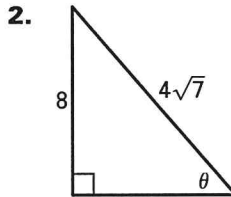
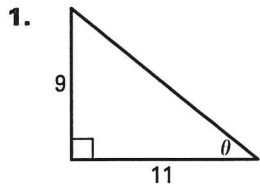


LESSON
9.1

Practice C

For use with the lesson "Use Trigonometry with Right Triangles"

Evaluate the six trigonometric functions of the angle θ .



Let θ be an acute angle of a right triangle. Find the value of the other five trigonometric functions of θ .

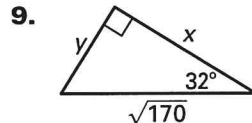
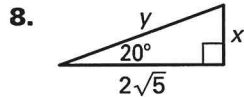
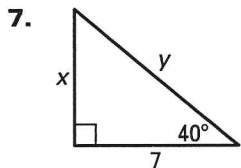
3. $\sin \theta = \frac{\sqrt{2}}{4}$

4. $\cos \theta = \frac{\sqrt{5}}{4}$

5. $\tan \theta = \frac{1}{6}$

6. $\csc \theta = \frac{14}{5}$

Find the values of x and y . Round your answers to two decimal places.

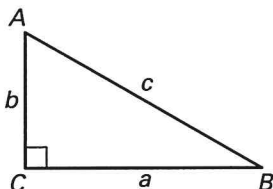


Solve $\triangle ABC$ using the diagram and the given measurements.

10. $A = 39^\circ, c = \sqrt{17}$

11. $B = 54^\circ, a = 4\sqrt{2}$

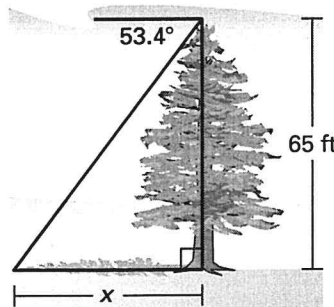
12. $A = 27^\circ, b = 1$



13. **Height** The sun casts a shadow of a man on the ground that is 5.45 feet long. The angle of elevation is 50° . What is the approximate height of the man?



14. **Angle of Depression** The sun casts a shadow of a pine tree on the ground. The tree is 65 feet tall. The angle of depression is 53.4° . Estimate the length of the shadow.

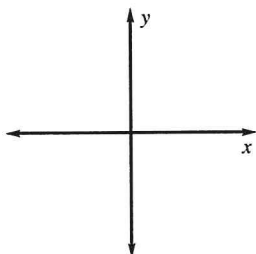


LESSON
9.2**Practice C**

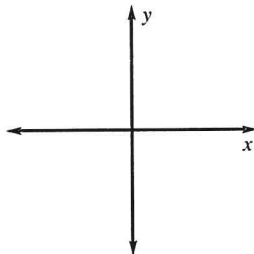
For use with the lesson "Define General Angles and Use Radian Measure"

Draw an angle with the given measure in standard position.

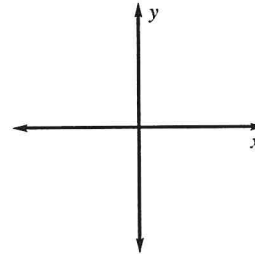
1. 260°



2. $\frac{8\pi}{5}$



3. $-\frac{9\pi}{4}$

**Find one positive angle and one negative angle that are coterminal with the given angle.**

4. 155°

5. -325°

6. $-\frac{11\pi}{5}$

7. $\frac{15\pi}{7}$

Convert the degree measure to radians or the radian measure to degrees.

8. 80°

9. -128°

10. $\frac{3\pi}{10}$

11. $-\frac{16\pi}{3}$

Find the arc length and area of a sector with the given radius r and central angle θ .

12. $r = 12$ in., $\theta = \frac{3\pi}{4}$

13. $r = 16.2$ m, $\theta = 100^\circ$

14. $r = 14.5$ ft, $\theta = 320^\circ$

Evaluate the trigonometric function using a calculator if necessary. If possible, give an exact answer.

15. $\sin \pi$

16. $\cos \frac{2\pi}{9}$

17. $\tan \frac{3\pi}{4}$

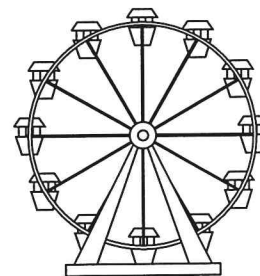
18. $\csc \frac{7\pi}{9}$

19. **Earth** Assuming that Earth is a sphere having a diameter of 8000 miles, what is the distance between city A and city B in the figure shown if C is the center and the central angle is 90° ?

**In Exercises 20–22, use the following information.**

Ferris Wheel The Ferris wheel in the figure shown has twelve seats. During the loading cycle of all twelve seats, you are loaded in the third position.

20. What is the central angle between each seat?
21. What is the angle through which you rotate during the loading cycle?
22. After the loading cycle, the Ferris wheel makes exactly twenty rotations. In what position (1st, 2nd, . . .) will you be unloaded?



LESSON
9.3**Practice C***For use with the lesson "Evaluate Trigonometric Functions of Any Angle"*

Use the given point on the terminal side of an angle θ in standard position to evaluate the six trigonometric functions of θ .

1. $(-7, -5)$

2. $(\sqrt{11}, -3)$

Evaluate the six trigonometric functions of θ .

3. $\theta = 990^\circ$

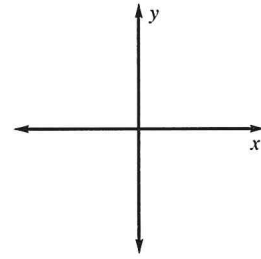
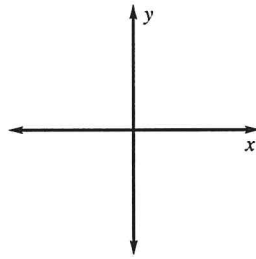
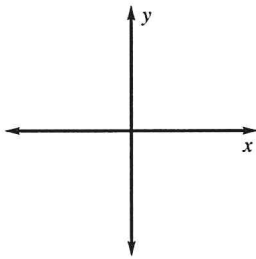
4. $\theta = 8\pi$

Sketch the angle. Then find its reference angle.

5. 159°

6. 310°

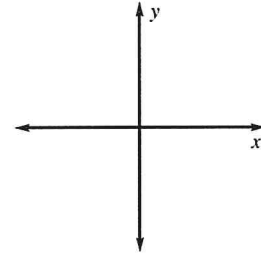
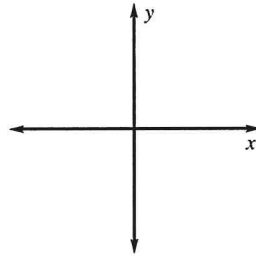
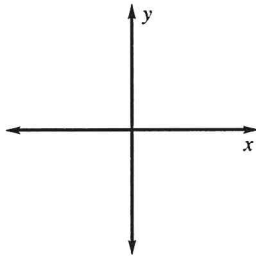
7. -195°



8. $\frac{13\pi}{4}$

9. $-\frac{8\pi}{3}$

10. $-\frac{17\pi}{5}$



Evaluate the function without using a calculator.

11. $\sec 210^\circ$

12. $\tan 330^\circ$

13. $\cos(-135^\circ)$

14. $\cot(-270^\circ)$

15. $\cot \frac{7\pi}{3}$

16. $\csc \frac{11\pi}{6}$

17. $\sec \frac{13\pi}{4}$

18. $\csc\left(-\frac{7\pi}{6}\right)$

19. Driving Golf Balls You and a friend are driving golf balls at a driving range. Your drive has an angle of elevation of 37° with an initial velocity of 140 feet per second. Your friend's drive has an angle of elevation of 45° and an initial velocity of 135 feet per second. Which ball travels the farthest and by how much?

20. Baseball A baseball player hits a ball at an angle of 50° . The ball travels a distance of 424 feet. What was the initial velocity of the ball?

LESSON
9.4**Practice C**

For use with the lesson "Evaluate Inverse Trigonometric Functions"

Evaluate the expression without using a calculator. Give your answer in both radians and degrees.

1. $\sin^{-1}\left(-\frac{\sqrt{3}}{2}\right)$

2. $\tan^{-1}(-\sqrt{3})$

3. $\cos^{-1}\left(-\frac{1}{2}\right)$

Use a calculator to evaluate the expression in both radians and degrees.

4. $\tan^{-1}(-2.5)$

5. $\cos^{-1} 0.34$

6. $\sin^{-1} 0.22$

7. $\tan^{-1} \sqrt{3}$

8. $\sin^{-1}(-1.27)$

9. $\cos^{-1}(-0.61)$

Solve the equation for θ .

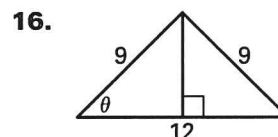
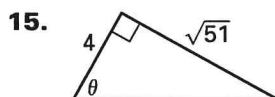
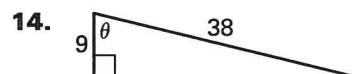
10. $\sin \theta = 0.27; 90^\circ < \theta < 180^\circ$

11. $\tan \theta = 0.42; 180^\circ < \theta < 270^\circ$

12. $\cos \theta = -0.65; 180^\circ < \theta < 270^\circ$

13. $\tan \theta = -2.5; 270^\circ < \theta < 360^\circ$

Find the measure of the angle θ .



17. Ramp Construction A builder needs to construct a wheelchair ramp 35 feet long that rises to a height of 6 feet above ground level. Approximate the angle that the ramp should make with the ground.

18. Casting Shadows At a certain time of day, a basketball player that is six feet and six inches tall casts a three foot long shadow. Approximate the angle the sun's rays make with the ground.

19. Boomerang The diagram shows the design of a boomerang. Find the measure of the angle θ .

