house if currently renting? What about liquidity and risk in her investment choices?

II. Money Markets, Capital Markets, and Real Estate Markets

A. Money market

2. Short-term money instruments that comprise the money market can include

a. _Federal funds_   *US funds available at a Federal Reserve Bank for member banks*

b. _Treasury notes_   *In the US, intermediate securities with maturities of 1 to 10 years*

c. _Certificates of deposit (CDs)_   *Time deposit financial instrument with a banking organization*

d. _Commercial paper_   *Corporation's promissory notes used to borrow short-term funds*

e. _Municipal notes_   *Short-term, federally tax-exempt obligations of local governments*

f. _Eurodollars_   *US dollars that are held in banks outside of the US*

B. Capital market

4. Capital instruments are divided into long-term and intermediate-term and may include

a. _Bonds or debentures_

b. _Stocks_

c. _REITs_

d. _Mortgages_

e. _Deeds of trust/land contracts_

5. Mortgages have a special relationship to real estate, so let's take a closer look at the mortgage market.

   d. Types of mortgages

   - Guaranteed mortgage

     Department of Veterans Affairs (VA) loan

   - Insured mortgage

     HUD's Federal Housing Administration (FHA) program

     and also private mortgage insurance (PMI) for

     conventional mortgages

   - Conventional mortgage

   - Energy-efficient mortgage (EEM) – may be conventional, FHA, or VA

   - Balloon mortgage

     Mortgage that is not fully amortized at maturity

     and requires a lump sum payment

Review Quiz

Fill in the missing data to the following questions.

1. The interaction of buyers and sellers who trade short-term money instruments is referred to as a *money market*.

2. Bonds, stocks, and mortgages are *capital* instruments.

3. A pledge of a described property interest as security for repayment of a loan is called *a mortgage*.

4. An FHA loan is an example of *an insured* mortgage.

5. The *U.S. Treasury* implements the fiscal policy of the United States.

Check the appropriate box for each question.	TRUE	FALSE
6. *Inflation* and *appreciation* are terms that describe the same thing.	☐	☒
7. The Federal Reserve carries out the nation's monetary policy.	☒	☐
8. Treasury bills are considered to be short-term money instruments.	☒	☐
9. The two sources of capital for real estate are federal funds and the secondary mortgage market.	☐	☒
10. Risk plays a significant role in how investments compete against each other.	☒	☐

I. Math as an Appraisal Tool

B. Math is what appraisers do every day.

2. **A typical appraisal problem.** Mosley is appraising a vacant land site that is two thirds of an acre in size and has 112.3 feet of frontage on the street. The appraiser's market data indicates a price of $2.90 per square foot. What is the price per foot for the 112.3 feet of road frontage?

1 acre = 43,560 / 3 = 14,520 × 2 = 29,040 sq. ft. for the land

29,040 × $2.90 = $84,216 value of the land

$84,216 / 112.3 frontage = $749.92 per front foot (or $750)

14.1 Problem

Introductory T-Bar Problems

1. A property owner discounted his asking price by 12% in order to attract market interest in the property.

   If the original asking price was $250,000, how much was the price reduction?

   $30,000 Answer

   Divide ——————⊤—————— Divide

   0.12 | *$250,000*
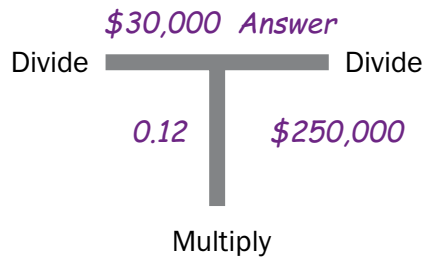
   Multiply

14.1 Problem

Introductory T-Bar Problems – cont.

2. Culver discounted his asking price by $45,000.

   If the original asking price was $300,000, what was the percentage price reduction?

   $45,000

   Divide ——————————— Divide

   (Answer is 15%)   0.15 | $300,000

   Multiply

3. McDaniel lowered his asking price by 10%.

   If the original asking price was $450,000, what was the revised asking price of the property?

   Note: In this case, the solution can be shortened by restating the problem to say that the revised asking price is 90 percent of the original price. This will save you one step in the solution.

   $405,000 *Answer*

   Divide ——————————— Divide

   0.90 | $450,000

   Multiply

4. A tenant gave the landlord a damage deposit that was 150% of the monthly rent.

   If the monthly rent is $2,100, what is the amount of the damage deposit?

   Note: In this problem, the rate is greater than 100% and can be written as 1.50. Therefore, the "part" will be greater than the "total" in the solution.

   $3,150 *Answer*

   Divide ——————————— Divide

   1.50 | $2,100

   Multiply

14.2 Problem

Practice Problems

1. A seller was charged a $43,500 commission fee by her real estate broker.

   If the sale price was $725,000, what was the broker's commission percentage?

   $43,500

   (Answer is 6%)   0.06 $725,000

2. A client included $5,000 rush service in the overall assignment fee of $25,000.

   What is the percent attributable to the rush service fee?

   $5,000

   (Answer is 20%)   0.20 $25,000

3. *How much money does Torres need to deposit to earn $3,000 in annual interest if the annual interest rate is 5%?*

   $3,000

   0.05 $60,000 *Answer*

4. Conventional financing requires 20% as a down payment, and a pre-qualified buyer has $70,000 cash available.

   What is the maximum price the buyer can afford?

   $70,000

   0.20 $350,000 *Answer*

14.2 Problem, cont.

Practice Problems – cont.

5. Jeter paid $10,800 in debt service last year (principal and interest) based on an original mortgage amount of $150,000.

   What percent is the annual debt service to the mortgage amount?

   $10,800

   (Answer is 7.2%) 0.072 $150,000

14.3 Problem

Finding Percentage Change Using an HP 12C

1. The median sale price for one-unit properties in the city of Lynwood is currently $182,000. The median price two years earlier was $227,500.

   What is the change in median price from two years ago expressed as a percent?

   $227,500 [ENTER] *$182,000* [Δ%] *equals −20.00 (or −20%)*

2. An investor experienced a loss of 20% in her REIT mutual fund during the previous two quarters.

   If the investor's REIT portfolio was valued at $50,000 prior to the loss, how much of a percentage gain in the fund does she need to fully recover?

   $50,000 [ENTER] *0.80* [X] *$50,000* [Δ%] *equals 25.00 (or 25%)*

   Note: *$40,000 is the portfolio value after the 20% loss*

   Or try [f] [REG] *$40,000* [ENTER] *$50,000* [Δ%] *equals 25.00 (or 25%)*

Review Quiz

Solve the problem to the following questions. Answers are found in the Solutions Booklet.

1. A property owner sold her 3/4-acre site for $3.50 per square foot. What was the final selling price of the land?

   43,560 sq. ft. × 0.75 = 32,670 sq. ft. × $3.50 per sq. ft. = $114,345

2. The property taxes on a land parcel increased by $984 in the last year. If the taxes were $12,300, what is the percentage of increase?

   $984

   (Answer is 8%)   0.08 $12,300

   HP 12C calculation: $12,300 ⟨ENTER⟩ *$13,284* ⟨Δ%⟩ *equals 8.00*

   $13,284 used above was derived by adding $12,300 and $984

3. An existing building cost $450,000 when it was new. Over the years, the building has depreciated 15% due to wear and tear. What is the depreciated cost of the building?

   $382,500 is the answer

   0.85 $450,000

   In the above solution, think of the building as 85% depreciated or

   alternatively: $450,000 × 0.15 = $67,500 amount of depreciation

   $450,000 – $67,500 = $382,500 depreciated cost of the building

4. The Fairchilds' property was listed for $525,000, but it was reduced in price to $493,500 due to a lack of market interest. What is the price discount expressed as a percentage?

$31,500

(Answer is 6%)   0.06 $525,000

$525,000 − $493,500 = $31,500 / $525,000 = 0.06 or 6% discount

HP 12C calculation: $525,000 [ENTER] $493,500 [Δ%] equals −6.00

5. A property listed on an Internet auction Web site had a minimum reserve of $160,000, which is the price not revealed to online bidders. After the bidding opened, the offers exceeded the reserve, and the property eventually sold for $174,400. What percent over their reserve price did the sellers receive?

$14,400

(Answer is 9%)   0.09 $160,000

$174,400 − $160,000 = 14,400 / $160,000 = 0.09 or 9% increase

HP 12C calculations: $160,000 [ENTER] $174,400 [Δ%] equals 9.00

15.1 Problem

Using Multiplication to Solve Percentage Problems

1. Sue purchased a property for $100,000. After making improvements, she sold the property for 10% more than she paid for it.

   What is the new sale price?

   $110,000

   1.10   *$100,000 (Base)*

   Or $100,000 (base) × 1.10 (percent applied) = $110,000

2. Jim purchased a property for $100,000. He later sold the property during a down market period for 10% less.

   What is the new price?

   $90,000

   0.90   *$100,000 (Base)*

   Or $100,000 (base) × 0.90 (percent applied) = $90,000

   Think of the new price as 90% of the original purchase price.

15.2 Problem

Using Division to Solve Percentage Problems

1. Sue sold her property for $110,000. This price is 10% more than what she paid for it.

   What was the original purchase price?

   $110,000

   1.10 $100,000 (Base)

   Or $110,000 / 1.10 (percent applied) = $100,000 (Base)

2. Jim sold his property for $90,000 during a down market period. This price was 10% less than what he paid for it.

   What was the original purchase price?

   $90,000

   0.90 $100,000 (Base)

   Or $90,000 / 0.90 (percent applied) = $100,000 (Base)

15.3 Problem

Practice in Percentage Problems

1. Jacquelyn sold her condominium for $126,000. This price was 5% more than she paid for it.

   What was the original purchase price?

   Clue. First, decide whether the problem has supplied the base number to which a percent is applied, or if you have to apply the percent to another number to obtain the base. Next consider whether the base is inferior or superior.

$$\$126,000$$

   $$1.05 \quad | \quad \$120,000 \ (Base$$

   Or $126,000 / 1.05 (percent applied) = $120,000 (Base)

2. An appraiser selected a property that sold for $253,000 as a comparable sale in an assignment.

   If the sale is 15% superior to the subject property, what is the value of the subject property?

   Clue. The wording used in this question is a bit tricky and makes it confusing whether the comparable sale or the subject property is the base. Moreover, appraisers adjust the comparable sale, not the subject property. However, when you run into a question like this, treat the subject property as the base and solve it.

$$\$253,000$$

   $$1.15 \quad | \quad \$220,000 \ (Base)$$

   $253,000 / 1.15 = $220,000;   Check: $220,000 × 1.15 = $253,000

15.3 Problem, cont.

Practice in Percentage Problems – cont.

3. A farm property sold for $1.35 million. The sale was 10% below market due to a forced sale situation.

    What is the market price for the property?

    $1,350,000

    0.90 $1,500,000 (Base)

    $1,350,000 / 0.90 = $1,500,000

    Check: $1,500,000 × 0.90 = $1,350,000

4. A commercial property sold for $850,000, but the sale fell through and the property eventually sold for $816,000.

    What is the discount as a percent?

    $816,000

    4% (1.00 – 0.96)   0.96 $850,000 (Base)

    $816,000 represents 96% of the original sale price so the discount is 4%.

    HP 12C calculation: $850,000 [ENTER] $816,000 [Δ%] equals –4.00 (or 4%)

15.6 Problem

Using the T-Bar to Solve Tax Rate Problems

1. Petrie's property has a market value of $140,000 and is assessed at 60% of its value for tax purposes. *If the mill rate is 18 mills, what is the annual tax on the Petrie property?*

    $140,000 (MV) × 0.60 (assessment ratio) = $84,000 assessed value

    $1,512 (Annual tax)

    0.018 $84,000

2. The McIntosh Orchard Farm has a semiannual tax of $12,000. The mill rate in the area is 30 mills, and properties are assessed at 80% of market value. *What market value did the assessor assign for the McIntosh property?*

    Clue. There are three mathematical steps to solving this problem.

    $12,000 × 2 = $24,000 annual property taxes

    $24,000

    0.030 $800,000 Assessed value

    $800,000

    0.80 $1,000,000 Market value

    Or, $24,000 / 0.03 =$800,000 / 0.80 = $1,000,000 market value

    What is the **effective tax rate** for the McIntosh Orchard Farm property?

    $24,000 / $1,000,000 = 0.024 (or 2.4%) effective tax rate, or

    the 0.030 mil rate × 0.80 assessment ratio = 0.024 (or 2.4%)

15.7 Problem

Percent of Down Payment and Mortgage Amount

1. *If Express Bank has a loan limit of 75% on qualified properties, what is the maximum mortgage available on a $215,000 sale?*

$161,250 (Answer)

0.75 | $215,000

2. *If a buyer places 20% down on a $175,000 sale, what is the mortgage amount?*

$140,000 (Answer)

(100% – 20%) | 0.80 | $175,000

3. The Steiner property sold for $350,000, and the lender stated the buyer could mortgage $315,000 using private mortgage insurance. *What is the loan to value (LTV) percentage?*

$315,000

(LTV is 90%) | 0.90 | $350,000

4. A property sold for $635,000, and the credit union provided a commitment to the buyer for $508,000. *What down payment percentage did the credit union require?*

$127,000 ($635,000 – $508,000)

(Answer is 20%) | 0.20 | $635,000

15.8 Problem

Calculating Mortgage Points

1. A borrower obtained a loan from a lender who charged an origination fee of 1 point.

    How much did the borrower have to pay on a $150,000 mortgage?

    $1,500 for 1 point

    0.01   *$150,000*

2. In order to sell her property in a tight market, Collins paid 4½ points on the sale of her $180,000 residence.

    If the buyer is applying for an 80% loan, what was the dollar amount of the points that Collins paid?

    First step: $180,000 × 0.80 = $144,000 mortgage amount

    $6,480 in points

    0.045   *$144,000 Mortgage*

15.8 Problem, cont.

Calculating Mortgage Points – cont.

3. The financing on the Collins' property (in the previous question) was changed so that she paid $5,670 to buy down the interest rate on the buyer's mortgage.

    If it is a 90% mortgage, how many points did Collins pay?

    First step: $180,000 × 0.90 = $162,000 mortgage amount

    $5,670 (in points)

    Answer is 3.5 points   0.035 $162,000

15.12 Problem

Floor Area Ratio

1. *If a land site has 12,500 square feet with a FAR of 7, how many square feet of building area can be developed on the land?*

    12,500 sq. ft. × 7 (FAR) = 87,500 sq. ft.

2. A site has 30,000 square feet, and the building will occupy 40% of the land.

    If the FAR is 6, how many square feet of building area can be developed, assuming there is no restriction on the number of stories?

    30,000 sq. ft. × 6 (FAR) = 180,000 sq. ft.

3. *In the previous problem, how many stories must the building be to achieve the maximum building size with the assumption that it will occupy 40% of the land?*

    6 (FAR) / 0.40 = 15 stories (or 180,000 sq. ft. / 12,000 sq. ft.)

    Note: 30,000 sq. ft. site × 0.40 = 12,000 sq. ft. (for the first floor)

4. A developer wants to erect a building on a land site using 1/4 of the land area. *If the municipality has a FAR of 6, how many stories can the building have?*

    6 / 0.25 = 24 stories

5. What if the *same developer wanted to build on 3/4 of the land site?*

    6 / 0.75 = 8 stories
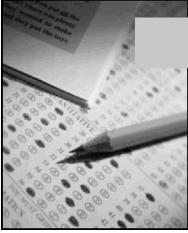
This multiple-choice test is for your benefit and provides a review of everything covered in Section 5. This is a "closed book" test. Choose the *most* correct answer.

1. Thompson paid an annual property tax this year of $2,940. If the mill rate is 28, and the assessed ratio is 60 percent of market value, what market value did the assessor assign to the Thompson property?

    A. $157,500

*   B. $175,000   *$2,940 / 0.028 = $105,000 / 0.60 = $175,000*

    C. $262,500

    D.   none of the above

2. Which of the following is *NOT* a money market instrument?

    A.   certificates of deposit

    B.   Eurodollars

*   C.   stocks

    D.   treasury bills

3. Fannie Mae, Freddie Mac, and Ginnie Mae participate in a market known as the

    A.   equity market.

    B.   money market.

    C.   primary market.

*   D.   secondary market.

4. Walton purchased a property six months ago for $200,000. Properties have been appreciating at a rate of 10% per year. What is Walton's property likely to be worth today based on this rate of appreciation?

    A. $180,000

*   B. $210,000   *$200,000 × 1.05 (5% is used for six months) = $210,000*

    C. $220,000

    D. $222,222

5.   The entity that carries out the nation's monetary policy is called the

    A.   FDIC.

*   B.   Federal Reserve.

    C.   Office of the Comptroller of the Currency.

    D.   U.S. Treasury.

6.   The Bremer property was initially overpriced and sat on the market for an extended period before it sold 15% below the market at $153,000. What should the Bremer property have sold for if it had been not been overpriced?

    A. $130,000

    B. $175,950

*   C. $180,000   *$153,000 / 0.85 = $180,000*

    D. $191,250

7.   A purchaser applied for a 70% mortgage, and the seller agreed to pay 4 points on the mortgage. If the seller paid $5,600 in points, what was the selling price?

    A. $114,286

    B. $140,000

*   C. $200,000   *$5,600 / 0.04 = $140,000 / 0.70 = 200,000*

    D. $238,000

8.   What entity guarantees mortgages?

    A.   Department of Housing and Urban Development (HUD)

    B.   Fannie Mae

    C.   Federal Housing Administration (FHA)

*   D.   Department of Veterans Affairs (VA)

9.   The median price of $5,000 per tillable acre declined 15% in the last year due to an economic downturn. What is the current median price?

*   A. $4,250   *$5,000 × 0.85 = $4,250 current median price*

    B. $4,347

    C. $5,750

    D. $5,882

10.   A property has taxes of $3,200 and a market value of $200,000. What is the effective tax rate?

*   A.   1.6%   *$3,200 / $200,000 = 0.016 (or 1.6% effective tax rate)*

       B.   2.0%

       C.   10.5%

       D.   62.5%

16.1 Problem

Measurement Problems

1. *What kind of polygon is the irregular-shaped lot pictured below, and what is the site's total area **and** perimeter footage?*
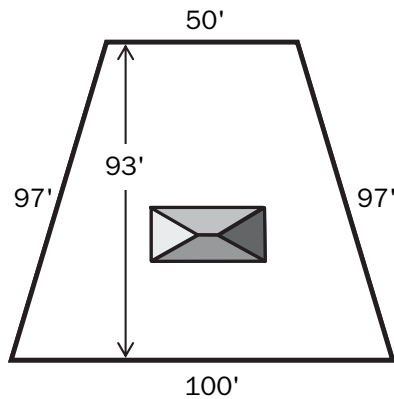
This is a trapezoid with the formula $\frac{1}{2}$ (base$_1$ + base$_2$) × height

$\frac{1}{2}$ (100' + 50') × 93' = 6,975 sq. ft. in area

Perimeter is 100' + 97' + 50' + 97' = 344 linear feet of perimeter

2. Calculate the acreage of Tract A.

TRACT A

2,500 feet
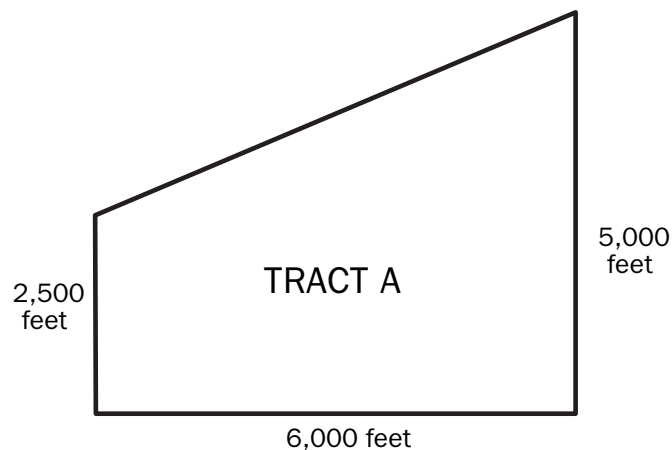
5,000 feet

6,000 feet

Trapezoid area = $\frac{1}{2}$ (2,500 ft. + 5,000 ft.) × 6,000 ft. = 22,500,000 sq. ft.

22,500,000 sq. ft. / 43,560 sq. ft. = 516.5 acres

16.1 Problem, cont.

Measurement Problems – cont.

3. A residential lot has a fenced rear yard. The fence is set back from the property line 2 feet on all sides except for the front property line, which is 70 feet.

   What is the total linear feet of fencing?
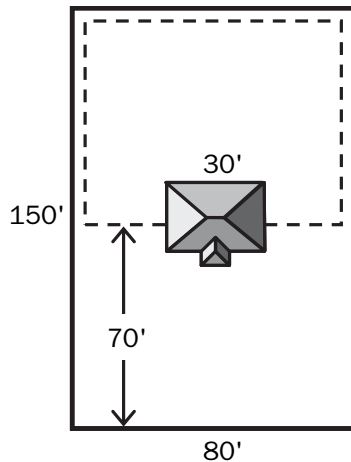
   80' – 4' = 76' in width

   150' – 70' –2' = 78' in length;

   (76' – 30') + 78' + 76' + 78' = 278 feet

   Note: *Lot is 12,000 sq. ft.*

   30'

   150'

   70'

   80'

   If the fencing costs $12.50 per linear foot, what is the total cost of the fence?

   278 feet × $12.50 = $3,475 total cost of the fence

16.1 Problem, cont.

Measurement Problems – cont.

4. The Reynoldses plan to finish their basement area into habitable space. The foundation exterior measures 36 ft. by 26 ft. and has 12-inch thick concrete block perimeter walls. They have ordered carpet and pad to fill the entire **interior** space of the basement plus another 10% in excess to match the carpet pattern.

    If the carpet, pad, and installation cost $20 per square yard, what is the total cost?

36'

34'

26'   24'   Basement Area
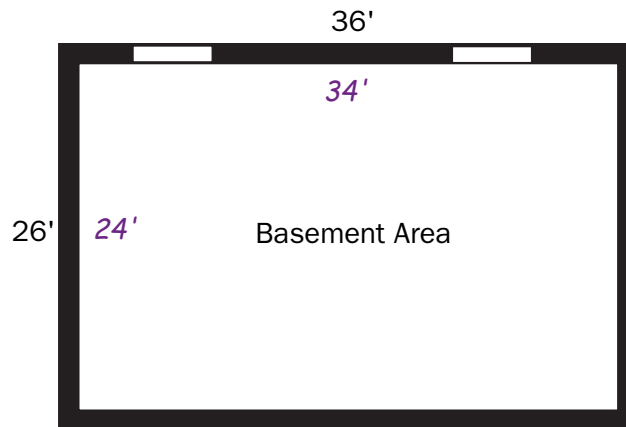
Interior dimensions are 34 ft. × 24 ft. = 816 sq. ft.

Add 10% for excess 816 sq. ft. × 1.10 = 897.6 sq. ft.

897.6 / 9 = 99.73 yards (round to 100 yards) × $20 = $2,000

16.1 Problem, cont.

Measurement Problems – cont.

5. Calculate the size of this residence.
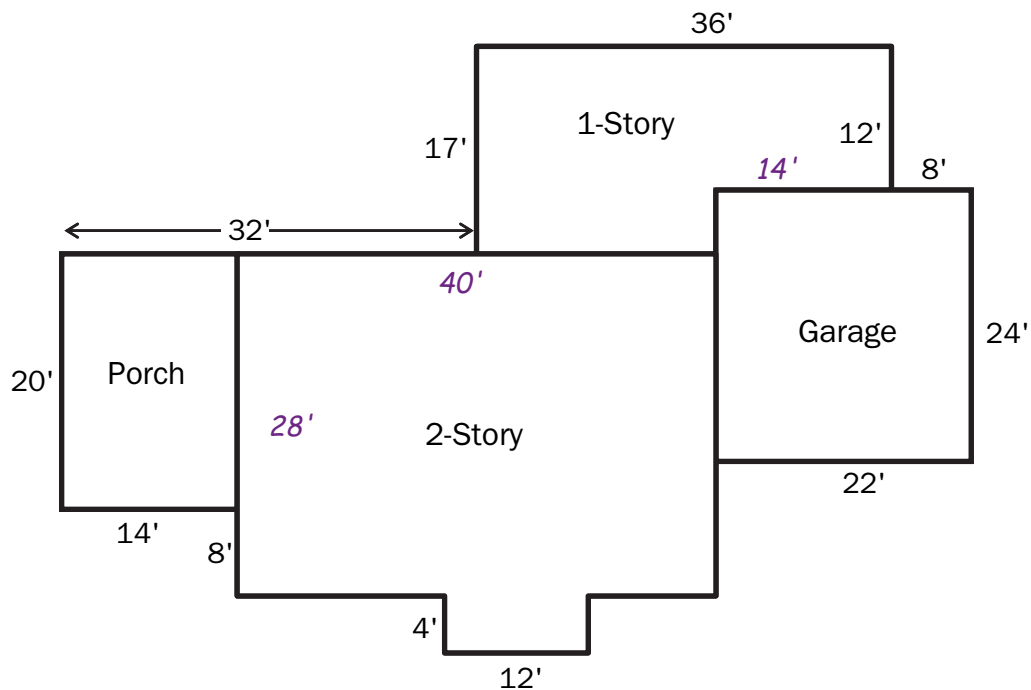
What is the gross living area (GLA) of the residence?

Note: The gross living area does **not** include the porch and garage. The first step is to find the missing dimensions based on the measurements that have been provided in the sketch. Remember to include the area of the second floor in the GLA to account for the 2-story portion of the residence.

40 × 28 × 2 stories = 2,240 sq. ft.

12 × 4 × 2 stories = 96 sq. ft.

14 × 12 × 1 story = 168 sq. ft.

22 × 17 × 1 story = 374 sq. ft.

*2,240 + 96 + 168 + 374 = **2,878 sq. ft.** for GLA is the answer*

II. Statistical Concepts for Appraisers

B. Introductory terms

   1. Data types

      a. **Quantitative data** are numbers that can be measured and compared with a certain degree of objectivity and precision.

      Examples: Building size, acreage, parking spaces, rentable area, building age, proximity to a local attraction, etc.

      b. **Qualitative data** are more subjective and are often represented by words rather than numbers. Qualitative data is still valuable as a source of information, and when correctly ranked or systematically treated, it can significantly improve the appraisal modeling process. Qualitative data can also be quantified in an econometric context.

      Examples: Building style, condition, quality, view amenity, etc.

C. Measures of central tendency

1. **Mean**

    b. If you were asked for the average of the numbers 2, 3, 4, you could easily figure it in your head and say 3. It's not so easy with the following set of numbers.

    What is the average of 17, 83, and 245?

    17 + 83 + 245 = 345 / 3 = 115 is the arithmetic mean

2. **Median**

    c. Here's a data set.

       7, 3, 8, 4, 2

       First array the data.

       2, 3, 4, 7, 8

       Count in 3 variates from either end of the array, and you'll find the median. If there is an odd number of numbers in a data set, the median will always be one of the actual numbers. If there is an even number of numbers, the median may or may not be an actual number in the distribution.

Review Quiz

Answer the questions below.

Questions 1 – 3 are based on the following information:

An appraiser is researching sales of hotels located along a stretch of a busy interstate freeway. The appraiser uncovered the following data:

Property	Sale Price	Rooms	Building Area	Gross Room Revenue
Sale 1	$5,400,000	120	45,000 sq. ft.	$15,000
Sale 2	$4,800,000	100	37,500 sq. ft.	$16,000
Sale 3	$5,460,000	130	50,000 sq. ft.	$14,000
Sale 4	$4,290,000	110	42,000 sq. ft.	$13,000

1. What is the mean sale price?
    A. $3,950,000
    B. $4,800,000
 * C. $4,987,500   *$19,950,000 / 4 = $4,987,500*
    D. $5,000,000

2. What is the range of the gross room revenue?
    A. $1,000
    B. $2,000
 * C. $3,000   *$16,000 − $13,000 = $3,000*
    D. $6,000

3. What is the median size of the hotels' building area?
    A. 42,000 sq. ft.
 * B. 43,500 sq. ft. *Halfway between 42,000 sq. ft. and 45,000 sq. ft.*
    C. 45,000 sq. ft.
    D. 50,000 sq. ft.

4. Calculate the shaded area of the bay window.

    A. 20 sq. ft.

    B. 24 sq. ft.

*   C. 44 sq. ft.

    D. 48 sq. ft.
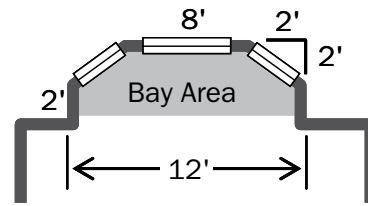
$(12 \times 2) + \frac{1}{2} (8 + 12) 2 = 44$ sq. ft.

I. Getting Started

A. Calculator basics

   1. Understanding the RPN mode of operation for the HP 12C

      b. Use **operation** keys such as $\boxed{\div}$ for division and $\boxed{X}$ for multiply, etc., in place of the "equal sign" key. The HP 12C works very nicely in calculating a series of numbers with multiple functions. Try the operations below.

        $3 \times 21 - 15 / 3 =$ ___*16.00*___

        Keystrokes: $\boxed{3}$ $\boxed{\text{ENTER}}$ $\boxed{2}$ $\boxed{1}$ $\boxed{X}$ $\boxed{1}$ $\boxed{5}$ $\boxed{-}$ $\boxed{3}$ $\boxed{\div}$

17.1 Problem

Calculation of Mortgage Problems

1. Calculation of an annual mortgage payment

    The Mansfield consulting firm has a mortgage with a beginning balance of $850,000 and an annual interest rate of 9% on its building. The term is 25 years, but the firm makes only one payment each year.

    Calculate the payment.

    Instructions: Identify the financial variables of the problem and what is to be solved. As you work out the calculations, use the sleeve of your HP 12C (or a piece of paper) to cover the calculator keystrokes so that only the "explanation" is visible until the problem has been solved.

N	*25*	I	*9*	PV	*$850,000*	PMT	*?*	FV	*- 0 -*

Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	Number of periods	25 n	25.00
3	Interest rate	9 i	9.00
4	Present value of mortgage	850000 CHS PV	−850,000.00
5	Calculates payment	PMT	*86,535.31*

Note: Set your calculator to display 2 decimal points. The payment amount in this problem is a positive number, because we're looking at it from the lender's perspective. If we took it from Mansfield's perspective, the payment would be negative (because the cash flow would be going out).

17.1 Problem, cont.

Calculation of Mortgage Problems – cont.

2. Calculation of a *monthly* mortgage payment

   Note: In this mortgage calculation, we will be using the [g] key to convert the number of periods and annual interest to monthly compounding. For the present time, our use of the [g] key will be limited to that function.

   Brookes is obtaining a 30-year mortgage on her newly constructed residence. The interest rate of 6.5% and the loan will be set up with monthly payments.

   If the mortgage amount is $225,000, what is the monthly payment?

   [N] *30* [I] *6.50* [PV] *$225,000* [PMT] *?* [FV] *- 0 -*

Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	[f] [REG]	0.00
2	Number of periods	30 [g] [n]	360.00
3	Interest rate	6.5 [g] [i]	0.54
4	Present value of mortgage	225000 [CHS] [PV]	−225,000.00
5	Calculates payment	[PMT]	*1,422.15*

Work out the next problem by calculating the *monthly* mortgage payment

Cohen has a 20-year mortgage set up with monthly payments and an interest rate of 9.75%.

If the mortgage face amount is $136,500, what is the monthly payment?

[N] *20* [I] *9.75* [PV] *$136,500* [PMT] *?* [FV] *- 0 -*

Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	[f] [REG]	0.00
2	Number of periods	20 [g] [n]	240.00
3	Interest rate	9.75 [g] [i]	0.81
4	Present value of mortgage	136500 [CHS] [PV]	−136,500.00
5	Calculates payment	[PMT]	*1,294.73*

17.1 Problem, cont.

Calculation of Mortgage Problems – cont.

3. Calculation of a mortgage term

   Let's use Cohen's $136,500 mortgage from the previous example, but change the interest rate to 6.25%.

   If the monthly payment is $1,170.38, calculate the term of the mortgage (in years).

   N   **?**   I   **6.25**   PV   **$136,500**   PMT   **$1,170.38**   FV   **- 0 -**

Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	Interest rate	6.25 g i	0.52
3	Present value of mortgage	136500 CHS PV	−136,500.00
4	Monthly payment	1170.38 PMT	1,170.38
5	Calculates # of payments	n	180.00
6	Divides payments by 12 months	12 ÷	*15.00*

Note: If you do not enter the change sign for Step 3, there will be an error.

How long would it take Cohen to pay off the mortgage if $100 were added to each monthly payment?

N   **?**   I   **6.25**   PV   **$136,500**   PMT   **$1,270.38**   FV   **- 0 -**

Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	Interest rate	6.25 g i	0.52
3	Present value of mortgage	136500 CHS PV	−136,500.00
4	Monthly payment	*1270.38*	*1,270.38*
5	Calculates # of payments	n	*158.00*
6	Divides payments by 12 months	12 ÷	*13.17*

Basic Appraisal Principles

17.1 Problem, cont.

Calculation of Mortgage Problems – cont.

4. Calculation of remaining mortgage balance

    You can find the remaining balance due on a loan at any time during the amortization schedule using the financial keys. The individual might need to know the remaining balance for early payoff of a fully amortized loan or a scheduled balloon.

    Let's say we have a loan of $278,000, paid monthly for 23 years at 10.25% interest. Find the remaining balance after 7 years.

    | N | 23 | I | 10.25 | PV | $278,000 | PMT | ? | FV | ? |

Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	# of periods	23 g n	276.00
3	Interest rate	10.25 g i	0.85
4	Present value of mortgage	278000 CHS PV	−278,000.00
5	Monthly payment	PMT	*2,625.62*
6	Number of periods expired	7 g n	84.00
7	Remaining balance	FV	*247,345.08*

Note: Once you have the answer for Step 7, do *not* clear the register.

17.1 Problem, cont.

Calculation of Mortgage Problems – cont.

5. Calculating the percentage paid off

   Keep the remaining balance (Step 7) from the last calculation in the display of your calculator. Let's subtract the remaining balance from the original loan of $278,000, and then take the result and divide it by the base of $278,000 to see the percentage amount that has been paid off.

   Calculations

Step	Explanation	HP 12C	Display
1	Subtract original loan amount	[CHS] 278000 [+]	30,654.92
2	Divide by loan	278000	278,000
3	Calculate percent paid off	[÷]	*0.11*

   Note: The above calculation is simply taking the amount paid off ($30,654.92) and dividing that by the original loan amount ($30,654.92 / $278,000). Now change the display to show the answer with decimals to 9 places. If you calculated this as a stand-alone problem (rather than retaining the numbers from no. 4), the answer would have a slight difference (0.000000014).

   Note: For additional calculations using the HP 12C, see the Appendix.

Basic Appraisal Principles

Review Quiz

Read the information about Romero's mortgage, and answer the questions that follow.

Romero has been approved for a $350,000 adjustable rate mortgage with interest set at 6.5% and monthly payments set up over the 30-year term of the loan.

N   *30*   I   *6.5*   PV *$350,000* PMT   *?*   FV   *-?*

1. What is Romero's monthly payment?

   HP 12C: 30 g n → *6.5* g i → *350,000* CHS PV → PMT →

   $2,212.24 payment

2. Using the payment calculated from Question #1, what will be the balance at the end of the 6th year?

   HP 12C: 6 g n FV →*$322,228.79 remaining balance*

   or →*30* g n *6.5* g i *350,000* CHS PV PMT → *6* g n FV

3. What is the percentage paid off after six years?

   HP 12C: With the remaining balance of $322,228.79 in the display, enter

   350,000 − CHS → *350,000* ÷ → *0.079346 (or about 8%)*

   Note: The Δ% *key can also be used (350,000* ENTER *$322,228.62* Δ%*)*

4. Romero originally wanted a shorter loan term, but the payments would be $2,609.51, and that was too high for Romero. What was the loan term based on that payment?

   HP 12C: 6.5 g i → *350,000* PV → *2,609.51* CHS PMT n

   (240 will be in the display after entering "n") 12 ÷ → *20 years*

Review Quiz Answers (HP 12C Calculations)

| N | 30 | I | 6.5 | PV | $350,000 | PMT | ? | FV | ? |

1. $2,212.24 payment

Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	# of periods	30 g n	360.00
3	Interest rate	6.5 g i	0.54
4	Present value of mortgage	350000 CHS PV	−350,000.00
5	Monthly payment	PMT	2,212.24

2. $322,228.79 remaining balance

Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	# of periods	30 g n	360.00
3	Interest rate	6.5 g i	0.54
4	Present value of mortgage	350000 CHS PV	−350,000.00
5	Calculate monthly payment	PMT	2,212.24
6	Number of periods expired	6 g n	72.00
7	Remaining balance	FV	322,228.79

3. 0.079346 (or about 8% when rounded to two decimals)

Note: The $\boxed{\Delta\%}$ key can also be used ($350,000 $\boxed{\text{ENTER}}$ $322,228.79 $\boxed{\Delta\%}$) to derive the answer because this is a percent change problem.

Calculations

Step	Explanation	HP 12C	Display
0	Keep balance from question 2		322,228.79
1	Subtract original loan amount	350000 $\boxed{-}$ $\boxed{\text{CHS}}$	27,771.38
2	Enter loan amount	350000	350,000
3	Calculate percent paid off	$\boxed{\div}$	0.08

Now change the display to show the answer with decimals to 9 places.

4. 20 years

Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	$\boxed{f}$ $\boxed{\text{REG}}$	0.00
2	Interest rate	6.5 $\boxed{g}$ $\boxed{i}$	0.54
3	Present value of mortgage	350000 $\boxed{\text{PV}}$	350,000.00
4	Monthly payment	2609.51 $\boxed{\text{CHS}}$ $\boxed{\text{PMT}}$	−2,609.51
5	Calculates # of payments	$\boxed{n}$	240.00
6	Divides payments by 12 months	12 $\boxed{\div}$	20.00

Review Quiz Challenge Question

5. If the interest rate were adjusted after six years to 8%, what would the new payment be in the 7th year?

Hint: Use the remaining balance from Question #2 to calculate the new payment.

Solution to the above question is on the next page.

Answer to the Challenge Question

5. $2,520.00 payment

Note: The above payment is approximate because the balance of $322,228.79 entered in step #4 (below) was rounded to the nearest dollar and cents. The actual payment figure is $2,520.003501.

Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	Number of periods	24 g n	288.00
3	Interest rate	8 g i	0.67
4	Present value of mortgage	322228.79 CHS PV	−322,228.79
5	Calculate payment	PMT	2,520.00

I. Understanding Cash Flow

A. The first step in solving a real estate investment problem is to know where the money is going.

1. Cash flow (CF) diagrams tell us where the money flows over time.

   If you were to diagram your savings account over the last year, there might be a series of financial events.
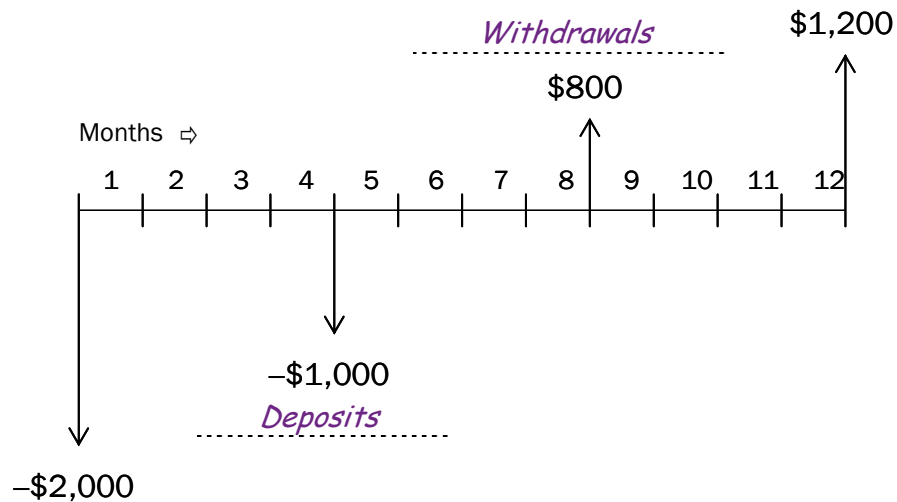
B. Simple and compound interest

1. Simple interest

    a. Jeff and Tina loaned $4,000 to their daughter so she could buy a used car to go to and from the college campus. The parents arranged for their daughter to repay the $4,000 after 4 years plus simple annual interest of 6% to be paid each year. How much will they receive in total when the loan is repaid?

    $4,000 × 0.06 × 4 = $960 interest + $4,000 = $4,960

    Remember the $4,000 is not returned until the 4th year.

    Amortization is not used in this example.

3. **Compound interest effects.** If you placed $1,000 into an investment earning 6% annual interest for 1 year, it would earn $60 of simple interest. Let's contrast that with the effects of compounding.

   Note: Clear your financial registers before performing financial calculations.

   Interest—compounding annually

HP 12 C ⇨ $1,000 [CHS] [PV] ⇨ 6 [i] 1 [n] ⇨ [FV] ⇨	*$1,060.00*

   Note: Compounding annually over one period is the same as simple interest.

   Interest—compounding quarterly

HP 12 C ⇨ $1,000 [CHS] [PV] ⇨ 6 [ENTER] 4 [÷] [i] ⇨ 1 [ENTER] 4 [X] [n] ⇨ [FV] ⇨	*$1,061.36*

   Interest—compounding monthly

HP 12 C ⇨ $1,000 [CHS] [PV] ⇨ 6 [g] [i] 1 [g] [n] ⇨ [FV] ⇨	*$1,061.68*

4. There are three different types of interest rates that we refer to in financial problems.

   d. What are the **effective rates** for the scenarios we just examined?

   - Nominal interest rate   *6.00%*

   - Interest compound annually   *6.00%*   *$60.00 / $1,000*

   - Interest compound quarterly   *6.14%*   *$61.36 / $1,000*

   - Interest compound monthly   *6.17%*   *$61.68 / $1,000*

   A monthly periodic rate of 0.5% = a nominal rate of 6%

II. Time Value of Money

C. Time value components

1. Future of $1

   a. What will an investment of $12,000 grow to if it earns 6% annually over 15 years?

N	15	I	6	PV	$12,000	PMT	- 0 -	FV	?

   Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	# of periods	15 n	15.00
3	Interest rate	6 i	6.00
4	Present value of deposit	12000 CHS PV	−12,000.00
5	Asks for future value	FV	28,758.70

   b. **Practice problem.** What will $5,000 grow to if it earns 5.25% annually over 7 years?

N	7	I	5.25	PV	$5,000	PMT	- 0 -	FV	?

   Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	# of periods	7 n	7.00
3	Interest rate	5.25 i	5.25
4	Present value of deposit	5000 CHS PV	−5,000.00
5	Asks for future value	FV	7,153.60

2. Future of $1 per period

   a. What will an investment of $5,000 per year grow to in 6 years at 6% annual interest?

   | N | 6 | I | 6 | PV | - 0 - | PMT | $5,000 | FV | ? |

   Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	# of periods	6 n	6.00
3	Interest rate	6 i	6.00
4	Payment	5000 CHS PMT	−5,000.00
5	Asks for future value	FV	34,876.59

   b. **Practice problem.** If Sullivan places $3,000 each year in her Roth IRA, what will it grow to in 15 years at 8% annual interest?

   | N | 15 | I | 8 | PV | - 0 - | PMT | $3,000 | FV | ? |

   Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	# of periods	15 n	15.00
3	Interest rate	8 i	8.00
4	Payment	3000 CHS PMT	−3,000.00
5	Asks for future value	FV	81,456.34

3. Sinking fund factor

a. What amount must be deposited annually in an investment earning 6% so that you will have $25,000 in 10 years?

| N | *10* | I | *6* | PV | *- 0 -* | PMT | *?* | FV | *$25,000* |

Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	# of periods	10 n	10.00
3	Interest rate	6 i	6.00
4	Enter future value	25000 CHS FV	–25,000.00
	Safety step to assure 0 in PV	0 PV	0.00
5	Required annual deposit	PMT	*1,896.70*

b. **Practice problem.** Acme Hardware plans to resurface the parking lot in 7 years. What amount must be set aside annually to accumulate the $60,000 cost of resurfacing if 5% annual interest is used?

| N | *7* | I | *5* | PV | *- 0 -* | PMT | *?* | FV | *$60,000* |

Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	# of periods	7 n	7.00
3	Interest rate	5 i	5.00
4	Enter future value	60000 CHS FV	–60,000.00
	Safety step to assure 0 in PV	0 PV	0.00
5	Required annual deposit	PMT	*7,369.19*

4. Present value of $1

   a. What should an investor pay for the right to receive $10,000 in 11 years at 6%?

   | N | 11 | I | 6 | PV | ? | PMT | - 0 - | FV | $10,000 |

   Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	# of periods	11 n	11.00
3	Discount rate	6 i	6.00
4	Enter future value	10000 CHS FV	−10,000.00
	Safety step to assure 0 in PMT	0 PMT	0.00
5	Calculates present value	PV	5,267.88

   b. **Practice problem.** The reversion value of a commercial property three years from now is estimated to be $900,000. What is the present value of the property if the discount rate is 9 percent?

   | N | 3 | I | 9 | PV | ? | PMT | - 0 - | FV | $900,000 |

   Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	# of periods	3 n	3.00
3	Discount rate	9 i	9.00
4	Enter future value	900000 CHS FV	−900,000.00
	Safety step to assure 0 in PMT	0 PMT	0.00
5	Calculates present value	PV	694,965.13

5. Present value of $1 per period

a. What might an investor pay to receive an income stream of $120,000 per year for 18 years if the investor wanted a 6% yield?

| N | 18 | I | 6 | PV | ? | PMT | $120,000 | FV | - 0 - |

Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	# of periods	18 n	18.00
3	Desired yield	6 i	6.00
4	Enter income PMT	120000 CHS PMT	−120,000.00
	Safety step	0 FV	0.00
5	Calculates present value	PV	1,299,312.42

b. **Practice problem.** Willis is analyzing an investment that will pay $20,000 per year over a period of 8 years. If Willis wants to yield 8%, what might he pay for this investment?

| N | 8 | I | 8 | PV | ? | PMT | $20,000 | FV | - 0 - |

Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	# of periods	8 n	8.00
3	Desired yield	8 i	8.00
4	Enter income PMT	20000 CHS PMT	−20,000.00
	Safety step	0 FV	0.00
5	Calculates present value	PV	114,932,78

6. Installment to amortize $1

   a. Smith loaned $65,000 to his business partner for a 5-year term at 6% annual interest and with annual payments. What is the payment amount?

   N   *5*   I   *6*   PV   *$65,000*   PMT   *?*   FV   *- 0 -*

   Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	# of periods	5 n	5.00
3	Interest rate	6 i	6.00
4	Enter PV	65000 CHS PV	–65,000.00
	Safety step to assure 0 in FV	0 FV	0.00
5	Required annual payment	PMT	*15,430.77*

   b. **Practice problem.** Matthews negotiated a refinance with her bank for a $285,000 mortgage based on a 5.75% rate and a 25-year term. What is the monthly payment for this mortgage?

   N   *25*   I   *5.75*   PV   *$285,000*   PMT   *?*   FV   *- 0 -*

   Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	# of periods	25 g n	300.00
3	Interest rate	5.75 g i	0.48
4	Enter PV	285000 CHS PV	–285,000.00
	Safety step to assure 0 in FV	0 FV	0.00
5	Monthly payment	PMT	*1,792.95*

18.1 Problem

Using Financial Tables to Solve Problems

Instructions. Use the financial table on the prior page to solve the same six questions that you previously worked out with your financial calculator. The questions are reprinted below, and all are based on 6% (compound) annual interest.

1. *What will an investment of $12,000 grow to if it earns 6% annually over 15 years?*

   $12,000 × 2.396558 (Column 1) = $28,758.70

2. *What will an investment of $5,000 per year grow to in 6 years at 6% annual interest?*

   $5,000 × 6.975319 (Column 2) = $34,876.59

3. *What amount must be deposited annually in an investment earning 6% so that you will have $25,000 in 10 years?*

   $25,000 × 0.075868 (Column 3) = $1,896.70

4. *What should an investor pay for the right to receive $10,000 in 11 years at 6%?*

   $10,000 × 0.526788 (Column 4) = $5,267.88

5. *What might an investor pay to receive an income stream of $120,000 per year for 18 years at 6% annual interest?*

   $120,000 x 10.827603 (Column 5) = $1,299,312.36

6. Smith loaned $65,000 to his business partner for a 5-year term at 6% annual interest and with annual payments. *What is the payment amount?*

   $65,000 × 0.237396 (Column 6) = $15,430.74

Note: For Questions 5 and 6 above, the answers will be different by a few cents from answers derived from a financial calculator. This is because the financial table is limited to 6 decimal places to the right of zero.
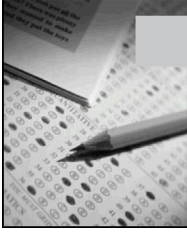
This multiple-choice test is for your benefit and provides a review of everything covered in Section 6. This is a "closed book" test. Choose the *most* correct answer.

1.   Kramer put $12,000 into an investment on August 10th and took out $3,000 on September 31st. How should the cash flows be recorded (that is, money direction)?

    A.   +$12,000 and –$3,000

    B.   +$12,000 and –$9,000

*   C.   –$12,000 and +$3,000

    D.   –$12,000 and –$3,000

2.   What does RPN represent?

    A.   rational positive numbers

    B.   really powerful numbers

    C.   return on net principal

*   D.   Reverse Polish notation

3.   Which of the following terms is commonly referred to as an average?

    A.   array

*   B.   mean

    C.   median

    D.   mode

4.   Wheatley is considering a mortgage with a face amount of $195,000 and is debating whether to get the 30-year mortgage at 6% or the 20-year mortgage at 5.5%. What is the difference between the two monthly payments?

    A. $61.93

*   B. $172.26

    C. $227.92

    D. $2,150.93

5.	Peterson began saving $10 per week and deposited it every month in her money market account, earning 4.25% and compounding monthly. If she continues this practice, how much will she have after 10 years?

	A.	$5,968.29

	B.	$6,289.15

	C.	$6,316.04

*	D.	$6,465.65

6.	What amount must be deposited annually in an account earning 7.5% interest that compounds annually to accumulate $100,000 in 15 years?

	A.	$302.01

*	B.	$3,828.72

	C.	$3,979.46

	D.	$7,068.59

7.	What should Greenberg pay for the right to receive $60,000 in 7 years at 10% interest compounded quarterly?

	A.	$29,976.06

	B.	$29,991.67

*	C.	$30,052.67

	D.	$30,789.49

8.	A simple measure of dispersion of the difference between the highest and lowest value in a data set is known as the

	A.	mean.

*	B.	range.

	C.	standard deviation.

	D.	variate.

9.	An annuity functions in a similar manner to what time value component?

	A.	future of $1

*	B.	future of $1 per period

	C.	present value of $1 per period

	D.	sinking fund factor

Practice Test Answers for Section 6
HP 12C Calculations for Questions 4 – 7

4. B. $172.26 (Difference of $1,169.12 and $1,341.38)

Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	Number of periods	30 g n	360.00
3	Interest rate	6 g i	0.50
4	Present value of mortgage	195000 CHS PV	−195,000.00
5	Calculate payment	PMT	1,169.12

Calculations for 20-year mortgage

Step	Explanation	HP 12C	Display
1	Clear memory	f REG	0.00
2	Number of periods	20 g n	240.00
3	Interest rate	5.5 g i	0.46
4	Present value of mortgage	195000 CHS PV	−195,000.00
5	Calculate payment	PMT	1,341.38

5. D. $6,465.65

Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	☐f ☐REG	0.00
2	Convert weekly to annual	10 ☐ENTER 52 ☐X	520.00
3	Convert to monthly deposit	12 ☐÷ ☐CHS ☐PMT	−43.33
4	Number of periods	10 ☐g ☐n	120.00
5	Interest rate	4.25 ☐g ☐i	0.35
6	Future value	☐FV	6,465.65

6. B. $3,828.72

Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	☐f ☐REG	0.00
2	Number of periods	15 ☐n	15.00
3	Interest rate	7.5 ☐i	7.50
4	Future value to accumulate	100000 ☐CHS ☐FV	−100,000.00
5	Calculate required payment	☐PMT	3,828.72

7. C. $30,052.67

Calculations

Step	Explanation	HP 12C	Display
1	Clear memory	☐f ☐REG	0.00
2	Future value	60000 ☐CHS ☐FV	−60,000.00
3	Number of quarterly periods	7 ☐ENTER 4 ☐X ☐n	28.00
	Quarterly interest	10 ☐ENTER 4 ☐÷ ☐i	2.50
4	Present value	☐PV	30,052.67

II. Characteristics of Market Areas

A. Geographical boundaries

   3. Boundaries may be established by physical attributes or changes in use.

      a. Physical attributes and landmarks

         ▪ Natural features

Rivers, wetlands, lakes, canyons, elevated areas, forests

         ▪ Man-made features

Freeways, railroads (and light rail transit), power lines, subdivisions

C. The **life cycle of the subject neighborhood** helps to define the characteristics of the market area.

1. _____*Growth*_____ A life cycle stage *in which the neighborhood gains public favor and acceptance.*

2. _____*Stability*_____ A life cycle stage *in which the neighborhood experiences equilibrium without marked gains or losses.*

3. _____*Decline*_____ A life cycle stage *of diminishing demand in a neighborhood.*

4. _____*Revitalization*_____ A life cycle stage *characterized by renewal, modernization, and increasing demand.*

19.1 Discussion Question. **Market Area Description**

An abandoned and boarded-up property is located next to the subject property you are appraising in a market of 40 residences. You find that another vacant property is located a block away.

How should you report this?

Clients (such as HUD) can be sensitive about this issue. Talk about cause and effect relationships in market observations.

Suggestion: *"There are 40 residential properties in the defined market area of which 5% are vacant. This is typical of competing areas and is accepted in the marketplace."*

Review Quiz

Write a number on the line opposite each item below to indicate whether the item is best described as

1. One-unit residential districts
2. Multifamily districts
3. Central business districts
4. Retail districts
5. Office districts
6. Industrial districts
7. Agricultural districts

8. Specialty districts
9. Historic districts
10. Growth
11. Stability
12. Decline
13. Revitalization
14. Gentrification

_4_   Regional shopping center

_3_   Downtown business area

_1_   A cluster of condominium projects

_4_   A mix of big box stores, fast-food restaurants, and a car dealership

_1_   Vintage, one-unit residential homes

_7_   Grain elevator, corn fields, low density, distant linkage

_6_   Acme Fluid Power, Advanced Metal Etching, Jimson Anodizing

_13_ City organized effort to invigorate a declining retail district

_2_   Duplexes and apartments

_10_ Open land transitioning to new residential developments

_12_ A stage where vacant and abandoned industrial buildings are observed

_8_   Medical research center, hospital, physician's office center

I. Valuation Services and Appraisal Practice

B. Appraisal practice

1. Appraisal practice is a property service "performed by an individual acting as an appraiser" (USPAP, DEFINITIONS), including the following:

c. Other services while acting an appraiser, which may include

- Providing sales data

- Trend analysis

- Zoning study

- Assessment study

- Teaching an appraisal course

These services cannot have a valuation component; otherwise, they would fall under appraisal or appraisal review.

20.1 Discussion Question. **In the Real World**

Brokerage Services

Janssen, a real estate broker who is also an appraiser, has been retained to list and sell a property. As part of her brokerage services, Janssen provides a competitive market analysis (CMA) to determine the asking price of a property listing.
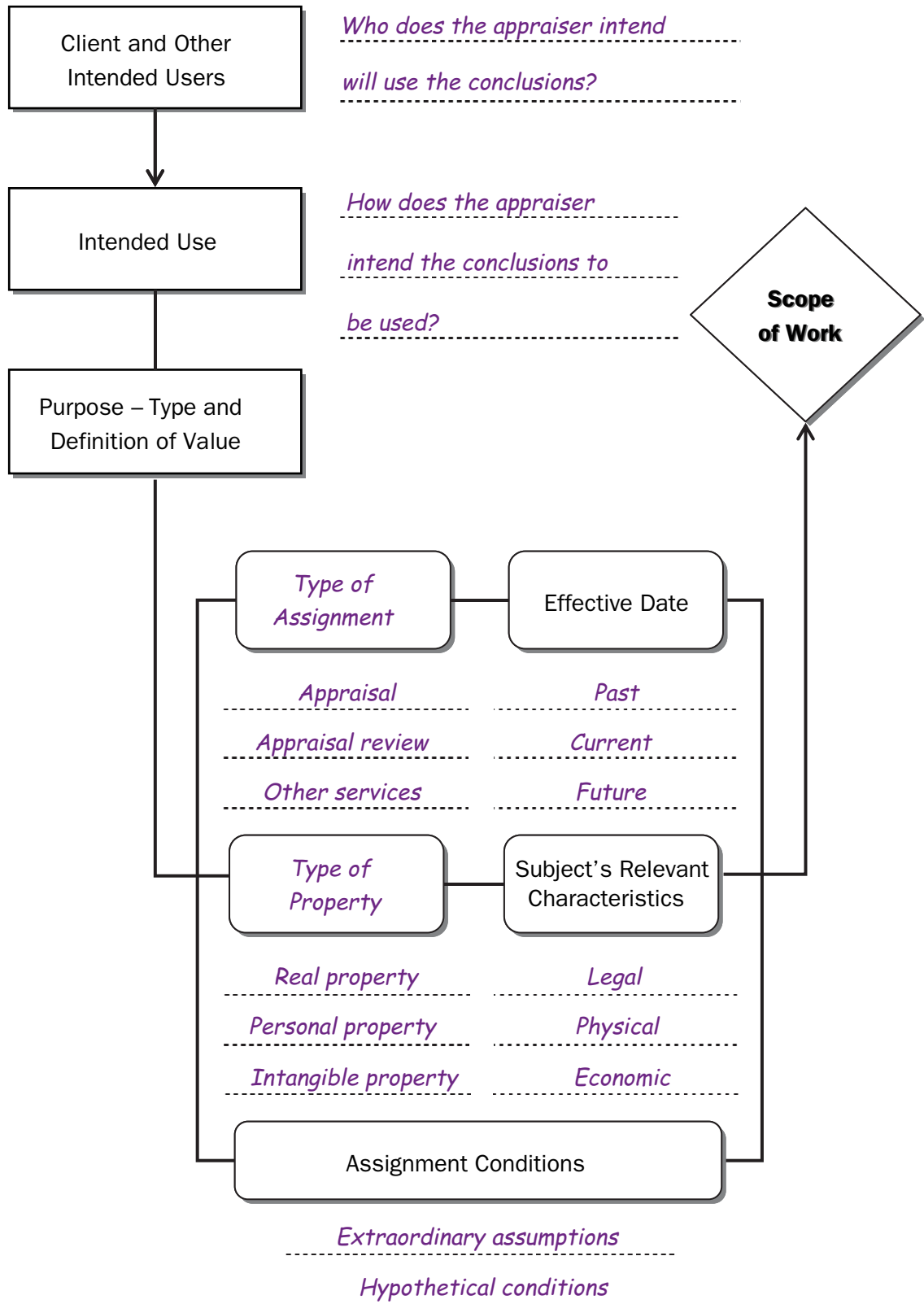
Is the CMA service she provides her client considered appraisal practice?

If Janssen is acting as an appraiser, her service is appraisal practice. If she is acting as a broker, it isn't appraisal practice. Janssen needs to be clear about her role and state it clearly to her client, "I'm not acting as an appraiser in providing this service. Instead, I'm acting as a broker."

II. Scope of Work

The Scope of Work Decision Process in Appraisal Practice
Source: Flowchart adapted from content published by The Appraisal Foundation

```
┌─────────────────────┐      Who does the appraiser intend
│  Client and Other   │      - - - - - - - - - - - - - - - - - -
│  Intended Users     │      will use the conclusions?
└─────────────────────┘      - - - - - - - - - - - - - - - - - -
          │
          ▼
┌─────────────────────┐      How does the appraiser
│   Intended Use      │      - - - - - - - - - - - - - - - - - -         ◇
└─────────────────────┘      intend the conclusions to                Scope
          │                  - - - - - - - - - - - - - - - - - -      of Work
          │                  be used?                                    ◇
          │                  - - - - - - - - - - - - - - - - - -
┌─────────────────────┐
│  Purpose – Type and │
│  Definition of Value│
└─────────────────────┘
```

Type of Assignment	Effective Date
Appraisal	Past
Appraisal review	Current
Other services	Future

Type of Property	Subject's Relevant Characteristics
Real property	Legal
Personal property	Physical
Intangible property	Economic

Assignment Conditions

Extraordinary assumptions

Hypothetical conditions

Review Quiz

Fill in the answers to the following questions.

1. Appraisal practice is a subset of _____*valuation services*_____ .

2. An individual performing a valuation service while acting in the role of an appraiser falls under the category of _____*appraisal practice*_____ .

3. The act or process of developing an opinion about the quality of another's work is called _____*appraisal review*_____ .

4. When a value type is defined in the scope of work, such as an opinion of market value in a real property assignment, this is also referred to as the _____*purpose*_____ of the assignment.

5. If the _____*scope of work*_____ decision is flawed, there is a strong chance the assignment results will be misleading.

Check the appropriate box for each question.	TRUE	FALSE
6. An appraisal is the process of developing an opinion of value.	☒	☐
7. A prospective value has an effective date in the past.	☐	☒
8. The party the appraiser identifies by name or type as a user of the appraisal report is an intended user.	☒	☐
9. An appraiser teaching an appraisal course is performing appraisal practice.	☒	☐
10. A broker's competitive market analysis if performed by an appraiser is always exempt from being classified as appraisal practice.	☐	☒

21.1 Problem

Determining Scope of Work

A financial institution has asked you to appraise a one-unit residence so the borrower can finance the purchase of the property. The lender wants the appraisal completed on a form report typically used by Fannie Mae and Freddie Mac.

1. *Who is the client, and who are the intended users?*

   The lender is the client and intended user.

2. *What is the intended use?*

   To assist the financial institution in making a lending decision

3. *What is the type and definition of value and its source (that is, what is the purpose)?*

   An opinion of market value as defined in lending regulations

4. *What is the assignment type?*

   Appraisal

5. *What type of property is the subject property?*

   Real property

6. *What is the effective date?*

   Current date

21.1 Problem, cont.

Determining Scope of Work – cont.

7. *What is the subject of the assignment and what method (approach) to value is most relevant?*

   One-unit residence in fee simple interest. The sales comparison approach is the most relevant method of analysis.

8. *What are the assignment conditions?*

   None. The value is current and based on market trends within a reasonable market exposure time.

9. *What does the problem identification process tell you about determining your scope of work for this assignment?*

   The appraiser's scope of work would address

   - *The degree the appraiser needs to identify the subject property;*

   - *The degree the appraiser observes the physical property;*

   - *The type and extent of data investigated; and*

   - *The type and extent of analytical processes applied to form opinions or conclusions*

21.2 Problem

Scope of Work for Multitenant Office Building

A bank has contacted you to appraise a proposed LEED Silver multitenant office building that will be completed in 12 months. The bank wants three values—one current in the property's current condition, one at the future completion date, and the other at stabilized occupancy. The bank is a regulated institution, and the loan is a federally-related transaction.
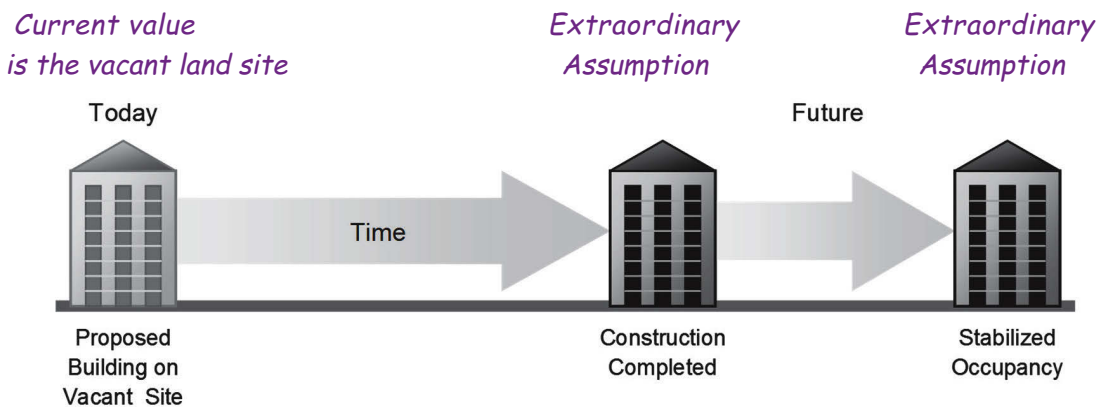
1. *Who is the client, and who are the intended users?*

    The client is the bank, and intended users are other parties identified by the appraiser based on communication with the client.

2. *What is the intended use?*

    To assist the lender in making a lending decision in a federally-related transaction.

3. *What is the type and definition of value and its source (that is, what is the purpose)?*

    An opinion of market value as defined in lending regulations

4. *What is the assignment type?*

    Appraisal

21.2 Problem, cont.

Scope of Work for Multitenant Office Building – cont.

5. *What type of property is the subject property?*

   Real property (versus personal property or intangible property)

6. *What is the effective date?*

   A federally-related transaction requires a current value based on the current condition of the property. In this case, that would be the value of the vacant site. The bank also wants prospective values when completed and at stabilized occupancy. Thus, more than one effective date is required.

7. *What is the subject of the assignment and what method (approach) to value is most relevant?*

   Income-producing characteristics of this multitenant office building would make the income capitalization approach the primary approach for valuing this building, but the sales comparison and cost approaches might also be applicable methods of analyzing value, depending on data availability. The LEED Silver certification indicates the buildings will have energy-efficient and green features that may command higher-quality tenants, higher rents, and possibly lower vacancy rates.

21.2 Problem, cont.

Scope of Work for Multitenant Office Building – cont.

8. *What are the assignment conditions?*

    The prospective values would be based on an extraordinary assumption.

    The current value would have no special conditions. If the bank wanted a

    current value "as if complete, with a minimum LEED Silver certification,"

    that would be a hypothetical condition. It is important to make the LEED

    rating part of the "as complete." Developers often raise or lower

    the green rating based on the circumstances that arise during

    construction. The appraiser should require a copy of the rating

    worksheet showing the categories rated and points achieved in each

    category. This will assist the appraiser in understanding the green

    and energy-efficient features that may materially affect the income

    and expenses of the property.

9. *What does the problem identification process tell you about determining your scope of work for this assignment?*

    Discuss the four issues addressed in the first problem.

    - *The degree the appraiser needs to identify the subject property;*

    - *The degree the appraiser observes the physical property;*

    - *The type and extent of data investigated; and*

    - *The type and extent of analytical processes applied to form opinions or conclusions*

21.3 Problem

Scope of Work for a Land Acquisition

A county attorney has contacted you regarding 100 acres of farmland used for growing corn that will be bisected with a proposed county road. The attorney wants to know the amount that should be offered to the property owner for the land the county is taking. The land is designated for future residential development, and its proximity to new developments suggests the current use will change in five years if not sooner.

Work through the problem identification process and lay out your scope of work.

1. *Client and intended user is the county.*

2. *Intended use is to assist the county in establishing a reasonable offering price.*

3. *The purpose is an opinion of market value (as defined in the appraisal report, the source is from the jurisdiction taking the property) of the property before and after the acquisition of the land for the roadway.*

4. *Appraisal is the assignment type.*

5. *The subject property is real property.*

6. *Effective date is the date of taking as established by the county.*

7. *Relevant characteristics—agricultural farmland with likely change in use suggests development of the sales comparison approach.*

8. *Assignment conditions include a current value of the property before the county road is constructed and an "after" value based on a hypothetical condition that assumes the new county road is in place on the same date.*

21.3 Problem, cont.

Scope of Work for a Land Acquisition – cont.

The appraiser should also consider the following in the scope of

work decision:

- *The degree the appraiser needs to identify the subject property;*

- *The degree the appraiser observes the physical property;*

- *The type and extent of data investigated; and*

- *The type and extent of analytical processes applied to form opinions*

  or conclusions
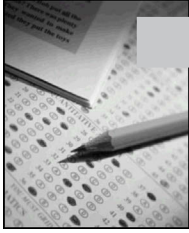
This multiple-choice test is for your benefit and provides a review of everything covered in Section 7. This is a "closed book" test. Choose the *most* correct answer.

1.   A group of complementary land uses defines a

    A.   community.

    B.   district.

    C.   market area.

*   D.   neighborhood.

2.   A fully developed neighborhood continues to experience good demand and a modest rise in property values. How would you classify the life cycle period of this area?

    A.   decline

    B.   growth

    C.   revitalization

*   D.   stability

3.   Appraiser Mills described the market area as a blue-collar area with good pride of ownership in the area residences. This is an example of

    A.   conformity.

    B.   homogeneity.

    C.   lessor interest.

*   D.   stereotyping.

4.   A district has a research center, high-tech companies, and a university. This describes what kind of district?

    A.   commercial

    B.   industrial

    C.   office

*   D.   specialty

5. In a scope of work decision, an opinion of market value and its definition are the elements that are also known as

    A. intended use.

    B. objective.

    C. opinion type.

*   D. purpose.

6. Partners Bank had questions about an appraisal, so it decided to get a second opinion from another independent appraiser. What is this second assignment called?

*   A. appraisal

    B. appraisal review

    C. broker's price opinion

    D. real property consulting

7. Rivers, forested areas, and marshlands are examples of natural features that define what type of boundaries within a market area?

    A. economic

*   B. geographic

    C. legal

    D. social

8. The area surrounding Independence Hall in Philadelphia, where the Constitution of the United States was signed, is an example of this kind of district.

    A. educational

*   B. historic

    C. single-family

    D. specialty

9. What is the process called when a market area goes from agricultural to residential?

    A. change

    B. conversion

    C. transformation

*   D. transition

10. An appraiser provided advice on various commercial building sites to a client, including a value opinion on the optimum recommended site. What type of appraisal practice did the appraiser perform?

*   A.   appraisal

     B.   appraisal review

     C.   property management

     D.   real property consulting

11. Trotter performed an appraisal with an "exterior-only" inspection. The degree to which a property is inspected is which part of the appraisal development process?

     A.   appraiser's certification

     B.   appraiser's statement of disclosure

     C.   limiting conditions statement

*   D.   scope of work

12. Moyer completed an appraisal for a bank on a property that was being refinanced. The owners of the property paid for the appraisal when they completed the application at the bank and were promised a copy of the appraisal report. In this case, what is the property owner?

     A.   an intended user only

*   B.   a party who is neither the client nor an intended user

     C.   both the client and an intended user

     D.   the client only

13. A declining market area experiences resurgence in demand due to buyers wanting to move closer to the center of the city. As a result, the current tenants are gradually displaced from the area. What is this process called?

*   A.   gentrification

     B.   growth

     C.   market cycle

     D.   renaissance

14. A real estate agent who is not an appraiser provides a client with an asking price that will be used to list a property on the market. The agent

    A. cannot provide this service.

    B. has performed appraisal practice.

 * C. has performed a valuation service.

    D. is practicing appraisal without a license.