

# Mapping Our World

## Section 2.1 Latitude and Longitude

Using your notes, look up about latitude and longitude.

Match the definition in Column A with the term in Column B.

### Column A

### Column B

- \_\_\_\_\_ 1. Science of mapmaking
- \_\_\_\_\_ 2. Imaginary line that separates Earth into northern and southern hemispheres
- \_\_\_\_\_ 3. Distance in degrees north or south of the equator
- \_\_\_\_\_ 4. Distance in degrees east or west of the prime meridian
- \_\_\_\_\_ 5. Reference point for longitude that passes through Greenwich, England, and represents 0°

- A) Prime Meridian
- B) Longitude
- C) Cartography
- D) Equator
- E) Latitude

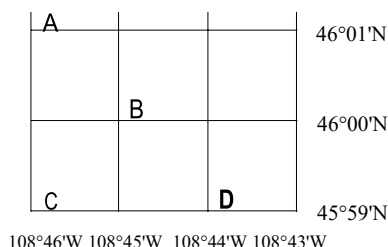
In the space at the left, circle "A"; if the statement is true; if the statement is false, circle "B" the *italicized word or phrase* to make it true.

- |   |   |  |
|---|---|--|
| A | B | 6) The equator is located halfway between the north pole and the <i>prime meridian</i>           |
| A | B | 7) Lines of <i>latitude</i> run parallel to the equator  |
| A | B | 8) The equator is at <i>180°</i> latitude.   |
| A | B | 9) The south pole is at 90° south <i>longitude</i> .   |
| A | B | 10) <i>One degree</i> of latitude is equivalent to about 111km on Earth's surface                |
| A | B | 11) Each degree of latitude is divided into <i>360 minutes</i>                                   |
| A | B | 12) Lines of longitude are also called <i>meridians</i> .  |
| A | B | 13) The prime meridian is the reference line for <i>latitude</i> .                               |
| A | B | 14) Points east of the prime meridian are located between <i>0° and 180°</i> east longitude.     |
| A | B | 15) Lines of longitude are <i>semicircles</i> that extend from the north pole to the south pole. |
| A | B | 16) Each degree of longitude corresponds to about 111km at the <i>north pole</i> .               |
| A | B | 17) All meridians converge at the <i>poles</i>   |

**SECTION 2.1    *Latitude and Longitude, continued***

*Using your notes, review the section about locating places with coordinates.*

Use the map grid to answer the following questions.



18. What is the latitude of Point A?
  - a. 46° 01' N
  - b. 108° 46' W
  - c. 108° 44' W
  - d. 45° 59' N
19. Which two points have the same latitude & What is that latitude?
  - a. Points A & C with Latitude 108° 46' W
  - b. Points C & D with Latitude 45° 59' N
  - c. Points B & C with Latitude 46° 00' N
  - d. Points A & D with Latitude 108° 44' W
20. What is the longitude of point B?
  - a. 46° 00' N
  - b. 108° 45' W
  - c. Neither A nor B is correct
21. Which two points have the same longitude? What is that longitude?
  - a. Points A & C with Latitude 108° 46' W
  - b. Points C & D with Latitude 45° 59' N
  - c. Points B & C with Latitude 46° 00' N
  - d. Points A & D with Latitude 108° 44' W
22. What are the coordinates of point C?
  - a. 45° 59' N; 108° 46' W
  - b. 108° 44' W; 45° 59' N
  - c. Neither A nor B is correct

*Using your notes, review the section about time zones.*

***Circle the letter of the choice that best completes the statement or answers the question.***

23. Into how many time zones is Earth divided?
 

a. 12	c. 60
b. 24	d. 360
24. Approximately how wide is each time zone?
 

a. 15°	c. 60°
b. 30°	d. 180°
25. The International Date Line is located at the
 

a. 0° line of latitude	c. 0° meridian
b. 180° line of latitude	d. 180° meridian
26. When you travel east across the International Date Line, you
 

a. advance your calendar one day	c. move your calendar back one day
b. advance your calendar 12 hours	d. move your calendar back 12 hours

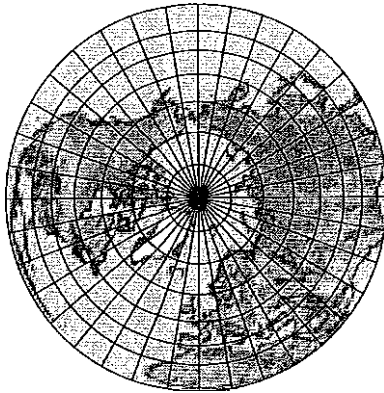
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## Section 2.2 Types of Maps

Using your notes, review the section about Mercator, conic, and gnomonic projections.

SELECT which map projection is (A) Conic, (B) Gnomonic or (C) Mercator.

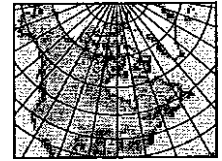
Picture #27



Picture #28



Picture #29



27. (A) Conic, (B) Gnomonic or (C) Mercator

28. (A) Conic, (B) Gnomonic or (C) Mercator

29. (A) Conic, (B) Gnomonic or (C) Mercator

SELECT either (A) Mercator (B) Conic, or (C) Gnomonic for each description.

A) Mercator (B) Conic (C) Gnomonic

30. Used as road and weather maps

A) Mercator (B) Conic (C) Gnomonic

31. Has parallel lines of latitude and longitude

A) Mercator (B) Conic (C) Gnomonic

32. Made by projecting points and lines from a globe onto a piece of paper that touches the globe at a single point

A) Mercator (B) Conic (C) Gnomonic

33. Distorts direction and distance between landmasses

A) Mercator (B) Conic (C) Gnomonic

34. Exaggerates the areas landmasses near the poles, but correctly shows their shape

A) Mercator (B) Conic (C) Gnomonic

35. Made by projecting points and lines from a globe onto a cone

A) Mercator (B) Conic (C) Gnomonic

36. Has very little distortion in the areas or shapes of landmasses that fall along a certain line of latitude

A) Mercator (B) Conic (C) Gnomonic

37. Used by navigators to plot straight routes for planes and ships

**CHAPTER****2****STUDY GUIDE****SECTION 2.2 Types of Maps, continued**

*In your textbook, read about topographic maps and contour lines.*

Use each of the terms below just once to complete the passage.

**A)** Contour interval

**C)** hachures

**E)** topographic maps

**B)** Contour lines

**D)** index contours

Maps that show changes in elevation of Earth's surface are called **(38)** \_\_\_\_\_. On this kind of map, points of equal elevation are connected by **(39)** \_\_\_\_\_. The difference in elevation between two side-by-side contour lines is called the **(40)** \_\_\_\_\_. Contour lines whose elevation is marked by a number on the map are known as **(41)** \_\_\_\_\_. Contour lines that indicate depressions have **(42)** \_\_\_\_\_, or short lines at right angles to the contour lines.

The contour interval on the map below is 20 m.

Use the contour map to answer the following questions.

43) Which of the labeled points on the map has the highest elevation?

- a) A
- b) B
- c) C
- d) D

44) What is the elevation of the highest labeled point?

- a) 400 m
- b) 480 m
- c) 500 m
- d) 520 m

45) Which of the labeled points on the map has the lowest elevation?

- a) A
- b) B
- c) C
- d) D
- e) E

46) What is the elevation of the lowest labeled point?

- a) 320 m
- b) 340 m
- c) 400 m
- d) 500 m



SECTION 2.2 *Types of Maps, continued*

Using your notes, read about map legends and map scales.

Use each of the terms below to complete the following statements.

A. Fractional scale

B. Graphic scale

C. Map legend

D. Map scale

E. verbal scale

47) A\_\_\_explains what the symbols on a map represent.

48) To measure distances on a map, you need to use the \_\_\_\_\_ of which there are three types.

49) A\_\_\_expresses distance as a statement, such as one centimeter is equal to one kilometer.

50) A\_\_\_consists of a line that represents a certain unit of distance, such as 5km.

51) A\_\_\_expresses distance as a ratio, such as 1:63,500.

The map and map legend below have been reduced to fit this space. Use the map and the map legend to answer the following questions.

52) Which city on the map is closest to a campground?

- a) Centerville
- b) Day City
- c) Oak Hills

53) Which highway leads to a skiing area?

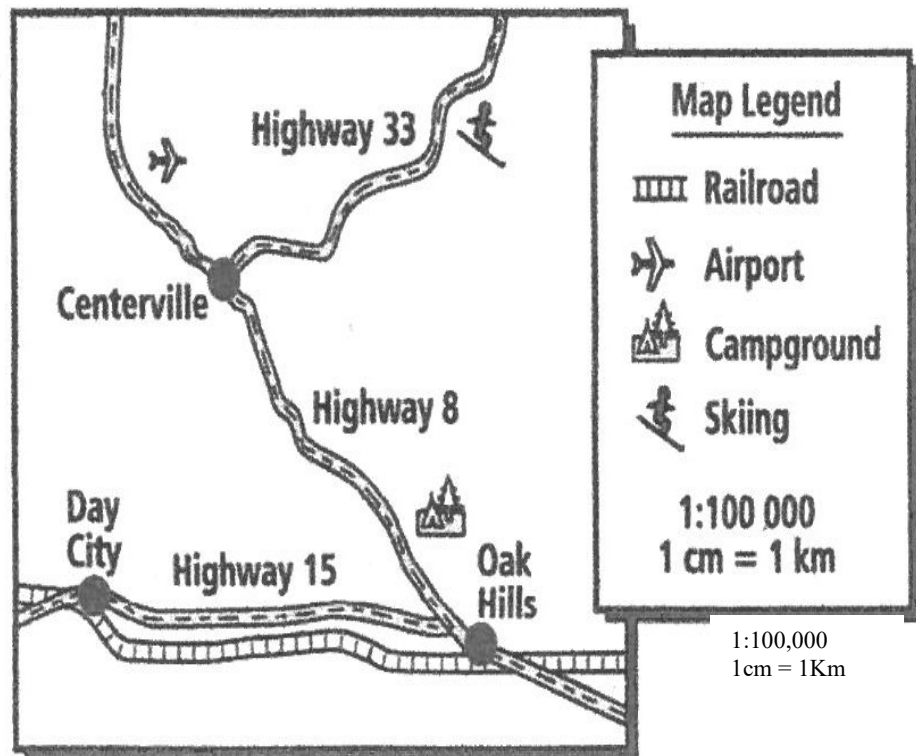
- a) Highway 8
- b) Highway 15
- c) Highway 33

54) Which city is NOT connected by railroad?

- a) Centerville
- b) Day City
- c) Oak Hills

55) Look at the verbal scale. If the distance from Centerville to Oak Hills is 10 km, how far apart should these cities be on the map?

- a) 1 Km
- b) 10,000,000 cm
- c) 10 cm
- d) 0.000001 cm



**section 2.3 Remote Sensing**

Using your notes, read about the electromagnetic spectrum.

Circle the letter of the choice that best completes the statement or answers the question.

- 56) What is the process of data gathering that uses instruments on satellites, aircraft, or ships?
- a) Geologic mapping
  - b) sonar
  - c) radar
  - d) remote sensing
- 57) Maps of the ocean floor made by Sea Beam technology rely on
- a) Visible light
  - b) sonar
  - c) radar
  - d) infrared radiation
- 58) What technology uses detectors on satellites to measure the energy intensity of different parts of Earth surface to make maps?
- a) Sea Beam
  - b) TOPEX/Poseidon
  - c) Landsat
  - d) Global Positioning System
- 59) To make detailed maps of the ocean surface, scientists use what technology?
- a) The Landsat satellites
  - b) TOPEX/Poseidon satellite
  - c) SeaBeam
  - d) Geographic Information System
- 60) What technology uses databases to make several map layers?
- a) Geographic Information System
  - b) Global Positioning System
  - c) Landsat satellite
  - d) TOPEX/Poseidon satellite
- 61) What would you use to accurately find your location in a forest?
- a) Landsat satellite
  - b) SeaBeam
  - c) Global Positioning System
  - d) Geographic Information System

Write the name of the remote sensing device-Landsat, *Topex/Poseidon*, or GPS- for each description.

- |                                       |   |
|---------------------------------------|---|
| A ) Landsat B) Topex/Poseidon C ) GPS | 62) Uses a system of 27 satellites that transmit microwaves                                 |
| A ) Landsat B) Topex/Poseidon C ) GPS | 63) Uses radar to map features, such as mountains and valleys, that are on the ocean floor. |
| A ) Landsat B) Topex/Poseidon C ) GPS | 64) Uses a handheld receiver to help people determine their exact position on Earth         |
| A ) Landsat B) Topex/Poseidon C ) GPS | 65) Creates images that show surface features as different colors                           |
| A ) Landsat B) Topex/Poseidon C ) GPS | 66) Used for ship and airplane navigation   |
| A ) Landsat B) Topex/Poseidon C ) GPS | 67) Picks up bulges and depressions in ocean water  |