

Trigonometry Review

Find one positive and one negative coterminal angle of each of the following. There is no need to graph the angles.

1) 30°

2) $-\frac{2\pi}{3}$

3) $\frac{5\pi}{2}$

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

Use the unit circle to find the exact value of each of the following. (Exact value means no decimal approximations.)

5) $\tan\left(-\frac{10\pi}{3}\right) =$

6) $\csc\frac{7\pi}{3} =$

7) $\sec\frac{4\pi}{3} =$

8) $\cos\left(-\frac{11\pi}{6}\right) =$

9) $\sin\frac{13\pi}{4} =$

10) $\csc\left(-\frac{5\pi}{6}\right) =$

11) $\tan\left(-\frac{\pi}{6}\right) =$

12) $\cot\frac{2\pi}{3} =$

Given the following information, find the exact value of the trigonometric function of angle θ .

13) Given $\sin\theta = \frac{3}{5}$ and angle θ lies in quadrant II, find $\cot\theta$.

14) Given $\tan\theta = \sqrt{3}$ and $\cos\theta < 0$, find $\sin\theta$.

15) Given $\tan\theta = -\frac{\sqrt{5}}{2}$ and $\sin\theta < 0$, find $\sec\theta$.

16) Given $\cos\theta = \frac{\sqrt{3}}{2}$ and $\sin\theta < 0$, find $\csc\theta$.

17) Change 270° to radian measure.

18) Change 210° to radian measure.

19) Change $\frac{7\pi}{4}$ to degree measure.

20) Change $\frac{2\pi}{3}$ to degree measure.

Use the arc length formula for numbers 21 thru 24.

Arc-Length $s = \theta r$ where θ is measured in radians.

21) If $r = 12.5$ and $s = 25$ find θ .

22) If $r = 22$ and the measure of the central angle is 180° find s .

23) A bicycle wheel with a 20 in diameter rotates 120° . What distance has the bicycle traveled?

24) Find the measure of the arc subtended by an angle of 40° if the radius of the circle is 12 inches.

25) Find all angles θ in the interval $[0, 2\pi)$ that satisfy the expression:

$$\sin \theta = -\frac{\sqrt{3}}{2} \quad \theta = \underline{\hspace{2cm}}$$

27) Find all angles θ in the interval $[0, 2\pi)$ that satisfy the expression:

$$\tan \theta = \sqrt{3} \quad \theta = \underline{\hspace{2cm}}$$

26) Find all angles θ in the interval $[0, 2\pi)$ that satisfy the expression:

$$\csc \theta = \sqrt{2} \quad \theta = \underline{\hspace{2cm}}$$

28) Find all angles θ in the interval $[0, 2\pi)$ that satisfy the expression:

$$\sec \theta = \text{undefined} \quad \theta = \underline{\hspace{2cm}}$$

GRAPH EACH OF THE FOLLOWING FUNCTIONS

Be sure to find the amplitude, period and initial interval of each function.

29) $y = 2 \sin(2x - \pi)$

30) $y = -\cos\left(\frac{x}{3}\right)$



Amplitude:

Period:

Phase Shift:

Initial Interval:



Amplitude:

Period:

Phase Shift:

Initial Interval:

31) $y = 2 \sin x + 3$

32) $y = 3 \csc\left(\frac{x}{2} - \pi\right)$



Amplitude:

Period:

Phase Shift:

Initial Interval:



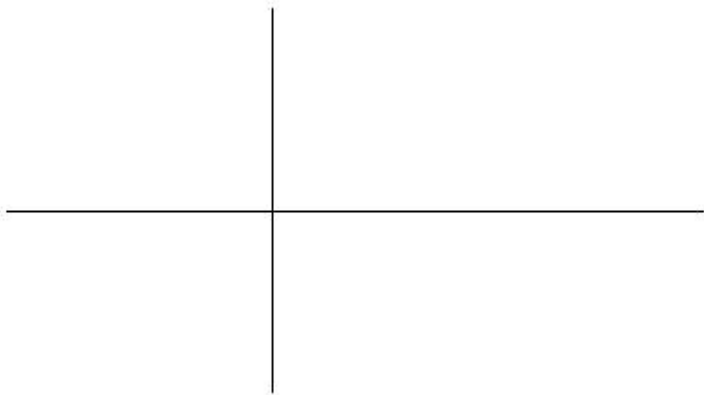
Amplitude:

Period:

Phase Shift:

Initial Interval:

33) $y = -\sec\left(2x - \frac{\pi}{2}\right)$



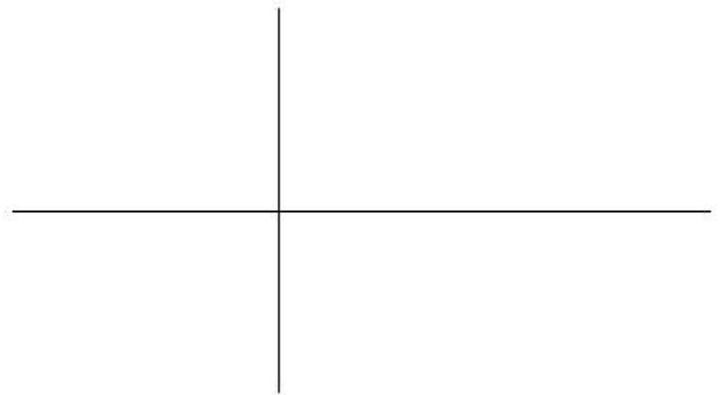
Amplitude:

Period:

Phase Shift:

Initial Interval:

34) $y = \csc x$



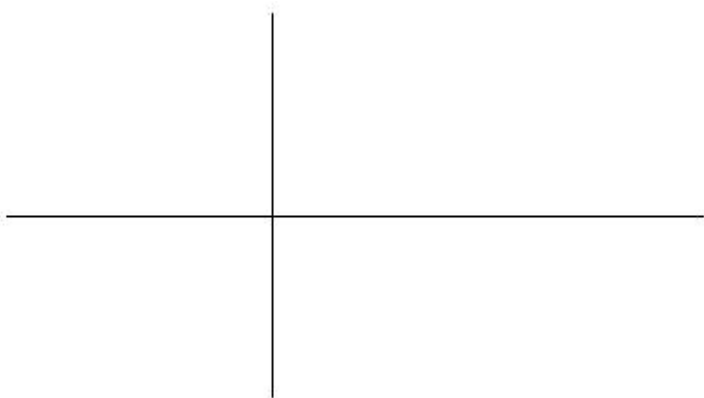
Amplitude:

Period:

Phase Shift:

Initial Interval:

35) $y = \tan(2x)$



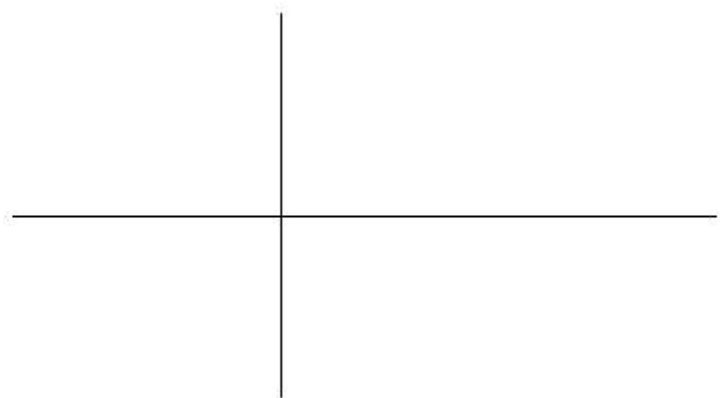
Amplitude:

Period:

Phase Shift:

Initial Interval:

36) $y = \cot\left(\frac{x}{2}\right)$



Amplitude:

Period:

Phase Shift:

Initial Interval: