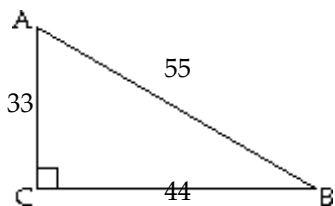


Find the exact values of the indicated trigonometric functions. Write fractions in lowest terms.

1)



Find $\sin A$ and $\cos A$.

Find the exact function value.

2) $\cos 30^\circ$

3) $\sec \frac{5\pi}{4}$

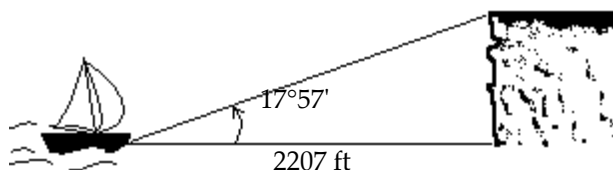
4) $\tan \frac{-5\pi}{6}$

5) $\sin \frac{-5\pi}{4}$

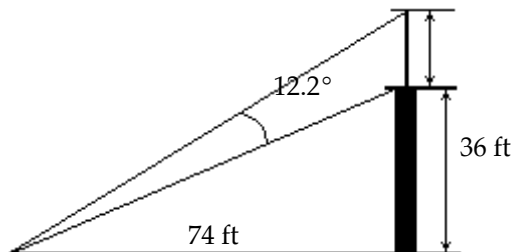
6) $\tan 45^\circ$

Solve.

- 7) From a boat on the lake, the angle of elevation to the top of a cliff is $17^\circ 57'$. If the base of the cliff is 2207 feet from the boat, how high is the cliff (to the nearest foot)?

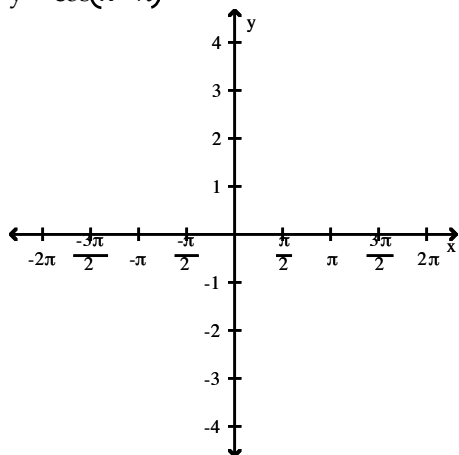


- 8) A vertical antenna is mounted atop a 36-foot pole. From a point on the level ground 74 feet from the base of the pole, the antenna subtends an angle of 12.2° . Find the length of the antenna to the nearest tenth of a foot.



Graph each using translations or reflections.

9) $y = \cos(x + \pi)$



Find the amplitude, period or phase shift.

10) Find the amplitude of $y = 3 \cos(2x - \pi)$.

Simplify.

11) $\sec^4 x - 2 \sec^2 x \tan^2 x + \tan^4 x$

12) $\frac{1 - \sin^2 x}{\sin x - \csc x}$

13) $\frac{\csc x (\sin^2 x + \cos^2 x \tan x)}{\sin x + \cos x}$

Find the exact value.

14) Given that $\sin \theta = -\frac{4}{5}$ with θ in quadrant IV, find $\sin 2\theta$.

15) Given that $\cos \theta = -\frac{5}{13}$ with θ in quadrant II, find $\sin 2\theta$.

Find the exact value in radians.

16) $\cos^{-1} \frac{\sqrt{3}}{2}$

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

Give the value of the function in radians. Round to the nearest thousandth when necessary.

18) $\sec^{-1} 1.1535$

Evaluate.

19) $\cos(\tan^{-1}\sqrt{3})$

20) $\sin^{-1}\left(\cos\frac{2\pi}{3}\right)$

Find.

21) $\cos\left(\tan^{-1}\frac{a}{3}\right)$

22) $\tan\left(\sin^{-1}\frac{10}{y}\right)$

Solve the equation for the interval $[0, 2\pi)$.

23) $\cos^2 x - \cos x = 0$

24) $2\sin^2 x + \sin x = 1$

Solve, finding all solutions in $[0, 2\pi)$.

25) $\sin 2x + \sin x = 0$

Solve using a calculator, finding all solutions in $[0, 2\pi)$. Round to the nearest hundredth.

26) $\cos 3x = \cos x$

Convert to polar coordinates. Express the answer in radians, using the smallest possible positive angle.

27) $(-3, 3)$

Find the polar coordinates of the point. Express the angle in degrees and then in radians, using the smallest possible positive angle.

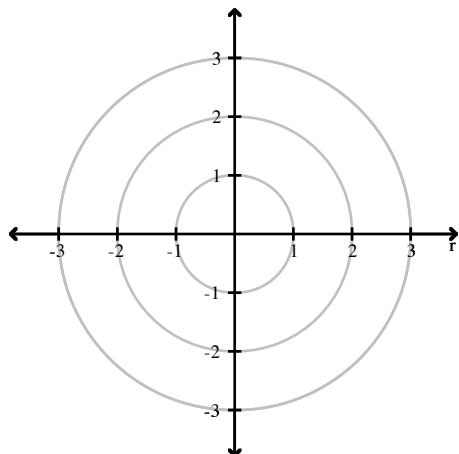
28) $(2\sqrt{3}, 6)$

Convert to a polar equation.

29) $x^2 - y^2 = 4$

Graph the equation using a graphing calculator.

30) $r = \sin 2\theta \tan \theta$



Answer Key

Testname: TRIG REVIEW

1) $\sin A = \frac{4}{5}$; $\cos A = \frac{3}{5}$

2) $\frac{\sqrt{3}}{2}$

3) $-\sqrt{2}$

4) $\frac{\sqrt{3}}{3}$

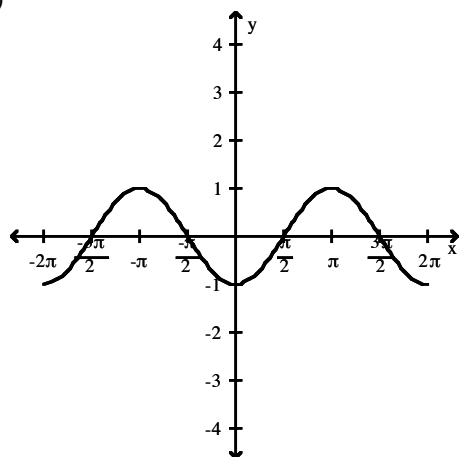
5) $\frac{\sqrt{2}}{2}$

6) 1

7) 715 ft

8) 22.1 ft

9)



10) 3

11) 1

12) $-\sin x$

13) 1

14) $-\frac{24}{25}$

15) $-\frac{120}{169}$

16) $\frac{\pi}{6}$

17) $-\frac{\pi}{4}$

18) 0.522

19) $\frac{1}{2}$

20) $-\frac{\pi}{6}$

21) $\frac{3}{\sqrt{a^2+9}}$

22) $\frac{10}{\sqrt{y^2-100}}$

23) $0, \frac{\pi}{2}, \frac{3\pi}{2}$

24) $\frac{\pi}{6}, \frac{5\pi}{6}, \frac{3\pi}{2}$

25) $0, \frac{2\pi}{3}, \pi, \frac{4\pi}{3}$

26) 1.57, 4.71

27) $\left(3\sqrt{2}, \frac{3\pi}{4}\right)$

28) $(4\sqrt{3}, 60^\circ), \left(4\sqrt{3}, \frac{\pi}{3}\right)$

29) $r^2 \cos 2\theta = 4$

30)

