

Problems 1-4. Draw the angle in standard form and state what quadrant it is in.

1.  $110^\circ$

2.  $250^\circ$

3.  $\frac{17\pi}{10}$

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

Problems 5-8. What is the exact value of each trigonometry expression? (no decimals!)

5.  $\cos(120^\circ)$

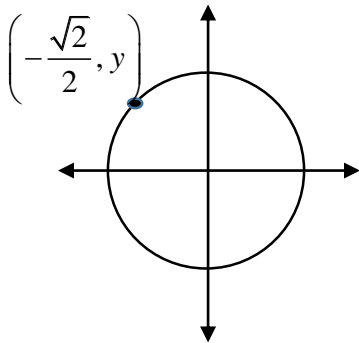
6.  $\sin(225^\circ)$

7.  $\cos\left(\frac{5\pi}{3}\right)$

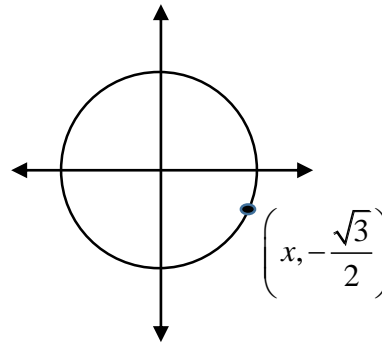
8.  $\sin\left(\frac{\pi}{3}\right)$

Problems 9-10. Find the missing point such that the point is on the unit circle.

9.



10.



Problem 11-12, Change to radians:

11.  $260^\circ$

12.  $85^\circ$

Problem 13-14, Change to degrees:

13.  $\frac{\pi}{5}$

14.  $\frac{5\pi}{18}$

Problems 15-17. What is the exact value of each trigonometry expression? (no decimals!)

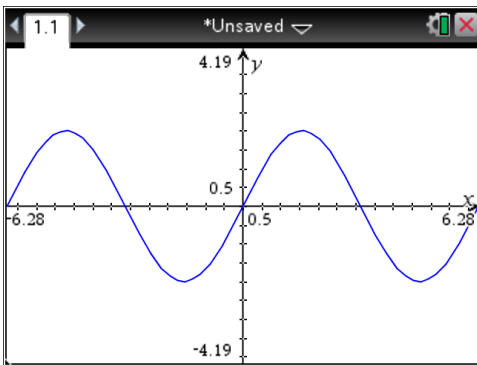
15.  $\tan\left(\frac{11\pi}{6}\right)$

16.  $\tan\left(\frac{3\pi}{4}\right)$

17.  $\tan\left(\frac{4\pi}{3}\right)$

Given the following equation and graph, find the period and amplitude of each function.

$y = 2 \sin(\theta)$

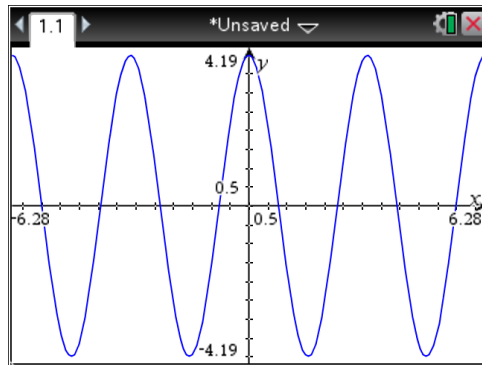


18.

Period: \_\_\_\_\_

Amplitude: \_\_\_\_\_

$y = 4 \cos(2\theta)$



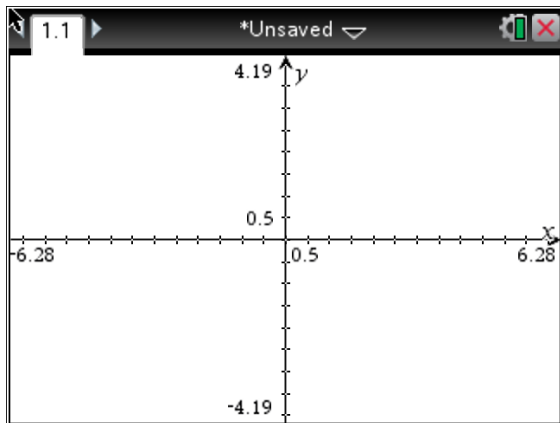
19.

Period: \_\_\_\_\_

Amplitude: \_\_\_\_\_

Graph the following equation, and find the period and amplitude of each function.

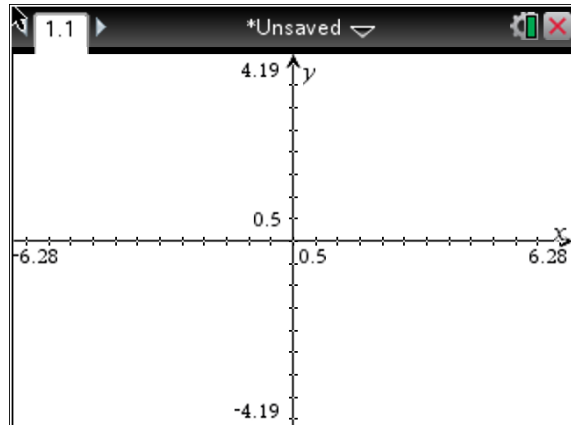
20.  $y = \frac{1}{2} \sin(\pi\theta)$



Period: \_\_\_\_\_

Amplitude: \_\_\_\_\_

21.  $y = -3 \cos(2\theta)$



Period: \_\_\_\_\_

Amplitude: \_\_\_\_\_

22. Find  $\cos(\theta)$  given  $\sin(\theta) = \frac{\sqrt{3}}{2}$  in Quadrant II.

23. Find  $\sin(\theta)$  given  $\cos(\theta) = -\frac{\sqrt{2}}{2}$  in Quadrant II.

24. Find  $\tan(\theta)$  given  $\sin(\theta) = \frac{4}{5}$  in Quadrant I.

25. Find  $\cos(\theta)$  given  $\sin(\theta) = -\frac{3}{5}$  in Quadrant III.

26. If  $\tan(\theta)$  is positive, what quadrant would  $\theta$  be in if  $\cos(\theta)$  is also positive?

27. If  $\sin(\theta)$  is negative, what quadrant would  $\theta$  be in if  $\tan(\theta)$  is positive?

28. What is  $\sin(\theta)$  for an angle  $\theta$  in standard position whose terminal side contains the point (4, 3)?

29. What is  $\tan(\theta)$  for an angle  $\theta$  in standard position whose terminal side contains the point (-28, 45)?

30. Find the exact value of  $\sin(\theta)$  if the terminal side of  $\theta$  in standard position contains the given point (0,1).

31. Find the exact value of  $\cos(\theta)$  if the terminal side of  $\theta$  in standard position contains the given point (0,-6).

32. Suppose in between low and high tides, the water level varies 108 inches. Low tide occurs at 6am and high tide is at 9pm. Using the times and the amount the water level varies find a cosine function that models the water level in inches above and below the average water level. Express the function in terms of time, in hours since 6:00 A.M.