

Exploring Physical Geography, 2e (Reynolds)
Chapter 1 The Nature of Physical Geography

- 1) Which of the following is not a feature of what physical geographers study?
- A) Impacts of spatial distributions of the natural environment on people
 - B) Processes that created and changed the spatial distributions of natural features
 - C) Interconnections between different aspects of the natural environment
 - D) All of these are features of what physical geographers study.

Answer: D

Section: 01.01 What Is Physical Geography?

Topic: Physical Geography and its Influence on Life; Investigation of Geographic Problems

Bloom's: 1. Remember

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- 2) Which of the following topics of study would best incorporate the holistic perspective?
- A) The impact of political policies on soil erosion
 - B) The examination of soil grains under a microscope to identify the amount of air space between grains
 - C) The degree to which soil particles expand when they are wet and contract when they dry out
 - D) Identifying the soil type from a sample collected in the field

Answer: A

Section: 01.01 What Is Physical Geography?

Topic: Physical Geography and its Influence on Life; Investigation of Geographic Problems

Bloom's: 3. Apply

Gradable: automatic

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- 3) Geography is considered to be
- A) a natural science.
 - B) a social science.
 - C) both a natural and social science.
 - D) neither a natural nor a social science.

Answer: C

Section: 01.01 What Is Physical Geography?

Topic: Physical Geography and its Influence on Life

Bloom's: 1. Remember

Gradable: automatic

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- 4) The geographic perspective that distinguishes geography from other fields of study means that
- A) geographers use computers only after they examine maps.
 - B) geographers examine how the spatial features affect and are affected by nonspatial issues.
 - C) geographers use field work to report results.
 - D) geographers do not need to follow the scientific method when they solve research problems.

Answer: B

Section: 01.01 What Is Physical Geography?

Topic: Physical Geography and its Influence on Life

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

- 5) Which of the following clues would the steepness of a slope, by itself, be most directly able to provide to a geographer in understanding a place?
- A) It suggests the ethnicity of human settlement that may have lived on the slope.
 - B) It suggests the type of rock that might be present to form soils.
 - C) It suggests how far the location is from the equator.
 - D) It suggests the strength of the wind at the location.

Answer: B

Section: 01.01 What Is Physical Geography?

Topic: Physical Geography and its Influence on Life; Geographic Information Systems

Bloom's: 3. Apply

Gradable: automatic

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- 6) The relationship between mountains and precipitation can be generalized by saying that
- A) mountaintops tend to have more precipitation in summer but less precipitation in winter than the surrounding lowlands.
 - B) mountaintops tend to have more precipitation in winter but less precipitation in summer than the surrounding lowlands.
 - C) mountaintops generally experience more precipitation than the surrounding lowlands.
 - D) mountaintops generally experience less precipitation than the surrounding lowlands.

Answer: C

Section: 01.01 What Is Physical Geography?

Topic: Physical Geography and its Influence on Life; Earth's Natural Systems

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

- 7) The conceptual basis of geographic questions involves the notion that
- A) the location of an object affects other features in the natural environment but not the human environment.
 - B) the location of an object is affected by other features in the natural environment but not the human environment.
 - C) the location of an object affects, and is affected by, other features in both the natural and human environment.
 - D) the location of an object is unique and largely unaffected by other features in both the natural and human environment.

Answer: C

Section: 01.02 How Do We Investigate Geographic Questions?

Topic: Physical Geography and its Influence on Life; Investigation of Geographic Problems; Earth's Natural Systems

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

- 8) Which of the following would be an example of qualitative data?
- A) A physical geographer measuring the time required for a plume of air pollution to reach a town
 - B) A physical geographer taking a census of the number of pine trees infested with a certain disease
 - C) A physical geographer monitoring the water temperature in a stream
 - D) A physical geographer noting the color of a soil

Answer: D

Section: 01.02 How Do We Investigate Geographic Questions?

Topic: Investigation of Geographic Problems

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

- 9) Which of the following is an example of quantitative data?
- A) A physical geographer sketching the general appearance of a landscape
 - B) A physical geographer describing the shape of rock fragments
 - C) A physical geographer measuring the total rainfall from a storm
 - D) A physical geographer observing that the clouds are flat and blanket-like

Answer: C

Section: 01.02 How Do We Investigate Geographic Questions?

Topic: Investigation of Geographic Problems; Earth's Natural Systems

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

- 10) A hypothesis is a
- A) conclusion based on results of an investigation.
 - B) proposed explanation developed before formal investigation.
 - C) question developed that leads to an observation.
 - D) strategy for solving a scientific problem.

Answer: B

Section: 01.02 How Do We Investigate Geographic Questions?

Topic: Investigation of Geographic Problems

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

- 11) Once a hypothesis is rejected,
- A) an observation cannot be made.
 - B) the experiment fails.
 - C) it can be revisited in future studies.
 - D) the scientific method has been violated.

Answer: C

Section: 01.02 How Do We Investigate Geographic Questions?

Topic: Investigation of Geographic Problems

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

- 12) The "sphere" that intersects with all of the other spheres is the
- A) atmosphere.
 - B) biosphere.
 - C) hydrosphere.
 - D) lithosphere.

Answer: B

Section: 01.03 How Do Natural Systems Operate?

Topic: Earth's Natural Systems; Interaction Between the Earth's Spheres

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

- 13) The lithosphere refers to the
- A) plasticky interior of the Earth that moves in response to heating from the interior.
 - B) molten lava that is ejected from volcanoes.
 - C) land part of the Earth only.
 - D) solid upper part of the Earth, including the crust and uppermost mantle.

Answer: D

Section: 01.03 How Do Natural Systems Operate?

Topic: Earth's Natural Systems; Interaction Between the Earth's Spheres

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

- 14) The difference between open and closed systems is that
- A) open systems are not predictable but closed systems are.
 - B) open systems can acquire matter and energy, but closed systems cannot.
 - C) open systems are much simpler in terms of the number of interactions between objects in the system.
 - D) open systems occur on land and closed systems occur in the ocean.

Answer: B

Section: 01.03 How Do Natural Systems Operate?

Topic: Earth's Natural Systems

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

- 15) When you shake fish food into an aquarium, you are contributing to a(n)
- A) open system.
 - B) negative feedback system.
 - C) positive feedback system.
 - D) closed system.

Answer: A

Section: 01.03 How Do Natural Systems Operate?

Topic: Earth's Natural Systems

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

- 16) A dynamic system refers to a system in which
- A) motion causes the matter within the system to contain less energy than it would have contained when sitting still.
 - B) water molecules are constantly increasing in speed over time.
 - C) the first law of thermodynamics does not apply.
 - D) matter, energy, or both are constantly changing their position, amounts, or form.

Answer: D

Section: 01.03 How Do Natural Systems Operate?

Topic: Earth's Natural Systems

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

- 17) A snowball that rolls down a hill, gradually gaining more and more mass and rolling faster and faster as it continues, would be an example of a(n)
- A) positive feedback system.
 - B) negative feedback system.
 - C) open system.
 - D) closed system.

Answer: A

Section: 01.03 How Do Natural Systems Operate?

Topic: Earth's Natural Systems

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

- 18) Which of the following statements is true about the transfer of energy, matter, or momentum in the atmosphere?
- A) Momentum is usually transferred from the surface upward.
 - B) Energy transfer occurs when water changes state between solid, liquid, or gas.
 - C) Matter is transferred so effectively that the spatial distribution of matter in the atmosphere is uniform.
 - D) No transfer of energy, matter, or momentum can occur in the polar part of the atmosphere.

Answer: B

Section: 01.04 What Are Some Important Earth Cycles?

Topic: Earth's Cycles; Geographic Information Systems

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

19) The hydrologic cycle includes all of the following processes except

- A) evaporation.
- B) precipitation.
- C) runoff.
- D) uplift.

Answer: D

Section: 01.04 What Are Some Important Earth Cycles?

Topic: Earth's Cycles

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

20) The most likely and direct consequence of a reduced rate of "burial" of sediment in the rock cycle would be

- A) the delayed rate of formation of rock.
- B) slower rates of uplift of rocks back to the surface.
- C) more rapid deposition of more sediment.
- D) increased rates of rock deformation.

Answer: A

Section: 01.04 What Are Some Important Earth Cycles?

Topic: Earth's Cycles

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

21) The cycling of chemical substances throughout the biosphere is accomplished through

- A) vertical transfer of momentum.
- B) the first law of thermodynamics.
- C) the rock cycle.
- D) the work of living things and physical and chemical processes.

Answer: D

Section: 01.04 What Are Some Important Earth Cycles?

Topic: Earth's Cycles

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

22) In the rock cycle, sediment is stripped away and transported by the process of _____ after the process of _____ has taken place.

- A) erosion; weathering.
- B) weathering; erosion.
- C) uplift; solidification.
- D) solidification; uplift.

Answer: A

Section: 01.04 What Are Some Important Earth Cycles?

Topic: Earth's Cycles

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

23) One of the main roles of plants in biogeochemical cycles is to

- A) reduce the rate of weathering.
- B) decrease the amount of time that water remains in contact with rocks and soils.
- C) extract carbon dioxide from the atmosphere.
- D) harden the soils.

Answer: C

Section: 01.04 What Are Some Important Earth Cycles?

Topic: Earth's Cycles

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

24) The most direct example of an atmosphere-lithosphere exchange is

- A) a forest being planted.
- B) an active coral reef colony.
- C) a volcanic eruption.
- D) a wave breaking on a shoreline.

Answer: C

Section: 01.05 How Do Earth's Four Spheres Interact?

Topic: Interaction Between the Earth's Spheres

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

- 25) When the lithosphere and biosphere interact,
- A) plants remove nutrients from the soil but return few if any nutrients to the soil.
 - B) plants return nutrients to the soil but remove few if any nutrients from the soil.
 - C) plants remove nutrients from the soil and return nutrients to the soil.
 - D) plants acquire their nutrients directly from the air so that they do not disturb the nutrient structure in the soil.

Answer: C

Section: 01.05 How Do Earth's Four Spheres Interact?

Topic: Interaction Between the Earth's Spheres

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

- 26) All of the following are likely effects of deforestation except
- A) increased runoff into rivers and streams.
 - B) increased rate of soil erosion.
 - C) increased rate at which carbon dioxide is extracted out of the atmosphere.
 - D) increased rate of destruction of plant and animal habitats.

Answer: C

Section: 01.05 How Do Earth's Four Spheres Interact?

Topic: Interaction Between the Earth's Spheres

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

- 27) All of the following are typical effects of dam construction except
- A) interruption of the normal seasonal variation in flows of water.
 - B) increased amount of sediment carried downstream of the dam.
 - C) disruption of natural ecosystems.
 - D) protecting towns from flooding.

Answer: B

Section: 01.05 How Do Earth's Four Spheres Interact?

Topic: Interaction Between the Earth's Spheres

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

28) Geographic factors are important when considering environmental issues or when evaluating potential sites for new agricultural area or business because

- A) location and spatial distributions often affect environmental, social, or economic behavior.
- B) the most important environmental issues and the advantages of sites for new agricultural areas or businesses are often the same across space.
- C) environmental policies and zoning regulations seldom consider geographic factors.
- D) it is seldom important to investigate environmental issues or evaluate potential sites from a holistic approach.

Answer: A

Section: 01.05 How Do Earth's Four Spheres Interact?

Topic: Interaction Between the Earth's Spheres

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

29) Shaded relief maps are most directly helpful in

- A) determining the average annual climatic features across the Earth's surface.
- B) identifying the shape of features of the Earth.
- C) representing the types of features on the surface of the Earth.
- D) "seeing through" the surface of the Earth to the subsurface.

Answer: B

Section: 01.06 How Do We Depict Earth's Surface?

Topic: Representation of the Earth's Surface

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

30) Points on a map to the same side of a certain contour on a topographic map will all have

- A) the same mineral composition, unless there is no index contour on the map.
- B) elevations that are all above, or all below, the elevation that the contour represents.
- C) rivers and streams that run parallel to the contour line, while points on the other side of that contour have rivers and streams that do not run parallel to the contour line.
- D) more similar climate than points to the other side of that contour line.

Answer: B

Section: 01.06 How Do We Depict Earth's Surface?

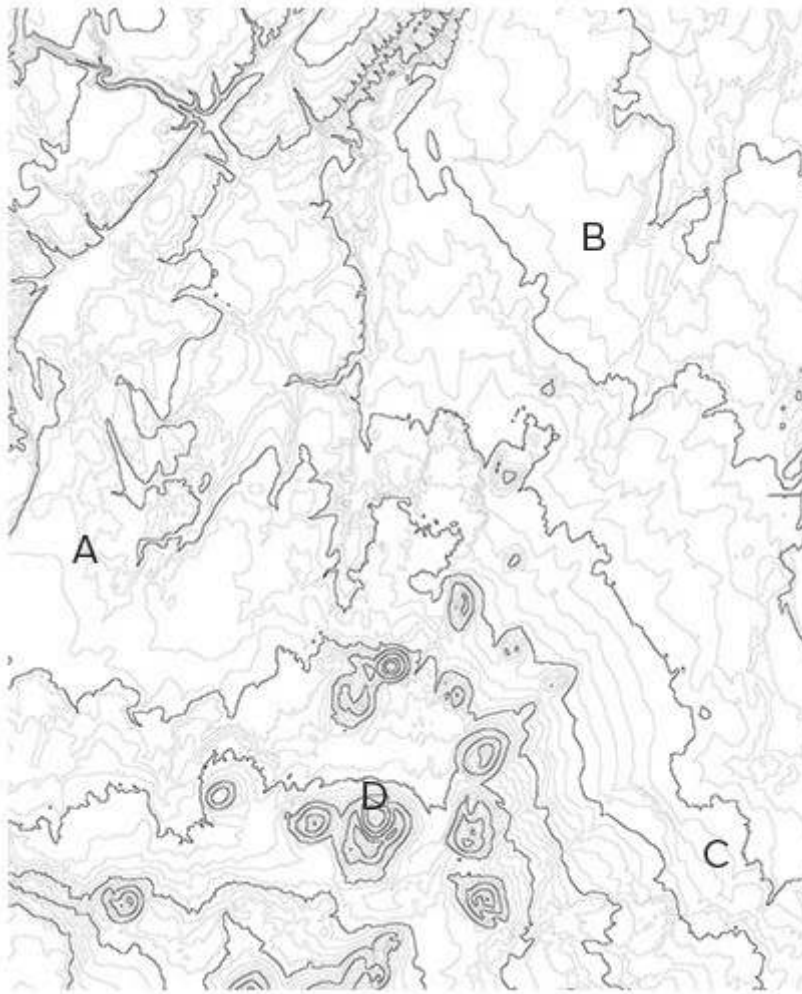
Topic: Representation of the Earth's Surface

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

31) In the topographic map below, the place with the greatest relief among the four choices is at



- A) A.
- B) B.
- C) C.
- D) D.

Answer: D

Section: 01.06 How Do We Depict Earth's Surface?

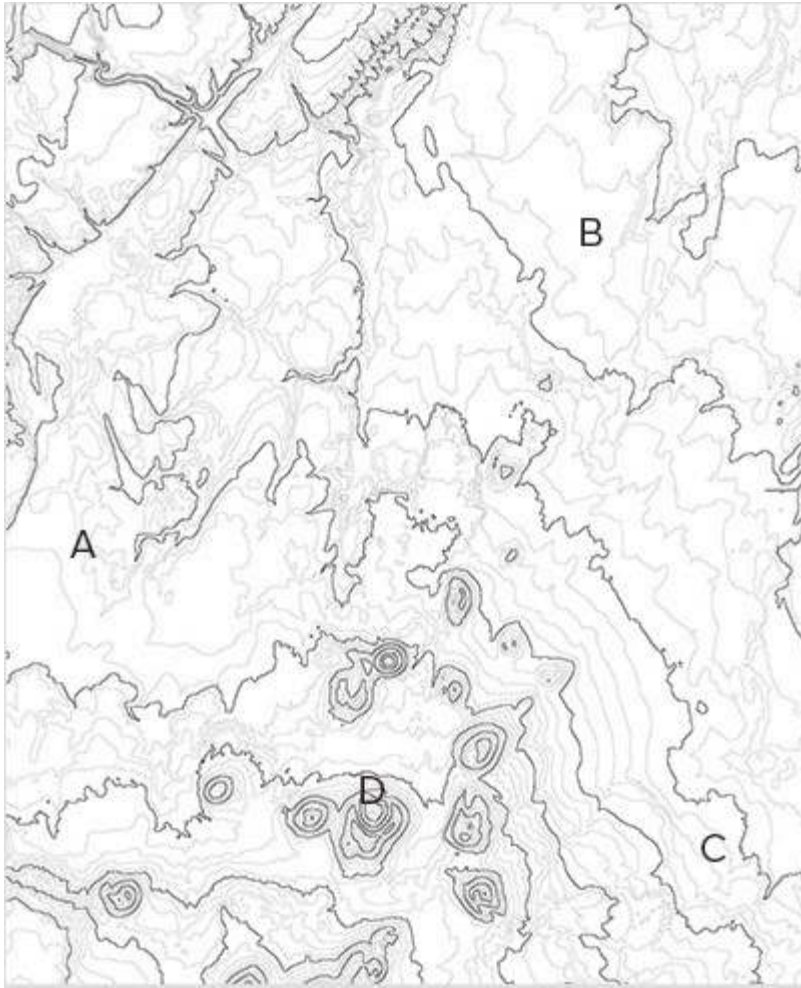
Topic: Representation of the Earth's Surface

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

32) The most logical place to build a soccer or football field on the following map would be at



- A) A.
- B) B.
- C) C.
- D) D.

Answer: B

Section: 01.06 How Do We Depict Earth's Surface?

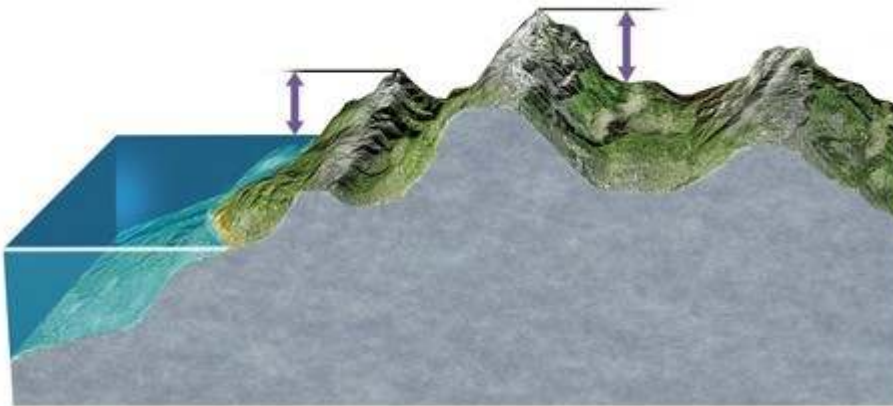
Topic: Representation of the Earth's Surface

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

33) In the diagram below, the left arrow represents



- A) elevation and the right arrow represents relief.
- B) relief and the right arrow represents slope.
- C) elevation and the right arrow represents depth.
- D) relief and the right arrow represents elevation.

Answer: A

Section: 01.06 How Do We Depict Earth's Surface?

Topic: Representation of the Earth's Surface

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

34) The meanings of elevation and relief imply that

- A) elevation and relief are the same when the location is far inland.
- B) elevation cannot be smaller than relief except when comparing areas below sea level.
- C) relief must always exceed elevation in coastal areas but elevation must always exceed relief in mountainous areas.
- D) the units of measurement of elevation must be different from the units of measurement of relief.

Answer: B

Section: 01.06 How Do We Depict Earth's Surface?

Topic: Representation of the Earth's Surface

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

- 35) A steep slope implies a
- A) weak gradient and closely spaced contours.
 - B) steep gradient and closely spaced contours.
 - C) weak gradient and widely spaced contours.
 - D) steep gradient and widely spaced contours.

Answer: B

Section: 01.06 How Do We Depict Earth's Surface?

Topic: Representation of the Earth's Surface

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

- 36) A gradient of 0.037 implies that
- A) the slope will drop by 37 meters or feet or inches for every 1000 meters or feet or inches of horizontal distance.
 - B) there are 0.037 times as many index contours as there are other contours on the map.
 - C) the slope is steeper than another location with a gradient of 0.040.
 - D) topographic map or shaded-relief map cannot be constructed for the area because the gradient is too small.

Answer: A

Section: 01.06 How Do We Depict Earth's Surface?

Topic: Representation of the Earth's Surface

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

- 37) Which of the following is true of meridians?
- A) Meridians run from east to west.
 - B) The highest degree label for meridians is 90°.
 - C) Meridians are always parallel to each other.
 - D) Meridians always follow great circles.

Answer: D

Section: 01.07 What Do Latitude and Longitude Indicate?

Topic: Representation of Locations on a Globe

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

- 38) The significance of any great circle is that it always
- A) connects two points on the surface of a sphere with the shortest distance.
 - B) follows the same line of latitude.
 - C) passes through the point where the equator intersects with the Prime Meridian.
 - D) passes through the North or South Pole.

Answer: A

Section: 01.07 What Do Latitude and Longitude Indicate?

Topic: Representation of Locations on a Globe

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

- 39) Which of the following is an example of a small circle?

- A) Prime Meridian
- B) Tropic of Cancer
- C) Equator
- D) International Date Line

Answer: B

Section: 01.07 What Do Latitude and Longitude Indicate?

Topic: Representation of Locations on a Globe

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

- 40) If two places have the same latitude but different longitudes,

- A) the two places are directly east or west of each other.
- B) the two places are directly north or south of each other.
- C) the places will be directly east or west of each other on some map projections but not others.
- D) the places will be directly north or south of each other on some map projections but not others.

Answer: A

Section: 01.07 What Do Latitude and Longitude Indicate?

Topic: Representation of Locations on a Globe

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

41) 0° of latitude is found at the _____, and 90° of latitude is found at the _____.

- A) South Pole; North Pole
- B) South Pole; Equator
- C) Equator; North Pole
- D) North Pole; Prime Meridian

Answer: C

Section: 01.07 What Do Latitude and Longitude Indicate?

Topic: Representation of Locations on a Globe

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

42) The Prime Meridian separates

- A) great circles from small circles.
- B) the Northern Hemisphere from the Southern Hemisphere.
- C) the Eastern Hemisphere from the Western Hemisphere.
- D) places experiencing one day on the calendar from places experiencing another day on the calendar.

Answer: C

Section: 01.07 What Do Latitude and Longitude Indicate?

Topic: Representation of Locations on a Globe

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

43) The number of degrees of longitude that a place has is derived from the angle formed by the place's location on the Earth surface,

- A) the center of the Earth at the same latitude, and the North Pole (if in the Northern Hemisphere) or South Pole (if in the Southern Hemisphere).
- B) the center of the Earth, and the equator.
- C) the center of the Earth at the same latitude, and the Prime Meridian at the same latitude.
- D) the center of the Earth at the same latitude, and the International Date Line at the same latitude.

Answer: C

Section: 01.07 What Do Latitude and Longitude Indicate?

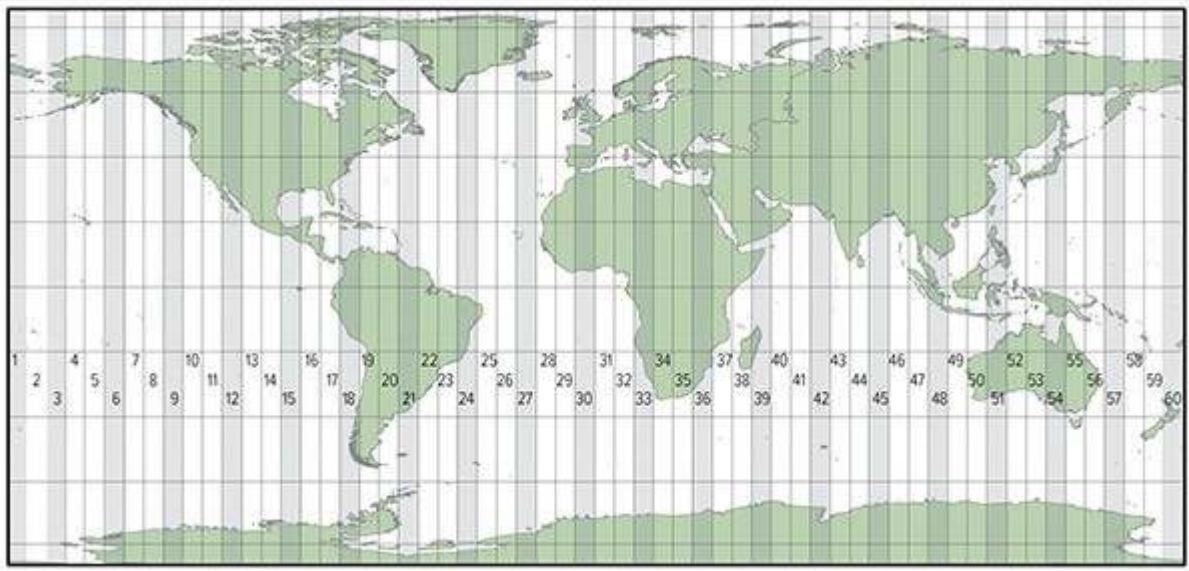
Topic: Representation of Locations on a Globe

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

44) The map below shows zone numbers associated with which coordinate system?



- A) Universal Transverse Mercator
- B) State Plane Coordinate System
- C) Public Land Survey System

Answer: A

Section: 01.08 What Are Some Other Coordinate Systems?

Topic: Other Coordinate Systems

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

45) Which of the following coordinate systems is used outside of the United States?

- A) Universal Transverse Mercator
- B) State Plane Coordinate System
- C) Public Land Survey System
- D) All of these are used outside of the United States.

Answer: A

Section: 01.08 What Are Some Other Coordinate Systems?

Topic: Other Coordinate Systems

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

46) In the State Plane Coordinate System, the rationale for dividing states into long, narrow zones is to

- A) keep major highways in the same zone.
- B) put as many as possible of the state's cities in the same zone while keeping rural areas in different zones.
- C) ensure that each zone falls into one and only one time zone.
- D) minimize the distortion in drawing maps of the area.

Answer: D

Section: 01.08 What Are Some Other Coordinate Systems?

Topic: Other Coordinate Systems

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

47) The Public Land Survey System (PLSS) is not employed in states where

- A) large rivers or lakes interrupt the rectangular pattern of townships.
- B) settlement by the French resulted in different survey systems that predated the PLSS.
- C) mountains and other rugged terrain made it too difficult to survey the land.
- D) there is little publicly owned land.

Answer: D

Section: 01.08 What Are Some Other Coordinate Systems?

Topic: Other Coordinate Systems

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

48) In the Public Land Survey System (PLSS), beginning at the Principal Meridian, the land is subdivided into six-mile-wide, north-south strips of land called _____; beginning at the Base Line, the land is subdivided into six-mile-wide, east-west strips of land called _____.

- A) northings; eastings
- B) eastings; northings
- C) townships; ranges
- D) ranges; townships

Answer: D

Section: 01.08 What Are Some Other Coordinate Systems?

Topic: Other Coordinate Systems

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

49) In the Public Land Survey System (PLSS), a township labeled T3N, R1W would indicate that it is

- A) a one-mile by one-mile tract of land that is three townships north of the nearest base line and one range west of the nearest principal meridian.
- B) a one-mile by one-mile tract of land that is three townships north of the nearest principal meridian and one range west of the nearest base line.
- C) a six-mile by six-mile tract of land that is three townships north of the nearest base line and one range west of the nearest principal meridian.
- D) a six-mile by six-mile tract of land that is three townships north of the nearest principal meridian and one range west of the nearest base line.

Answer: C

Section: 01.08 What Are Some Other Coordinate Systems?

Topic: Other Coordinate Systems

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

50) All map projections introduce at least some distortion because

- A) it is impossible to represent a three-dimensional surface on a two-dimensional plane perfectly.
- B) the best mathematical algorithms used in map projections have not been discovered yet.
- C) the Earth is not a perfect sphere.
- D) the Earth's orbit around the Sun is not perfectly circular.

Answer: A

Section: 01.09 How Do Map Projections Influence the Portrayal of Spatial Data?

Topic: Map Projections

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

51) An important strategy in choosing the correct map projection should always be to

- A) decide whether it is more important to show area of features or shape of features accurately.
- B) minimize distortion in the part of the map that is most important for the application at hand.
- C) determine whether distortion needs to be minimized at a single point on the map or along a linear area of the map.
- D) All of these are important strategies in choosing the correct map projection.

Answer: D

Section: 01.09 How Do Map Projections Influence the Portrayal of Spatial Data?

Topic: Map Projections

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

52) A conformal map projection is one that

- A) is based on the idea of projecting the image on all or part of the globe onto a cone.
- B) preserves (i.e., does not distort) the shapes of features, like countries or continents.
- C) preserves (i.e., does not distort) the area of features, like countries or continents.
- D) allows only a hemisphere or less of the Earth's surface to be shown on a map.

Answer: B

Section: 01.09 How Do Map Projections Influence the Portrayal of Spatial Data?

Topic: Map Projections

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

53) Sinusoidal projections operate based on the premise that

- A) distortion should be minimized in polar areas and maximized in equatorial areas.
- B) the map can be interrupted in areas that are not important to show on a particular map and distortion can be minimized in areas that are more important to show accurately.
- C) parallels of latitude and meridians of longitude should intersect at right angles.
- D) the globe is projected onto a cone, with minimized distortion along the arc or arcs where the cone intersects with the globe.

Answer: B

Section: 01.09 How Do Map Projections Influence the Portrayal of Spatial Data?

Topic: Map Projections

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

54) If you need to show the entire Earth on a map, which of the following projections would not be a possibility?

- A) Mercator
- B) Sinusoidal
- C) Polar stereographic
- D) Robinson

Answer: C

Section: 01.09 How Do Map Projections Influence the Portrayal of Spatial Data?

Topic: Map Projections

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

55) Which of these types of map projections has only a single point at which no distortion is introduced?

- A) cylindrical
- B) sinusoidal
- C) conical
- D) planar

Answer: D

Section: 01.09 How Do Map Projections Influence the Portrayal of Spatial Data?

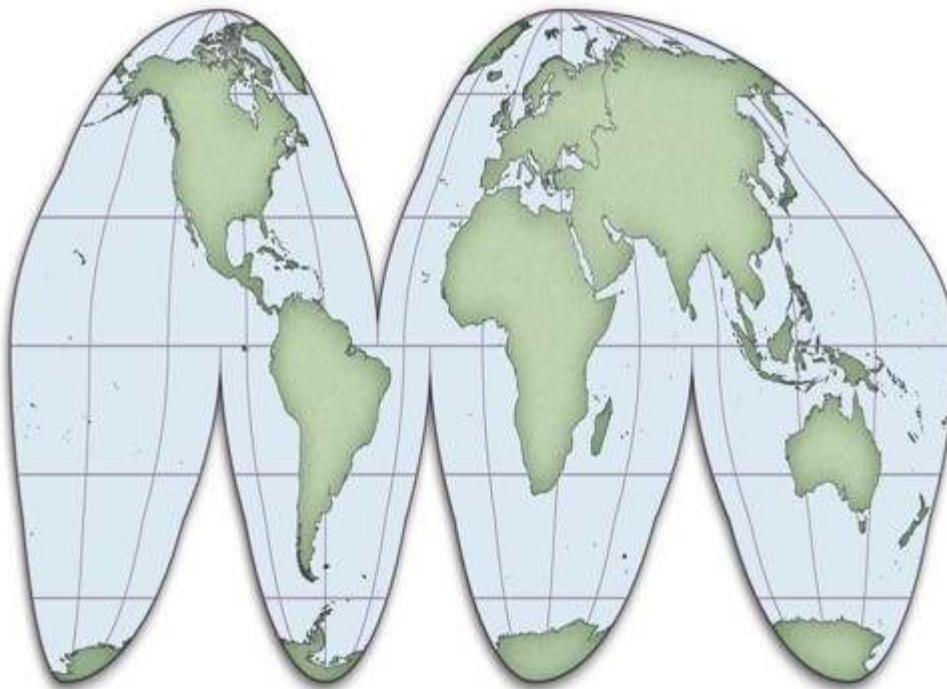
Topic: Map Projections

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

56) The map below uses what type of map projection?



- A) Cylindrical
- B) Sinusoidal
- C) Conical
- D) Planar

Answer: B

Section: 01.09 How Do Map Projections Influence the Portrayal of Spatial Data?

Topic: Map Projections

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

57) The detailed roads of a very small area, such as your neighborhood, would need to be shown on a map at what scale?

- A) Large
- B) Small

Answer: A

Section: 01.10 How Do We Use Maps and Photographs?

Topic: Maps: Tools for Reporting, Analyzing, and Interpreting the Environment

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

58) The use of stereopairs is important in creating maps because they

- A) allow the scale to become smaller.
- B) remove the distortions introduced by the map projection.
- C) reveal the three-dimensional features of a landscape.
- D) penetrate through the clouds that may have been present on the day when the aerial photograph was taken.

Answer: C

Section: 01.10 How Do We Use Maps and Photographs?

Topic: Maps: Tools for Reporting, Analyzing, and Interpreting the Environment

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

59) Base maps are useful because they

- A) contain no distortions introduced by the map projection.
- B) do not require stereopairs for their construction.
- C) avoid using Goode's projection.
- D) allow for the reporting of primary data on them.

Answer: D

Section: 01.10 How Do We Use Maps and Photographs?

Topic: Maps: Tools for Reporting, Analyzing, and Interpreting the Environment

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

60) Maps are secondary data sources when

- A) they are used to provide an interpretation for addressing some other question.
- B) they have undergone two or more revisions in order to enhance their accuracy.
- C) they express coordinates not only in latitude-longitude but also in at least one other survey system.
- D) they are available in both paper and online formats.

Answer: A

Section: 01.10 How Do We Use Maps and Photographs?

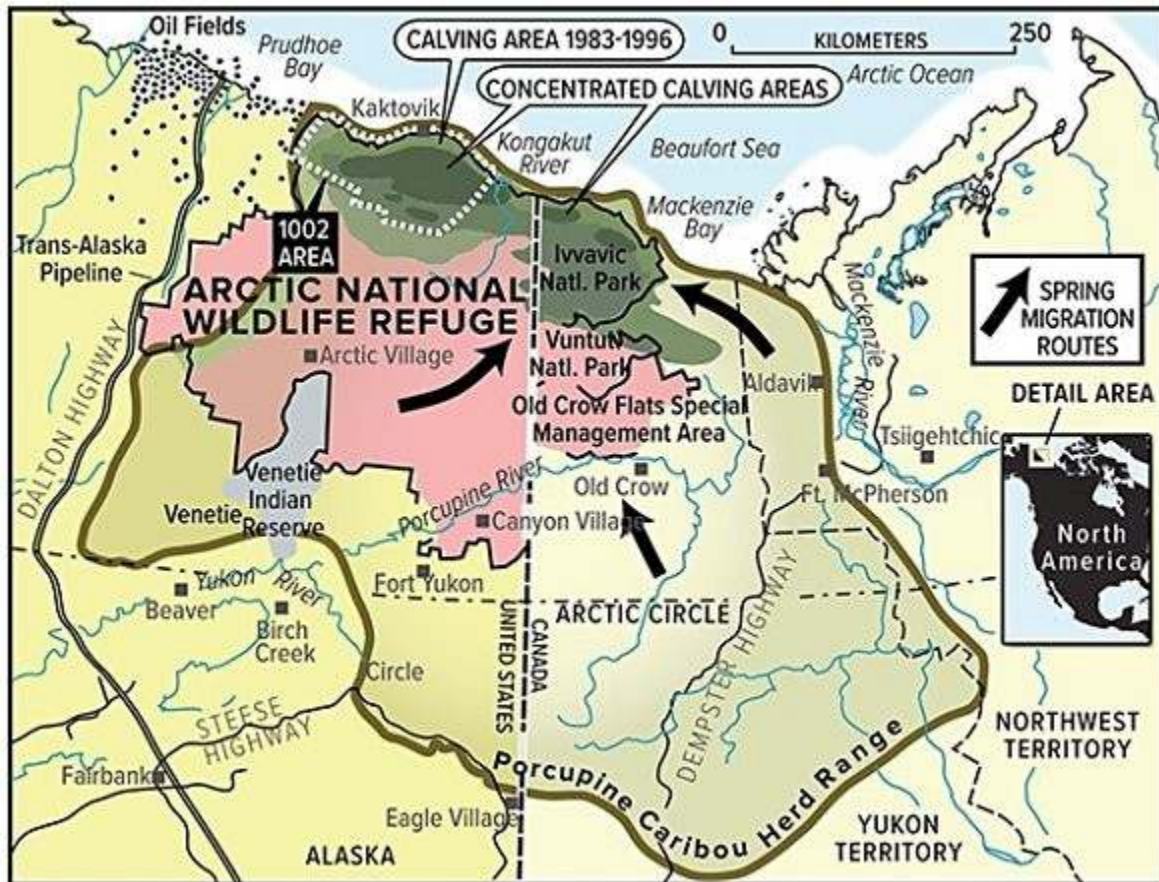
Topic: Maps: Tools for Reporting, Analyzing, and Interpreting the Environment

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

61) On the map below, all of the following would be considered "interpretations" except



- A) spring migration routes.
- B) Ivvavik National Park.
- C) concentrated calving areas.
- D) porcupine caribou herd range.

Answer: B

Section: 01.10 How Do We Use Maps and Photographs?

Topic: Maps: Tools for Reporting, Analyzing, and Interpreting the Environment

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

- 62) Global positioning systems (GPS) can "know" their location by
- A) measuring the time required for radio signals from four or more satellites to reach the receiver.
 - B) relating changes in detected radiation to changes in the position of the Sun.
 - C) continually measuring changes in angle to a stationary reference point, such as a streetlight, in the area of the receiver.
 - D) relating slight changes in magnetism and gravity to changes in the distance and direction of movement from the point at which the location of the receiver was last calibrated.

Answer: A

Section: 01.11 How Do We Use Global Positioning Systems and Remote Sensing?

Topic: Global Positioning Systems and Remote Sensing

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

- 63) Differential global positioning system (GPS) would be more useful than a handheld GPS when
- A) portability and mobility is important.
 - B) the system is used in an isolated location far from a cellular telephone signal.
 - C) extremely precise measurements are needed.
 - D) two or more measurements are being taken simultaneously.

Answer: C

Section: 01.11 How Do We Use Global Positioning Systems and Remote Sensing?

Topic: Global Positioning Systems and Remote Sensing

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

- 64) The difference between active and passive remote sensing systems is that
- A) active systems involve the latest generation of satellites while passive systems use signals from older satellites.
 - B) active systems include aerial photography while passive systems rely on satellite imagery.
 - C) active systems can operate throughout cloud or fog cover while passive systems require clear sky conditions.
 - D) active systems emit their own energy while passive systems simply detect existing energy signals.

Answer: D

Section: 01.11 How Do We Use Global Positioning Systems and Remote Sensing?

Topic: Global Positioning Systems and Remote Sensing

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

65) Multispectral remote sensing refers to

- A) returning to the same site many times to analyze changes in the environment over time.
- B) the use of many different types of satellites to detect environmental features at a place.
- C) detecting energy at many wavelength bands of energy simultaneously.
- D) the detection of features across a large part of Earth's surface at the same time.

Answer: C

Section: 01.11 How Do We Use Global Positioning Systems and Remote Sensing?

Topic: Global Positioning Systems and Remote Sensing

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

66) If a researcher wanted to identify and map healthy vegetation using remote sensing, she would most likely use. Data that detects what type of energy?

- A) Microwave
- B) Near-infrared
- C) Sonar
- D) Thermal infrared

Answer: B

Section: 01.11 How Do We Use Global Positioning Systems and Remote Sensing?

Topic: Global Positioning Systems and Remote Sensing

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

67) The concept of overlay in geographic information systems (GIS) refers to the

- A) incorporation of multiple types of digital spatial data (maps) in answering research questions.
- B) constant, automatic updating of digital spatial data (maps) of the same type with newer data.
- C) use of digital spatial data (maps) to identify what lies deep beneath the Earth's surface.
- D) inclusion of a grid (such as latitude-longitude or universal Transverse Mercator) on a digital spatial dataset (map).

Answer: A

Section: 01.12 How Do We Use GIS to Explore Spatial Issues?

Topic: Geographic Information Systems

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

68) Which of the following is not a type of spatial distribution that can be assessed using geographic information systems (GIS)?

- A) Clustered
- B) Random
- C) Regular
- D) Irregular

Answer: D

Section: 01.12 How Do We Use GIS to Explore Spatial Issues?

Topic: Geographic Information Systems

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

69) The spatial interpolation features of a geographic information system (GIS) would be most useful when a researcher needs to

- A) detect energy at a wavelength that is not detected directly by an existing satellite.
- B) estimate data at a particular point where it has not been measured.
- C) use a large-scale map but only a small-scale map of the area of interest is available.
- D) identify the optimal route through an area.

Answer: B

Section: 01.12 How Do We Use GIS to Explore Spatial Issues?

Topic: Geographic Information Systems

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

70) If a geographer wanted to use a geographic information system (GIS) to study soil contamination and determined that only the areas within 1.5 kilometers of a toxic waste dump needed to be considered and mapped, he/she would most likely choose. Which type of GIS function?

- A) Buffering
- B) Kriging
- C) Area calculation
- D) Point-pattern analysis

Answer: A

Section: 01.12 How Do We Use GIS to Explore Spatial Issues?

Topic: Geographic Information Systems

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

- 71) Greenwich mean time (GMT) is a system of
- A) coordinating rules for what time should appear on a clock, around the world.
 - B) determining what years should be considered leap years and which should not.
 - C) identifying the phase of the lunar cycle.
 - D) determining when daylight savings time should go into effect.

Answer: A

Section: 01.13 What Is the Role of Time in Geography?

Topic: Role of Time in Geography

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

- 72) If it is 9:00 a.m. in your time zone, two time zones west of you the clock will say
- A) 7:00 a.m.
 - B) 11:00 a.m.

Answer: A

Section: 01.13 What Is the Role of Time in Geography?

Topic: Role of Time in Geography

Bloom's: 3. Apply

Gradable: automatic

Accessibility: Keyboard Navigation

- 73) The purpose of Daylight Savings Time is to
- A) allow an extra hour per day for crops to grow during the growing season, at the expense of an hour per day when crops are not in the ground.
 - B) provide an extra hour of daylight in the evening hours, to conserve energy, at the expense of an hour of daylight in the morning hours.
 - C) adjust for variations in the speed of Earth's orbit around the Sun at different times of the year.
 - D) allow the Greenwich Mean Time system to represent the actual position of the Sun in the sky more accurately.

Answer: B

Section: 01.13 What Is the Role of Time in Geography?

Topic: Role of Time in Geography

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

74) Rates in the Earth system

- A) span the range from very rapid to very slow.
- B) are nearly always very slow.
- C) are nearly always very fast.
- D) can never be calculated accurately.

Answer: A

Section: 01.13 What Is the Role of Time in Geography?

Topic: Role of Time in Geography

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

75) Which of the following was mentioned in the opening two-page spread of Chapter 1 (The Nature of Physical Geography)?

- A) Volcanoes
- B) Earthquakes
- C) Climate
- D) Water
- E) All of these choices are correct

Answer: E

Section: 01.00 The Ancient and Modern Discipline of Geography

Topic: Nature of Physical Geography

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

76) One of the main topics discussed in the opening two-page spread of Chapter 1 (The Nature of Physical Geography) was

- A) the relevance of geography in our modern world.
- B) that volcanoes have dramatically changed the atmosphere over time.
- C) a huge meteorite impact caused the dinosaurs to become extinct.
- D) All of these choices are correct

Answer: A

Section: 01.00 The Ancient and Modern Discipline of Geography

Topic: Nature of Physical Geography

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

77) What type of geographers concentrate on studying landforms and processes on Earth's surface, in the oceans, and in the atmosphere, and how they affect life?

- A) Human geographers
- B) Physical geographers
- C) Religious geographers
- D) Historical geographers

Answer: B

Section: 01.00 The Ancient and Modern Discipline of Geography

Topic: Nature of Physical Geography

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

78) What type of data did geographers use to determine and study the location and movement of the Deepwater Horizon oil spill in 2010?

- A) Satellite images
- B) Topographic maps
- C) Shaded relief maps
- D) Microwave images

Answer: A

Section: 01.14 Connections: How Did Geographers Help in the 2010 Gulf of Mexico Oil-Spill Cleanup?

Topic: Oil Spills

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

79) What was the most important factor in predicting how the 2010 Deepwater Horizon oil spill would travel?

- A) Density of the oil
- B) Patterns of oceanic and atmospheric circulation
- C) Thickness of the spill
- D) Ocean floor bathymetry

Answer: B

Section: 01.14 Connections: How Did Geographers Help in the 2010 Gulf of Mexico Oil-Spill Cleanup?

Topic: Oil Spills

Bloom's: 2. Understand

Gradable: automatic

Accessibility: Keyboard Navigation

80) How does spilled oil, such as that in the 2010 Deepwater Horizon spill, affect oceanic organisms?

- A) The type of bacteria that consumes oil thrives
- B) Animals that ingest oil become ill or die
- C) Shallow ocean plants are harmed when the oil blocks incoming sunlight
- D) All of these choices are correct

Answer: D

Section: 01.14 Connections: How Did Geographers Help in the 2010 Gulf of Mexico Oil-Spill Cleanup?

Topic: Oil Spills

Bloom's: 2. Understand

Gradable: automatic

Accessibility: Keyboard Navigation

81) What was the focus of the Chapter 1 Investigation?

- A) The effects of rising sea level due to climate change
- B) The effects of melting glaciers due to climate change
- C) How air pollution can cause climate change
- D) The impacts of deforestation of the land
- E) All of these choices are correct

Answer: D

Section: 01.15 Investigation: What Might Happen If This Location Is Deforested?

Topic: Evaluate: Deforestation of a Sample Area

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

82) Which of the following were factors to consider in the Chapter 1 Investigation?

- A) Wind directions
- B) How much sunlight reaches the ground
- C) Type of rocks, sediment, and soil
- D) Streams, lakes, and glaciers
- E) All of these choices are correct

Answer: E

Section: 01.15 Investigation: What Might Happen If This Location Is Deforested?

Topic: Evaluate: Deforestation of a Sample Area

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

83) Which of the following factors were mentioned in the Chapter 1 Investigation regarding slopes?

- A) Steepness of slopes
- B) Vegetation on a slope
- C) Erosion on a slope
- D) All of these choices are correct

Answer: D

Section: 01.15 Investigation: What Might Happen If This Location Is Deforested?

Topic: Evaluate: Deforestation of a Sample Area

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

84) Which of the following was NOT shown in the figure accompanying the Chapter 1 Investigation?

- A) Snow-covered mountains
- B) A coastline
- C) Ocean current flowing parallel to the coast
- D) A city
- E) Destruction caused by a tornado

Answer: E

Section: 01.15 Investigation: What Might Happen If This Location Is Deforested?

Topic: Evaluate: Deforestation of a Sample Area

Bloom's: 1. Remember

Gradable: automatic

Accessibility: Keyboard Navigation

Exploring Physical Geography, 2e (Reynolds)
Chapter 1 The Nature of Physical Geography

- 1) Which of the following is not a feature of what physical geographers study?
 - A) Impacts of spatial distributions of the natural environment on people
 - B) Processes that created and changed the spatial distributions of natural features
 - C) Interconnections between different aspects of the natural environment
 - D) All of these are features of what physical geographers study.

- 2) Which of the following topics of study would best incorporate the holistic perspective?
 - A) The impact of political policies on soil erosion
 - B) The examination of soil grains under a microscope to identify the amount of air space between grains
 - C) The degree to which soil particles expand when they are wet and contract when they dry out
 - D) Identifying the soil type from a sample collected in the field

- 3) Geography is considered to be
 - A) a natural science.
 - B) a social science.
 - C) both a natural and social science.
 - D) neither a natural nor a social science.

- 4) The geographic perspective that distinguishes geography from other fields of study means that
 - A) geographers use computers only after they examine maps.
 - B) geographers examine how the spatial features affect and are affected by nonspatial issues.
 - C) geographers use field work to report results.
 - D) geographers do not need to follow the scientific method when they solve research problems.

- 5) Which of the following clues would the steepness of a slope, by itself, be most directly able to provide to a geographer in understanding a place?
 - A) It suggests the ethnicity of human settlement that may have lived on the slope.
 - B) It suggests the type of rock that might be present to form soils.
 - C) It suggests how far the location is from the equator.
 - D) It suggests the strength of the wind at the location.

- 6) The relationship between mountains and precipitation can be generalized by saying that
 - A) mountaintops tend to have more precipitation in summer but less precipitation in winter than the surrounding lowlands.
 - B) mountaintops tend to have more precipitation in winter but less precipitation in summer than the surrounding lowlands.
 - C) mountaintops generally experience more precipitation than the surrounding lowlands.
 - D) mountaintops generally experience less precipitation than the surrounding lowlands.

- 7) The conceptual basis of geographic questions involves the notion that
- A) the location of an object affects other features in the natural environment but not the human environment.
 - B) the location of an object is affected by other features in the natural environment but not the human environment.
 - C) the location of an object affects, and is affected by, other features in both the natural and human environment.
 - D) the location of an object is unique and largely unaffected by other features in both the natural and human environment.
- 8) Which of the following would be an example of qualitative data?
- A) A physical geographer measuring the time required for a plume of air pollution to reach a town
 - B) A physical geographer taking a census of the number of pine trees infested with a certain disease
 - C) A physical geographer monitoring the water temperature in a stream
 - D) A physical geographer noting the color of a soil
- 9) Which of the following is an example of quantitative data?
- A) A physical geographer sketching the general appearance of a landscape
 - B) A physical geographer describing the shape of rock fragments
 - C) A physical geographer measuring the total rainfall from a storm
 - D) A physical geographer observing that the clouds are flat and blanket-like
- 10) A hypothesis is a
- A) conclusion based on results of an investigation.
 - B) proposed explanation developed before formal investigation.
 - C) question developed that leads to an observation.
 - D) strategy for solving a scientific problem.
- 11) Once a hypothesis is rejected,
- A) an observation cannot be made.
 - B) the experiment fails.
 - C) it can be revisited in future studies.
 - D) the scientific method has been violated.
- 12) The "sphere" that intersects with all of the other spheres is the
- A) atmosphere.
 - B) biosphere.
 - C) hydrosphere.
 - D) lithosphere.

- 13) The lithosphere refers to the
- A) plasticky interior of the Earth that moves in response to heating from the interior.
 - B) molten lava that is ejected from volcanoes.
 - C) land part of the Earth only.
 - D) solid upper part of the Earth, including the crust and uppermost mantle.
- 14) The difference between open and closed systems is that
- A) open systems are not predictable but closed systems are.
 - B) open systems can acquire matter and energy, but closed systems cannot.
 - C) open systems are much simpler in terms of the number of interactions between objects in the system.
 - D) open systems occur on land and closed systems occur in the ocean.
- 15) When you shake fish food into an aquarium, you are contributing to a(n)
- A) open system.
 - B) negative feedback system.
 - C) positive feedback system.
 - D) closed system.
- 16) A dynamic system refers to a system in which
- A) motion causes the matter within the system to contain less energy than it would have contained when sitting still.
 - B) water molecules are constantly increasing in speed over time.
 - C) the first law of thermodynamics does not apply.
 - D) matter, energy, or both are constantly changing their position, amounts, or form.
- 17) A snowball that rolls down a hill, gradually gaining more and more mass and rolling faster and faster as it continues, would be an example of a(n)
- A) positive feedback system.
 - B) negative feedback system.
 - C) open system.
 - D) closed system.
- 18) Which of the following statements is true about the transfer of energy, matter, or momentum in the atmosphere?
- A) Momentum is usually transferred from the surface upward.
 - B) Energy transfer occurs when water changes state between solid, liquid, or gas.
 - C) Matter is transferred so effectively that the spatial distribution of matter in the atmosphere is uniform.
 - D) No transfer of energy, matter, or momentum can occur in the polar part of the atmosphere.
- 19) The hydrologic cycle includes all of the following processes except
- A) evaporation.
 - B) precipitation.
 - C) runoff.
 - D) uplift.

- 20) The most likely and direct consequence of a reduced rate of "burial" of sediment in the rock cycle would be
- A) the delayed rate of formation of rock.
 - B) slower rates of uplift of rocks back to the surface.
 - C) more rapid deposition of more sediment.
 - D) increased rates of rock deformation.
- 21) The cycling of chemical substances throughout the biosphere is accomplished through
- A) vertical transfer of momentum.
 - B) the first law of thermodynamics.
 - C) the rock cycle.
 - D) the work of living things and physical and chemical processes.
- 22) In the rock cycle, sediment is stripped away and transported by the process of _____ after the process of _____ has taken place.
- A) erosion; weathering.
 - B) weathering; erosion.
 - C) uplift; solidification.
 - D) solidification; uplift.
- 23) One of the main roles of plants in biogeochemical cycles is to
- A) reduce the rate of weathering.
 - B) decrease the amount of time that water remains in contact with rocks and soils.
 - C) extract carbon dioxide from the atmosphere.
 - D) harden the soils.
- 24) The most direct example of an atmosphere-lithosphere exchange is
- A) a forest being planted.
 - B) an active coral reef colony.
 - C) a volcanic eruption.
 - D) a wave breaking on a shoreline.
- 25) When the lithosphere and biosphere interact,
- A) plants remove nutrients from the soil but return few if any nutrients to the soil.
 - B) plants return nutrients to the soil but remove few if any nutrients from the soil.
 - C) plants remove nutrients from the soil and return nutrients to the soil.
 - D) plants acquire their nutrients directly from the air so that they do not disturb the nutrient structure in the soil.
- 26) All of the following are likely effects of deforestation except
- A) increased runoff into rivers and streams.
 - B) increased rate of soil erosion.
 - C) increased rate at which carbon dioxide is extracted out of the atmosphere.
 - D) increased rate of destruction of plant and animal habitats.

27) All of the following are typical effects of dam construction except

- A) interruption of the normal seasonal variation in flows of water.
- B) increased amount of sediment carried downstream of the dam.
- C) disruption of natural ecosystems.
- D) protecting towns from flooding.

28) Geographic factors are important when considering environmental issues or when evaluating potential sites for new agricultural area or business because

- A) location and spatial distributions often affect environmental, social, or economic behavior.
- B) the most important environmental issues and the advantages of sites for new agricultural areas or businesses are often the same across space.
- C) environmental policies and zoning regulations seldom consider geographic factors.
- D) it is seldom important to investigate environmental issues or evaluate potential sites from a holistic approach.

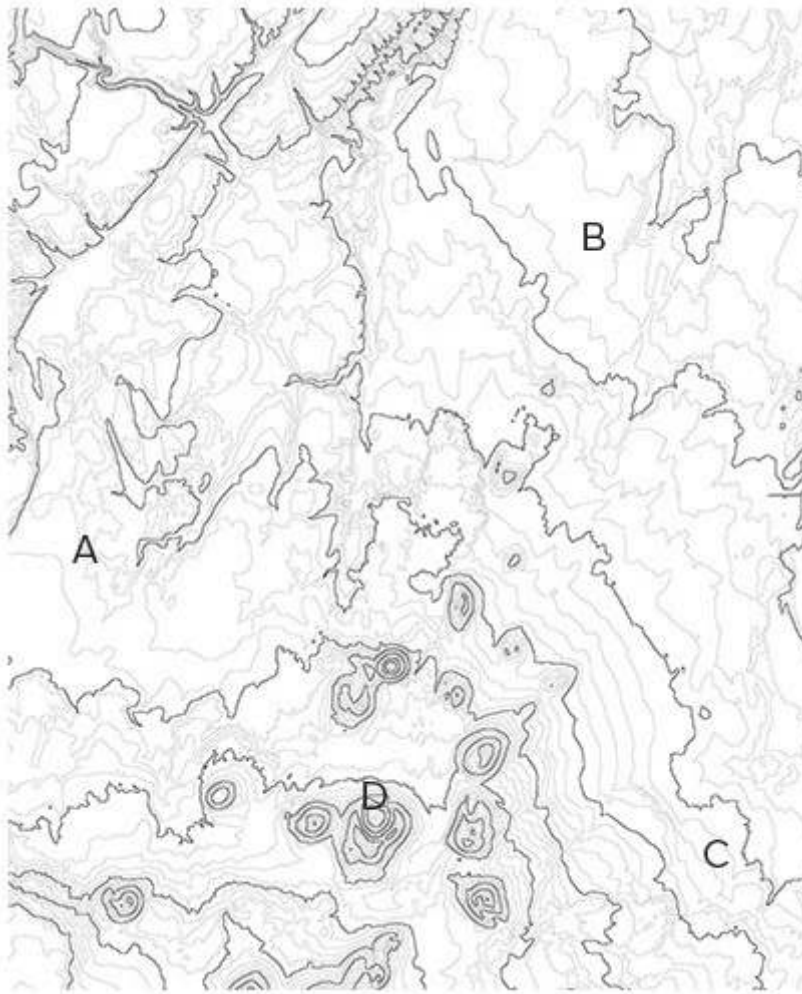
29) Shaded relief maps are most directly helpful in

- A) determining the average annual climatic features across the Earth's surface.
- B) identifying the shape of features of the Earth.
- C) representing the types of features on the surface of the Earth.
- D) "seeing through" the surface of the Earth to the subsurface.

30) Points on a map to the same side of a certain contour on a topographic map will all have

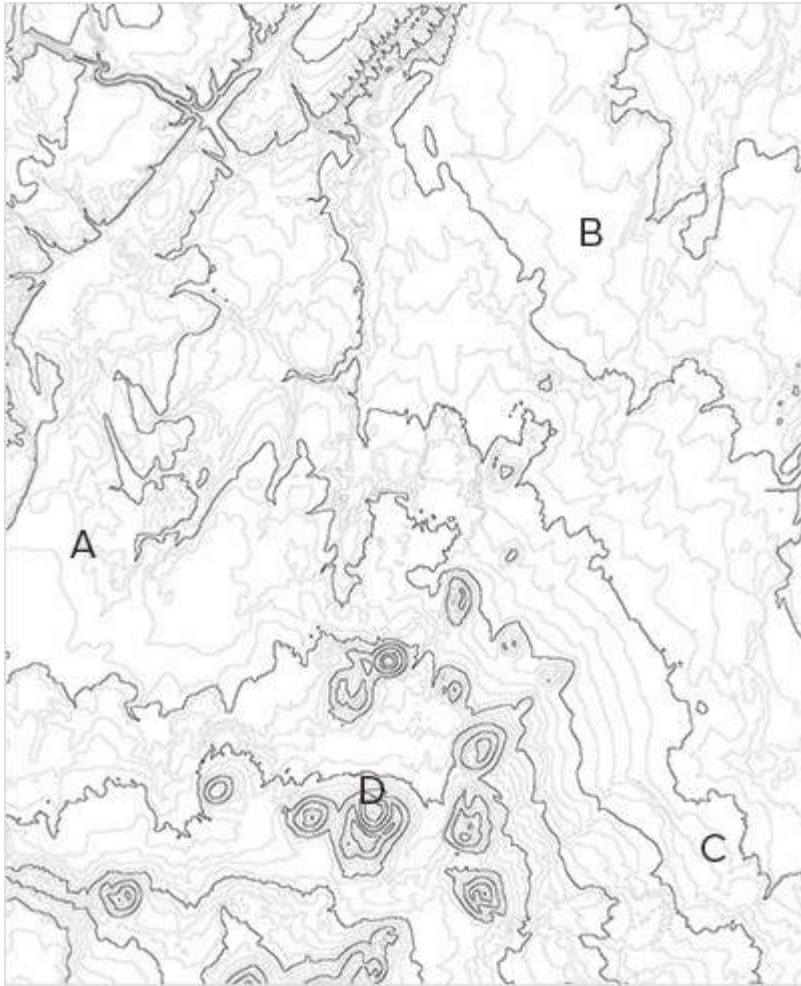
- A) the same mineral composition, unless there is no index contour on the map.
- B) elevations that are all above, or all below, the elevation that the contour represents.
- C) rivers and streams that run parallel to the contour line, while points on the other side of that contour have rivers and streams that do not run parallel to the contour line.
- D) more similar climate than points to the other side of that contour line.

31) In the topographic map below, the place with the greatest relief among the four choices is at



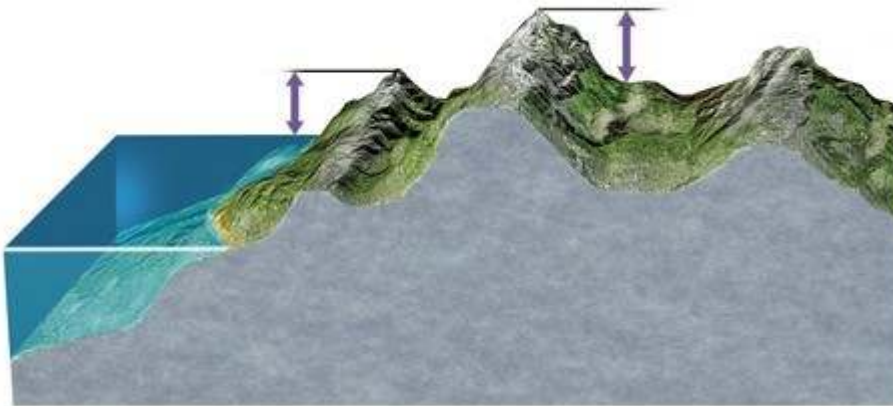
- A) A.
- B) B.
- C) C.
- D) D.

32) The most logical place to build a soccer or football field on the following map would be at



- A) A.
- B) B.
- C) C.
- D) D.

33) In the diagram below, the left arrow represents



- A) elevation and the right arrow represents relief.
- B) relief and the right arrow represents slope.
- C) elevation and the right arrow represents depth.
- D) relief and the right arrow represents elevation.

34) The meanings of elevation and relief imply that

- A) elevation and relief are the same when the location is far inland.
- B) elevation cannot be smaller than relief except when comparing areas below sea level.
- C) relief must always exceed elevation in coastal areas but elevation must always exceed relief in mountainous areas.
- D) the units of measurement of elevation must be different from the units of measurement of relief.

35) A steep slope implies a

- A) weak gradient and closely spaced contours.
- B) steep gradient and closely spaced contours.
- C) weak gradient and widely spaced contours.
- D) steep gradient and widely spaced contours.

36) A gradient of 0.037 implies that

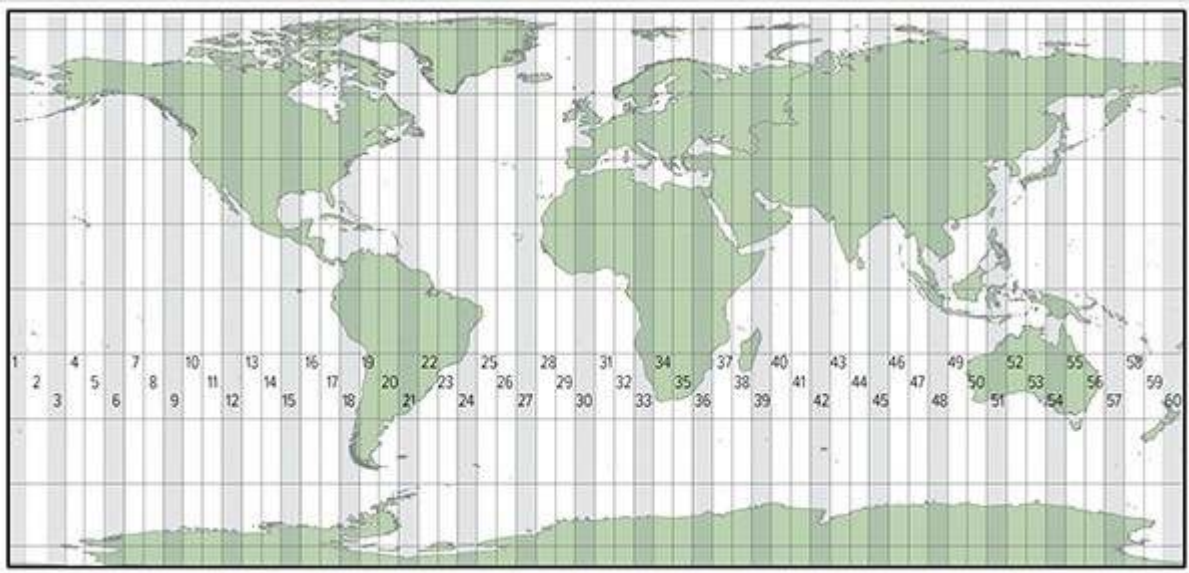
- A) the slope will drop by 37 meters or feet or inches for every 1000 meters or feet or inches of horizontal distance.
- B) there are 0.037 times as many index contours as there are other contours on the map.
- C) the slope is steeper than another location with a gradient of 0.040.
- D) topographic map or shaded-relief map cannot be constructed for the area because the gradient is too small.

37) Which of the following is true of meridians?

- A) Meridians run from east to west.
- B) The highest degree label for meridians is 90°.
- C) Meridians are always parallel to each other.
- D) Meridians always follow great circles.

- 38) The significance of any great circle is that it always
- A) connects two points on the surface of a sphere with the shortest distance.
 - B) follows the same line of latitude.
 - C) passes through the point where the equator intersects with the Prime Meridian.
 - D) passes through the North or South Pole.
- 39) Which of the following is an example of a small circle?
- A) Prime Meridian
 - B) Tropic of Cancer
 - C) Equator
 - D) International Date Line
- 40) If two places have the same latitude but different longitudes,
- A) the two places are directly east or west of each other.
 - B) the two places are directly north or south of each other.
 - C) the places will be directly east or west of each other on some map projections but not others.
 - D) the places will be directly north or south of each other on some map projections but not others.
- 41) 0° of latitude is found at the _____, and 90° of latitude is found at the _____.
- A) South Pole; North Pole
 - B) South Pole; Equator
 - C) Equator; North Pole
 - D) North Pole; Prime Meridian
- 42) The Prime Meridian separates
- A) great circles from small circles.
 - B) the Northern Hemisphere from the Southern Hemisphere.
 - C) the Eastern Hemisphere from the Western Hemisphere.
 - D) places experiencing one day on the calendar from places experiencing another day on the calendar.
- 43) The number of degrees of longitude that a place has is derived from the angle formed by the place's location on the Earth surface,
- A) the center of the Earth at the same latitude, and the North Pole (if in the Northern Hemisphere) or South Pole (if in the Southern Hemisphere).
 - B) the center of the Earth, and the equator.
 - C) the center of the Earth at the same latitude, and the Prime Meridian at the same latitude.
 - D) the center of the Earth at the same latitude, and the International Date Line at the same latitude.

44) The map below shows zone numbers associated with which coordinate system?



- A) Universal Transverse Mercator
- B) State Plane Coordinate System
- C) Public Land Survey System

45) Which of the following coordinate systems is used outside of the United States?

- A) Universal Transverse Mercator
- B) State Plane Coordinate System
- C) Public Land Survey System
- D) All of these are used outside of the United States.

46) In the State Plane Coordinate System, the rationale for dividing states into long, narrow zones is to

- A) keep major highways in the same zone.
- B) put as many as possible of the state's cities in the same zone while keeping rural areas in different zones.
- C) ensure that each zone falls into one and only one time zone.
- D) minimize the distortion in drawing maps of the area.

47) The Public Land Survey System (PLSS) is not employed in states where

- A) large rivers or lakes interrupt the rectangular pattern of townships.
- B) settlement by the French resulted in different survey systems that predated the PLSS.
- C) mountains and other rugged terrain made it too difficult to survey the land.
- D) there is little publicly owned land.

48) In the Public Land Survey System (PLSS), beginning at the Principal Meridian, the land is subdivided into six-mile-wide, north-south strips of land called _____; beginning at the Base Line, the land is subdivided into six-mile-wide, east-west strips of land called _____.

- A) northings; eastings
- B) eastings; northings
- C) townships; ranges
- D) ranges; townships

49) In the Public Land Survey System (PLSS), a township labeled T3N, R1W would indicate that it is

- A) a one-mile by one-mile tract of land that is three townships north of the nearest base line and one range west of the nearest principal meridian.
- B) a one-mile by one-mile tract of land that is three townships north of the nearest principal meridian and one range west of the nearest base line.
- C) a six-mile by six-mile tract of land that is three townships north of the nearest base line and one range west of the nearest principal meridian.
- D) a six-mile by six-mile tract of land that is three townships north of the nearest principal meridian and one range west of the nearest base line.

50) All map projections introduce at least some distortion because

- A) it is impossible to represent a three-dimensional surface on a two-dimensional plane perfectly.
- B) the best mathematical algorithms used in map projections have not been discovered yet.
- C) the Earth is not a perfect sphere.
- D) the Earth's orbit around the Sun is not perfectly circular.

51) An important strategy in choosing the correct map projection should always be to

- A) decide whether it is more important to show area of features or shape of features accurately.
- B) minimize distortion in the part of the map that is most important for the application at hand.
- C) determine whether distortion needs to be minimized at a single point on the map or along a linear area of the map.
- D) All of these are important strategies in choosing the correct map projection.

52) A conformal map projection is one that

- A) is based on the idea of projecting the image on all or part of the globe onto a cone.
- B) preserves (i.e., does not distort) the shapes of features, like countries or continents.
- C) preserves (i.e., does not distort) the area of features, like countries or continents.
- D) allows only a hemisphere or less of the Earth's surface to be shown on a map.

53) Sinusoidal projections operate based on the premise that

- A) distortion should be minimized in polar areas and maximized in equatorial areas.
- B) the map can be interrupted in areas that are not important to show on a particular map and distortion can be minimized in areas that are more important to show accurately.
- C) parallels of latitude and meridians of longitude should intersect at right angles.
- D) the globe is projected onto a cone, with minimized distortion along the arc or arcs where the cone intersects with the globe.

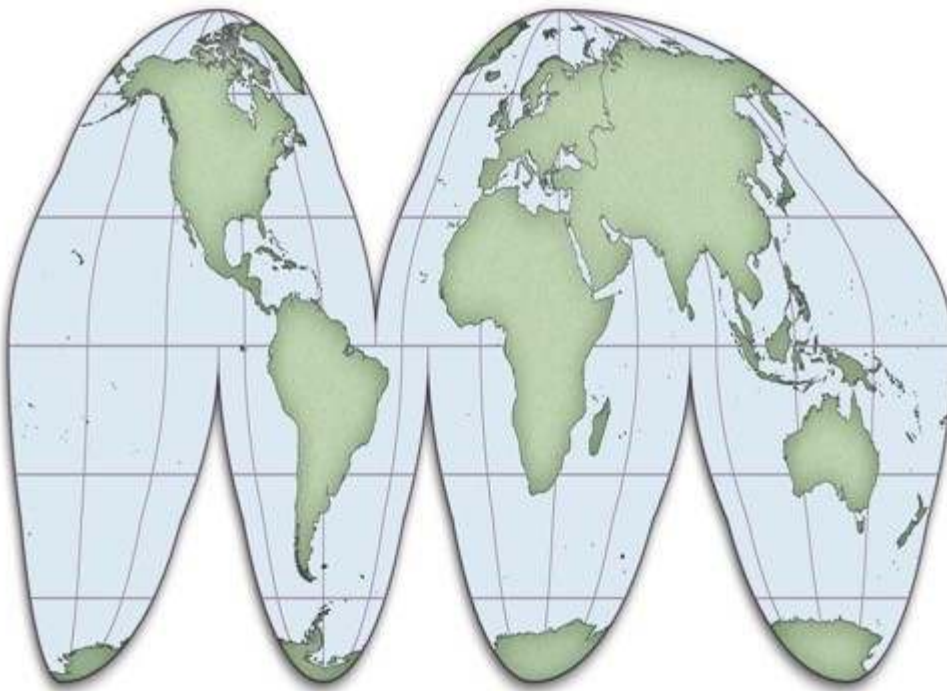
54) If you need to show the entire Earth on a map, which of the following projections would not be a possibility?

- A) Mercator
- B) Sinusoidal
- C) Polar stereographic
- D) Robinson

55) Which of these types of map projections has only a single point at which no distortion is introduced?

- A) cylindrical
- B) sinusoidal
- C) conical
- D) planar

56) The map below uses what type of map projection?



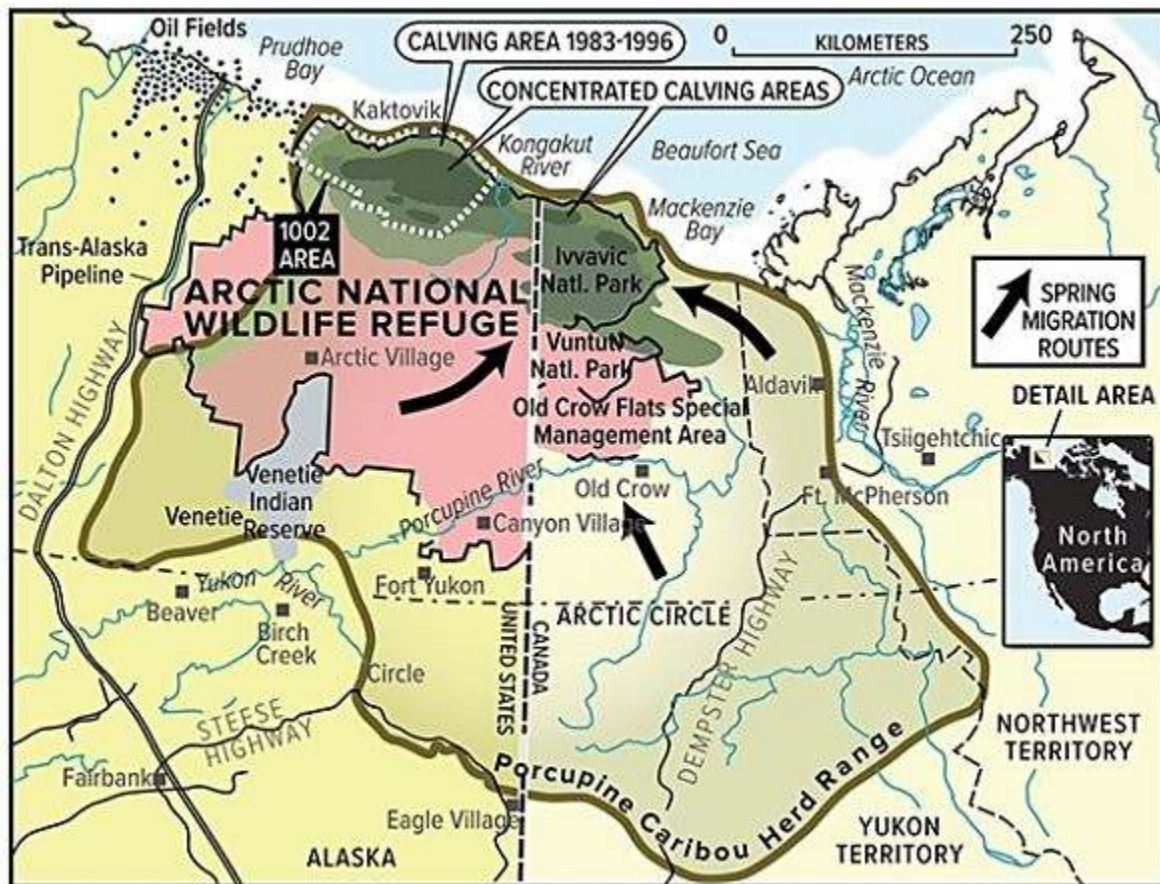
- A) Cylindrical
- B) Sinusoidal
- C) Conical
- D) Planar

57) The detailed roads of a very small area, such as your neighborhood, would need to be shown on a map at what scale?

- A) Large
- B) Small

- 58) The use of stereopairs is important in creating maps because they
- A) allow the scale to become smaller.
 - B) remove the distortions introduced by the map projection.
 - C) reveal the three-dimensional features of a landscape.
 - D) penetrate through the clouds that may have been present on the day when the aerial photograph was taken.
- 59) Base maps are useful because they
- A) contain no distortions introduced by the map projection.
 - B) do not require stereopairs for their construction.
 - C) avoid using Goode's projection.
 - D) allow for the reporting of primary data on them.
- 60) Maps are secondary data sources when
- A) they are used to provide an interpretation for addressing some other question.
 - B) they have undergone two or more revisions in order to enhance their accuracy.
 - C) they express coordinates not only in latitude-longitude but also in at least one other survey system.
 - D) they are available in both paper and online formats.

61) On the map below, all of the following would be considered "interpretations" except



- A) spring migration routes.
- B) Ivvavik National Park.
- C) concentrated calving areas.
- D) porcupine caribou herd range.

62) Global positioning systems (GPS) can "know" their location by

- A) measuring the time required for radio signals from four or more satellites to reach the receiver.
- B) relating changes in detected radiation to changes in the position of the Sun.
- C) continually measuring changes in angle to a stationary reference point, such as a streetlight, in the area of the receiver.
- D) relating slight changes in magnetism and gravity to changes in the distance and direction of movement from the point at which the location of the receiver was last calibrated.

63) Differential global positioning system (GPS) would be more useful than a handheld GPS when

- A) portability and mobility is important.
- B) the system is used in an isolated location far from a cellular telephone signal.
- C) extremely precise measurements are needed.
- D) two or more measurements are being taken simultaneously.

- 64) The difference between active and passive remote sensing systems is that
- A) active systems involve the latest generation of satellites while passive systems use signals from older satellites.
 - B) active systems include aerial photography while passive systems rely on satellite imagery.
 - C) active systems can operate throughout cloud or fog cover while passive systems require clear sky conditions.
 - D) active systems emit their own energy while passive systems simply detect existing energy signals.
- 65) Multispectral remote sensing refers to
- A) returning to the same site many times to analyze changes in the environment over time.
 - B) the use of many different types of satellites to detect environmental features at a place.
 - C) detecting energy at many wavelength bands of energy simultaneously.
 - D) the detection of features across a large part of Earth's surface at the same time.
- 66) If a researcher wanted to identify and map healthy vegetation using remote sensing, she would most likely use. Data that detects what type of energy?
- A) Microwave
 - B) Near-infrared
 - C) Sonar
 - D) Thermal infrared
- 67) The concept of overlay in geographic information systems (GIS) refers to the
- A) incorporation of multiple types of digital spatial data (maps) in answering research questions.
 - B) constant, automatic updating of digital spatial data (maps) of the same type with newer data.
 - C) use of digital spatial data (maps) to identify what lies deep beneath the Earth's surface.
 - D) inclusion of a grid (such as latitude-longitude or universal Transverse Mercator) on a digital spatial dataset (map).
- 68) Which of the following is not a type of spatial distribution that can be assessed using geographic information systems (GIS)?
- A) Clustered
 - B) Random
 - C) Regular
 - D) Irregular
- 69) The spatial interpolation features of a geographic information system (GIS) would be most useful when a researcher needs to
- A) detect energy at a wavelength that is not detected directly by an existing satellite.
 - B) estimate data at a particular point where it has not been measured.
 - C) use a large-scale map but only a small-scale map of the area of interest is available.
 - D) identify the optimal route through an area.

- 70) If a geographer wanted to use a geographic information system (GIS) to study soil contamination and determined that only the areas within 1.5 kilometers of a toxic waste dump needed to be considered and mapped, he/she would most likely choose. Which type of GIS function?
- A) Buffering
 - B) Kriging
 - C) Area calculation
 - D) Point-pattern analysis
- 71) Greenwich mean time (GMT) is a system of
- A) coordinating rules for what time should appear on a clock, around the world.
 - B) determining what years should be considered leap years and which should not.
 - C) identifying the phase of the lunar cycle.
 - D) determining when daylight savings time should go into effect.
- 72) If it is 9:00 a.m. in your time zone, two time zones west of you the clock will say
- A) 7:00 a.m.
 - B) 11:00 a.m.
- 73) The purpose of Daylight Savings Time is to
- A) allow an extra hour per day for crops to grow during the growing season, at the expense of an hour per day when crops are not in the ground.
 - B) provide an extra hour of daylight in the evening hours, to conserve energy, at the expense of an hour of daylight in the morning hours.
 - C) adjust for variations in the speed of Earth's orbit around the Sun at different times of the year.
 - D) allow the Greenwich Mean Time system to represent the actual position of the Sun in the sky more accurately.
- 74) Rates in the Earth system
- A) span the range from very rapid to very slow.
 - B) are nearly always very slow.
 - C) are nearly always very fast.
 - D) can never be calculated accurately.
- 75) Which of the following was mentioned in the opening two-page spread of Chapter 1 (The Nature of Physical Geography)?
- A) Volcanoes
 - B) Earthquakes
 - C) Climate
 - D) Water
 - E) All of these choices are correct

- 76) One of the main topics discussed in the opening two-page spread of Chapter 1 (The Nature of Physical Geography) was
- A) the relevance of geography in our modern world.
 - B) that volcanoes have dramatically changed the atmosphere over time.
 - C) a huge meteorite impact caused the dinosaurs to become extinct.
 - D) All of these choices are correct
- 77) What type of geographers concentrate on studying landforms and processes on Earth's surface, in the oceans, and in the atmosphere, and how they affect life?
- A) Human geographers
 - B) Physical geographers
 - C) Religious geographers
 - D) Historical geographers
- 78) What type of data did geographers use to determine and study the location and movement of the Deepwater Horizon oil spill in 2010?
- A) Satellite images
 - B) Topographic maps
 - C) Shaded relief maps
 - D) Microwave images
- 79) What was the most important factor in predicting how the 2010 Deepwater Horizon oil spill would travel?
- A) Density of the oil
 - B) Patterns of oceanic and atmospheric circulation
 - C) Thickness of the spill
 - D) Ocean floor bathymetry
- 80) How does spilled oil, such as that in the 2010 Deepwater Horizon spill, affect oceanic organisms?
- A) The type of bacteria that consumes oil thrives
 - B) Animals that ingest oil become ill or die
 - C) Shallow ocean plants are harmed when the oil blocks incoming sunlight
 - D) All of these choices are correct
- 81) What was the focus of the Chapter 1 Investigation?
- A) The effects of rising sea level due to climate change
 - B) The effects of melting glaciers due to climate change
 - C) How air pollution can cause climate change
 - D) The impacts of deforestation of the land
 - E) All of these choices are correct

82) Which of the following were factors to consider in the Chapter 1 Investigation?

- A) Wind directions
- B) How much sunlight reaches the ground
- C) Type of rocks, sediment, and soil
- D) Streams, lakes, and glaciers
- E) All of these choices are correct

83) Which of the following factors were mentioned in the Chapter 1 Investigation regarding slopes?

- A) Steepness of slopes
- B) Vegetation on a slope
- C) Erosion on a slope
- D) All of these choices are correct

84) Which of the following was NOT shown in the figure accompanying the Chapter 1 Investigation?

- A) Snow-covered mountains
- B) A coastline
- C) Ocean current flowing parallel to the coast
- D) A city
- E) Destruction caused by a tornado