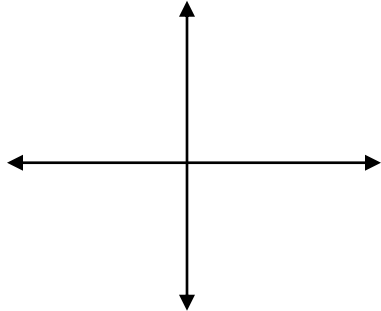


Homework 10.1 Unit Circle

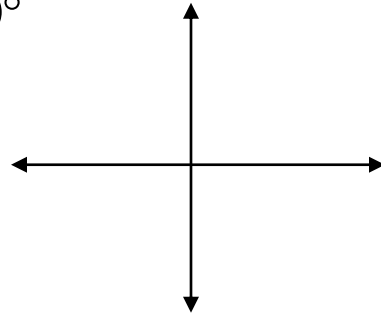
Name _____ Section: 1 2 3 4 5 6 Date: _____

Find the exact value of each function. Draw the picture!

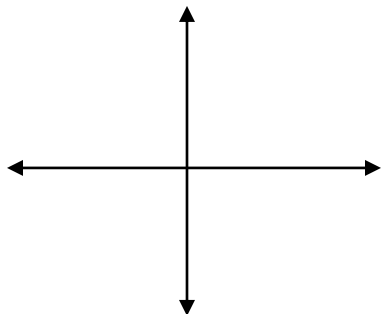
1. $\cos 45^\circ$



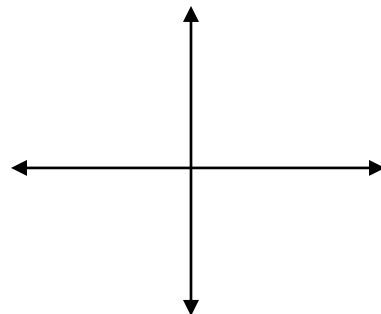
2. $\sin 60^\circ$



3. $\cos 30^\circ$



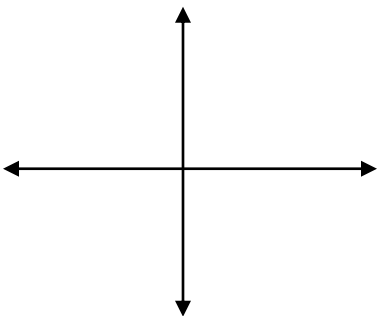
4. $\sin 30^\circ$



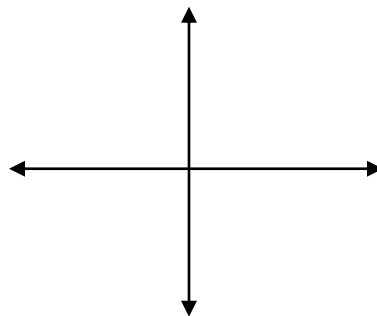
Find the given point $P(x, y) = P(\cos \theta, \sin \theta)$ given the quadrant.

(Hint: Draw the right triangle in the given quadrant with one leg on the x-axis.)

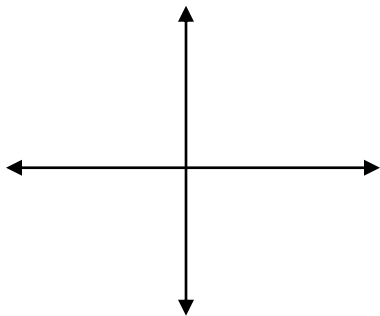
5. 60° in quadrant IV



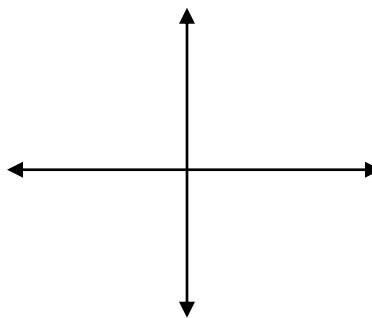
6. 30° in quadrant II



7. 45° in quadrant III



8. 60° in quadrant I



If θ is an angle in standard position and if the given point P is located on the terminal side of θ and on the unit circle, find $\sin \theta$ and $\cos \theta$.

Remember: $P(x, y) = P(\cos \theta, \sin \theta)$ where $\cos \theta = x$ and $\sin \theta = y$

9. $P\left(-\frac{3}{7}, \frac{5}{7}\right)$

$\sin \theta = \underline{\hspace{2cm}}$

$\cos \theta = \underline{\hspace{2cm}}$

10. $P\left(-\frac{\sqrt{3}}{2}, \frac{-1}{2}\right)$

$\sin \theta = \underline{\hspace{2cm}}$

$\cos \theta = \underline{\hspace{2cm}}$

11. $P\left(\frac{\sqrt{2}}{2}, -\frac{\sqrt{2}}{2}\right)$

$\sin \theta = \underline{\hspace{2cm}}$

$\cos \theta = \underline{\hspace{2cm}}$

12. $P\left(-\frac{15}{17}, \frac{8}{17}\right)$

$\sin \theta = \underline{\hspace{2cm}}$

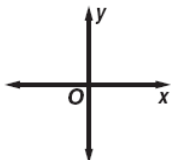
$\cos \theta = \underline{\hspace{2cm}}$

Homework 10.2 Angles and Angle Measure

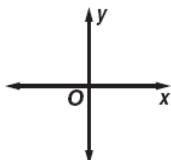
Name _____ Section: 1 2 3 4 5 6 Date: _____

Draw an angle with the given measure in standard position.

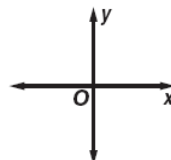
1. 210°



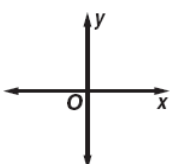
2. 305°



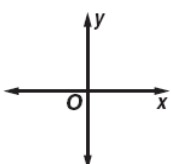
3. 580°



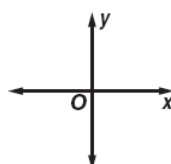
4. 135°



5. -450°



6. -560°



Rewrite each degree measure in radians and each radian measure in degrees.

7. 18°

8. 6°

9. 870°

10. 347°

11. -72°

12. -820°

13. -250°

15. 4π

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

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

$\frac{\pi}{4}$

19. $-\frac{9\pi}{2}$

20. $-\frac{7\pi}{12}$

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

10.2 CONTINUED back side!

10.2 CONTINUED!!!

Find one angle with positive measure and one angle with negative measure coterminal with each angle.

23. 65°

25. 285°

26. 110°

$^\circ$

28. -93°

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

31. $\frac{17\pi}{6}$

32. $-\frac{3\pi}{2}$

34. $-\frac{5\pi}{12}$

Homework 10.3 Trig Functions of General Angles

Name _____ Section: 1 2 3 4 5 6 Date: _____

Find the exact values of the six trigonometric functions of θ if the terminal side of θ in standard position contains the given point.

1. (6, 8)

2. (-20, 21)

3. (-2, -5)

Find the reference angle with the given measure.

4. 236°

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

6. -210°

7. $-\frac{7\pi}{4}$

Use the unit circle!

Find the exact value of each trigonometric function.

8. $\tan 135^\circ$

9. $\sec 90^\circ$

10. $\cot(-90^\circ)$

11. $\cos 405^\circ$

12. $\tan \frac{5\pi}{3}$

13. $\csc\left(-\frac{3\pi}{4}\right)$

14. $\cot 2\pi$

15. $\tan \frac{13\pi}{6}$

10.3 CONTINUED

Suppose θ is an angle in standard position whose terminal side is in the given quadrant. For each function, find the exact values of the remaining five trigonometric functions of θ .

16. $\tan \theta = -\frac{12}{5}$, Quadrant IV

17. $\sin \theta = \frac{2}{3}$, Quadrant III

Homework 10.2-3 Mixed Practice

Name _____ Section: 1 2 3 4 5 6 Date: _____

Review from 10.2:

Find one positive and one negative angle coterminal with each given angle.

1) 1260° positive: _____ negative: _____

2) -720° positive: _____ negative: _____

3) $\frac{9}{4}\pi$ positive: _____ negative: _____

4) Rewrite each degree measure in radians.

$$495^\circ =$$

$$-810^\circ =$$

5) Rewrite each radian measure in degrees.

5a) $-\frac{7\pi}{2} =$

5b) $5\pi =$

5c) $\frac{15\pi}{4} =$

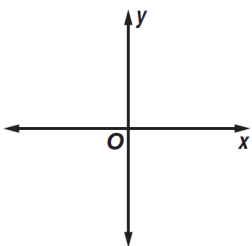
5d) $\frac{-9\pi}{2} =$

10.3 continued! Back side!

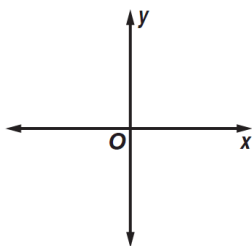
10.3B continued!

Find the exact values of the following. Use the unit circle!

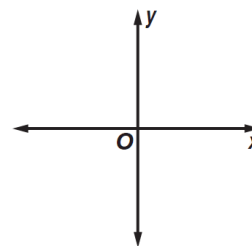
$$\cos \frac{15\pi}{2} = \underline{\hspace{2cm}}$$



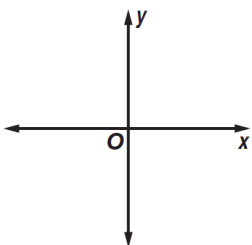
$$\sin \frac{-\pi}{4} = \underline{\hspace{2cm}}$$



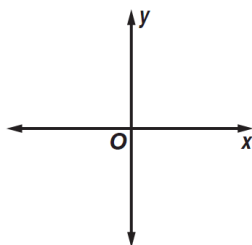
$$\tan 5\pi = \underline{\hspace{2cm}}$$



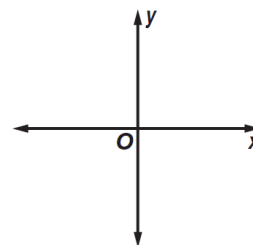
$$\cos 900^\circ = \underline{\hspace{2cm}}$$



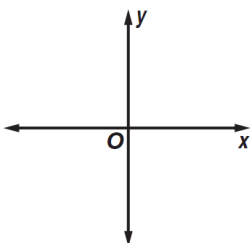
$$\sin 495^\circ = \underline{\hspace{2cm}}$$



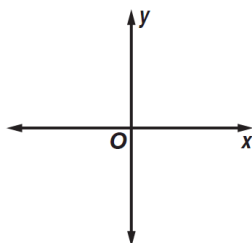
$$\tan 405^\circ = \underline{\hspace{2cm}}$$



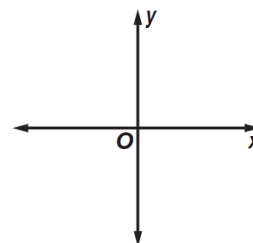
$$\cos \frac{-13}{4}\pi = \underline{\hspace{2cm}}$$



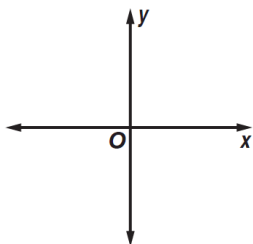
$$\sin \frac{7}{2}\pi = \underline{\hspace{2cm}}$$



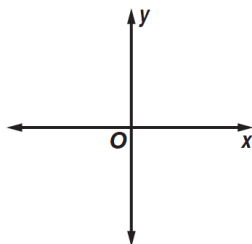
$$\tan \frac{-\pi}{2} = \underline{\hspace{2cm}}$$



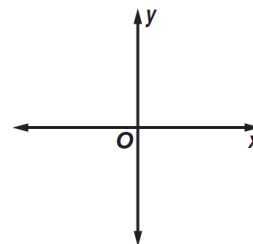
$$\cos 720^\circ = \underline{\hspace{2cm}}$$



$$\sin -540^\circ = \underline{\hspace{2cm}}$$



$$\tan 1080^\circ = \underline{\hspace{2cm}}$$



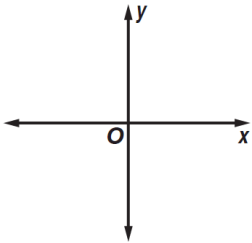
Homework 10.3 Additional Practice, Exact Values

Name _____ Section: 1 2 3 4 5 6 Date: _____

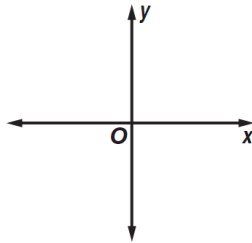
Exact Values: One more time!

Draw the given angle. Use reference angles and the unit circle to find the exact values of:

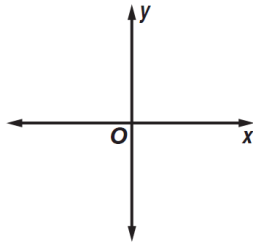
$$\cos 30^\circ = \underline{\hspace{2cm}}$$



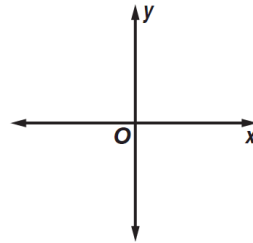
$$\sin \frac{-\pi}{6} = \underline{\hspace{2cm}}$$



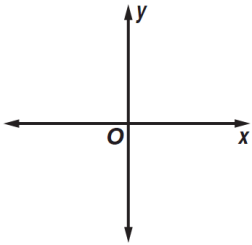
$$\sin 510^\circ = \underline{\hspace{2cm}}$$



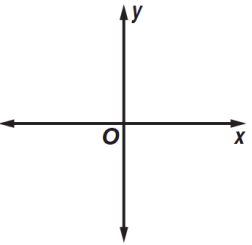
$$\tan -60^\circ = \underline{\hspace{2cm}}$$



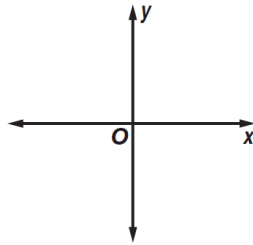
$$\cos 120^\circ = \underline{\hspace{2cm}}$$



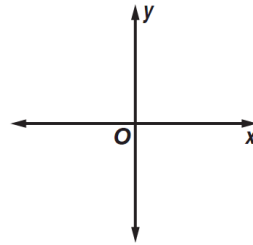
$$\sin 420^\circ = \underline{\hspace{2cm}}$$



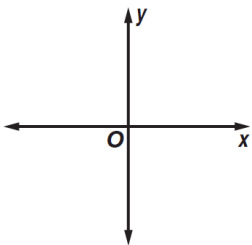
$$\cos 390^\circ = \underline{\hspace{2cm}}$$



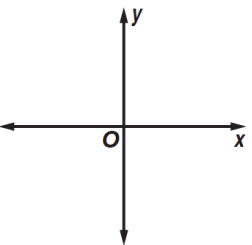
$$\tan 30^\circ = \underline{\hspace{2cm}}$$



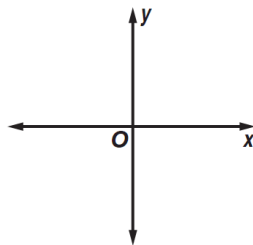
$$\cos \frac{-8\pi}{3} = \underline{\hspace{2cm}}$$



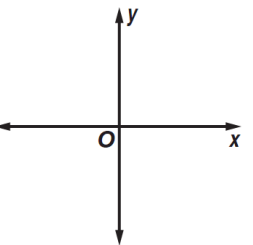
$$\sin 225^\circ = \underline{\hspace{2cm}}$$



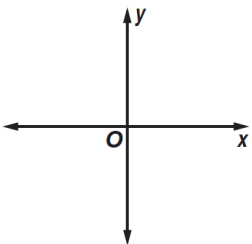
$$\cos 930^\circ = \underline{\hspace{2cm}}$$



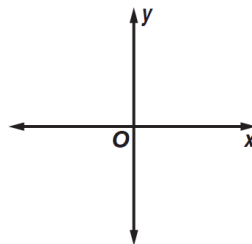
$$\tan 45^\circ = \underline{\hspace{2cm}}$$



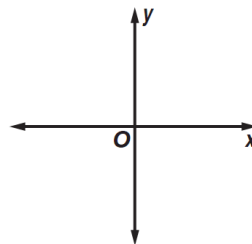
$$\cos 990^\circ = \underline{\hspace{2cm}}$$



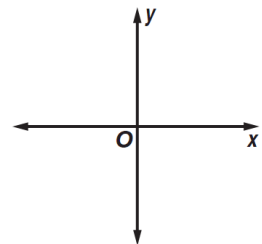
$$\sin 1080^\circ = \underline{\hspace{2cm}}$$



$$\cos 1020^\circ = \underline{\hspace{2cm}}$$



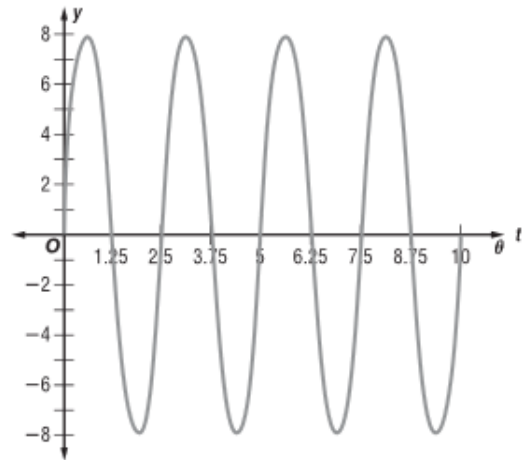
$$\tan 630^\circ = \underline{\hspace{2cm}}$$



Homework 10.4 Circular Functions

Name _____ Section: 1 2 3 4 5 6 Date: _____

4. SWIMMING As Charles swims a 25 meter sprint, the position of his right hand relative to the water surface can be modeled by the graph below, where h is the height of the hand in inches from the water level and t is the seconds past the start of the sprint. What function describes this graph?

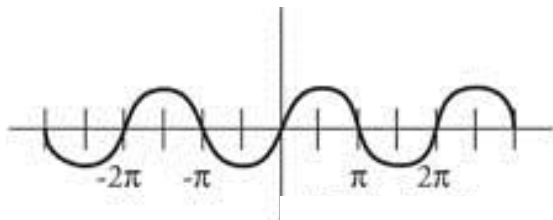


4a. Sine or Cosine? _____

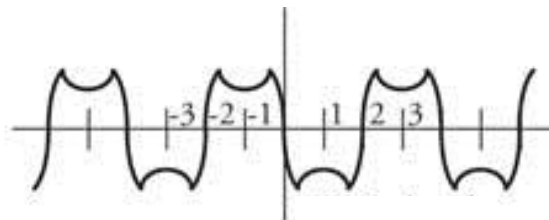
Justify your answer.

4b. What is the **amplitude** of the function above: _____

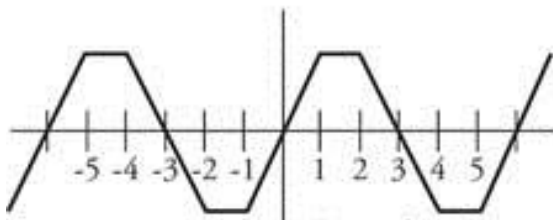
6. What is the **period** of each function?



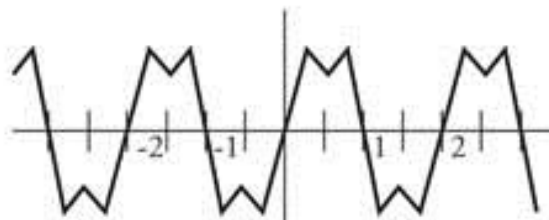
(a)



(b)



(c)



(d)