

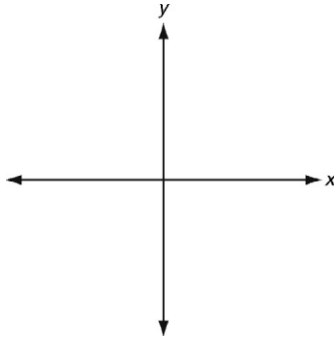
LESSON
17-1

Angles of Rotation and Radian Measure

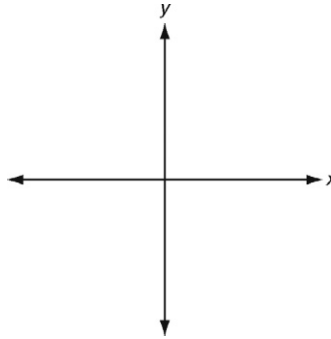
Practice and Problem Solving: A/B

Draw an angle with the given measure in standard position.

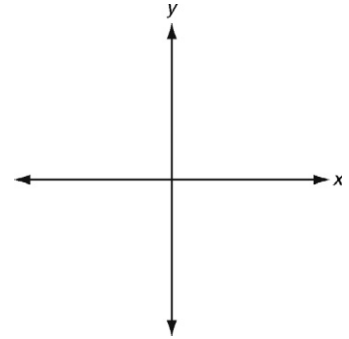
1. -420°



2. 405°



3. -450°



Find the measures of a positive angle and a negative angle that are coterminal with each given angle.

4. $\theta = 425^\circ$

5. $\theta = -316^\circ$

6. $\theta = -800^\circ$

7. $\theta = 281^\circ$

8. $\theta = -4^\circ$

9. $\theta = 743^\circ$

Convert each measure from degrees to radians or from radians to degrees.

10. $\frac{5\pi}{12}$

11. 215°

12. $-\frac{29\pi}{18}$

13. -180°

14. $\frac{5\pi}{3}$

15. $-\frac{7\pi}{6}$

Solve.

16. San Antonio, Texas, is located about 30° north of the equator. If Earth's radius is about 3959 miles, approximately how many miles is San Antonio from the equator?

LESSON
17-2**Defining and Evaluating the Basic Trigonometric Functions**
Practice and Problem Solving: A/B**Find the measure of the reference angle for each given angle.**

1. $\theta = 220^\circ$

2. $\theta = \frac{11\pi}{6}$

3. $\theta = -235^\circ$

4. $\theta = -\frac{2\pi}{3}$

5. $\theta = 590^\circ$

6. $\theta = -\frac{13\pi}{4}$

Find the exact value of each trigonometric function.

7. $\cos 120^\circ$

8. $\sin \frac{4\pi}{3}$

9. $\sin 585^\circ$

10. $\tan 765^\circ$

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

12. $\tan -\frac{5\pi}{6}$

Use a calculator to evaluate each trigonometric function. Round to four decimal places.

13. $\sin 170^\circ$

14. $\tan \frac{7\pi}{9}$

15. $\sin -\frac{8\pi}{3}$

16. $\cos -71^\circ$

17. $\tan 25^\circ$

18. $\cos -\frac{21\pi}{5}$

Solve. Assume each circle is centered at 0.

19. Find the exact coordinates of the point on a circle of radius 12.5 at an angle of
- 180°
- .

20. Find the exact coordinates of the point on a circle of radius 7 at an angle of
- $\frac{5\pi}{4}$
- .

LESSON
17-3**Using a Pythagorean Identity****Practice and Problem Solving: A/B**

Use the given value to calculate the values of the indicated trigonometric functions. Round your answers to three decimal places.

1. Given that $\cos \theta \approx 0.707$, where $0 < \theta < \frac{\pi}{2}$, find $\sin \theta$.

2. Given that $\sin \theta \approx -0.866$, where $\pi < \theta < \frac{3\pi}{2}$, find $\cos \theta$.

3. Given that $\tan \theta \approx 1.072$, where $0 < \theta < \frac{\pi}{2}$, find the values of $\sin \theta$ and $\cos \theta$.

4. Given that $\cos \theta \approx -0.485$, where $\frac{\pi}{2} < \theta < \pi$, find $\sin \theta$.

5. Given that $\tan \theta \approx -0.087$, where $\frac{3\pi}{2} < \theta < 2\pi$, find the values of $\sin \theta$ and $\cos \theta$.

6. Given that $\sin \theta = 0.5$, where $\frac{\pi}{2} < \theta < \pi$, find $\cos \theta$.

7. Given that $\sin \theta \approx -0.829$, where $\pi < \theta < \frac{3\pi}{2}$, find $\cos \theta$.

Solve.

8. The instant at which a waxed wood block on an inclined plane of wet snow begins to slide is represented by the equation $mg \sin \theta = \mu mg \cos \theta$, where θ represents the angle of the plane and μ is the coefficient of friction. What is $\cos \theta$ if $\mu = 0.52$ and $\sin \theta \approx 0.461$?
