

# Chapter 3 Review

## Key Terms

- cartography (46)
- conic projection (47)
- contour interval (51)
- contour line (50)
- depression contour (55)
- elevation (50)
- geomagnetic pole (45)
- gnomonic projection (47)
- great circle (44)
- index contour (53)
- latitude (43)
- legend (48)
- longitude (44)
- magnetic declination (45)
- map projection (46)
- mean sea level (50)
- Mercator projection (47)
- meridian (43)
- parallel (43)
- polyconic projection (48)
- prime meridian (44)
- relief (51)
- scale (49)
- topographic map (50)
- topography (50)
- true north (45)

## Key Concepts

Latitude and longitude are a system of intersecting circles used to locate places on the earth's surface. **See page 43.**

Parallels of latitude run east-west around the earth. Meridians of longitude run north-south from pole to pole. **See page 43.**

Because of the earth's magnetic properties, a magnetic compass can be used to find directions on the earth. **See page 45.**

Three common map projections are the Mercator, gnomonic, and conic projections. Each has certain advantages and disadvantages. **See page 46.**

Map scale is used to find distances on a map. **See page 49.**

Contour lines can be used to show topography on a map. **See page 50.**

The spacing and direction of contour lines on a topographic map indicate the shapes of landforms. **See page 50.**

## Review

On your own paper, write the letter of the term that best completes each of the following statements.


1. A point whose latitude is  $0^\circ$  is located on the  
a. North Pole.    b. South Pole.    c. equator.    d. prime meridian.
2. One degree of latitude equals  
a.  $\frac{1}{90}$  the earth's circumference.  
b.  $\frac{1}{100}$  the earth's circumference.  
c.  $\frac{1}{360}$  the earth's circumference.  
d.  $\frac{1}{720}$  the earth's circumference.
3. A point whose longitude is  $0^\circ$  is located on the  
a. North Pole.    b. South Pole.    c. equator.    d. prime meridian.
4. A point halfway between the equator and the South Pole has a latitude of  
a.  $45^\circ$  N.    b.  $45^\circ$  S.    c.  $45^\circ$  E.    d.  $45^\circ$  W.
5. The distance in degrees east or west of the prime meridian is  
a. latitude.    b. longitude.    c. declination.    d. projection.
6. The distance covered by a degree of longitude  
a. is  $\frac{1}{180}$  the earth's circumference.  
b. is  $\frac{1}{360}$  the earth's circumference.  
c. increases as you approach the poles.  
d. decreases as you approach the poles.
7. The needle of a magnetic compass points toward the  
a. geomagnetic pole.    b. geographic pole.  
c. parallels.    d. meridians.



8. In the Northern Hemisphere, a declination of  $10^\circ$  E indicates that the compass needle points  $10^\circ$  east of the
  - a. geomagnetic North Pole.
  - b. geographic North Pole.
  - c. equator.
  - d. prime meridian.
9. On a Mercator projection, distortion is greatest near the
  - a. poles.
  - b. great circles.
  - c. meridians.
  - d. parallels.
10. Compass directions are shown as straight lines on a
  - a. gnomonic projection.
  - b. conic projection.
  - c. Mercator projection.
  - d. polyconic projection.
11. The shortest distance between any two points on the globe is along
  - a. the equator.
  - b. a line of latitude.
  - c. the prime meridian.
  - d. a great circle.
12. A navigator can find the shortest distance between two points by drawing a straight line between any two points on a
  - a. Mercator projection.
  - b. gnomonic projection.
  - c. conic projection.
  - d. polyconic projection.
13. The relationship between distance on a map and actual distance on the earth is called the
  - a. legend.
  - b. scale.
  - c. elevation.
  - d. relief.
14. If 1 m on a map equals 1 km on the earth, the fractional scale would be written
  - a. 1:1.
  - b. 1:10.
  - c. 1:100.
  - d. 1:1,000.
15. On a topographic map, elevation is shown by means of
  - a. great circles.
  - b. contour lines.
  - c. verbal scale.
  - d. fractional scale.
16. Closely spaced contour lines indicate a
  - a. gradual slope.
  - b. flat area.
  - c. steep slope.
  - d. valley.

## Critical Thinking

On your own paper, write answers to the following questions.

1. What is wrong with the following locations:  $135^\circ$  N,  $185^\circ$  E?
2. As you move from point A to point B in the Northern Hemisphere, the length of a degree of longitude progressively decreases. In which direction are you moving?
3. Imagine you are at a location where the magnetic declination is  $0^\circ$ . Describe your position in relation to magnetic north and true north.
4. You examine a topographic map on which the contour interval is 100 m. In general, what type of terrain is shown on the map?
5.  Selecting from the list of new terms on the previous page, which one term would most likely be found at the top of a concept map designed for this chapter? Explain.

## Application

1. One expedition is preparing to explore the South Pole; another is preparing to explore the equator. To which expedition would you recommend the Mercator projection? Explain why.
2. A cartographer has to draw one map for use in three different countries that do not share a common unit of measure. Which type of scale should this map maker use? Why?
3. You are using a topographic map to plan a hike. Along path A, the contour lines are widely spaced. Along path B, the contour lines are almost touching. Which path would probably be easier and safer? Why?
4. How could you use contour lines on a topographic map to help you locate the source of a river?

## Extension

1. Do some research on the navigation instrument known as the sextant. Make a diagram explaining how the sextant can be used to determine latitude.
2. On a piece of unlined paper, draw an estimated topographic map of an area near your school or home. If possible, choose an area that includes various surface features, such as hills, cliffs, or a river. Be sure to use the correct colors for the features on your map. Refer to the chart of symbols on page 52.