

Name: _____

6.8 The Unit Circle

Find the exact value:

1. $\tan \frac{3\pi}{2}$

2. $\cos \pi$

3. $\sin \left(-\frac{\pi}{2} \right)$

4. $\sec \frac{3\pi}{2}$

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

6. $\cos \frac{5\pi}{2}$

7. $\tan 4\pi$

8. $\cot \frac{\pi}{2}$

9. If $\csc \theta > 0$, then θ lies in quadrant(s) _____

10. If $\csc \theta < 0$, and $\sec \theta > 0$ then θ lies in quadrant(s) _____

11. Which of the following points is not on the unit circle?

A) $(-1, 0)$

B) $\left(\frac{1}{2}, -\frac{1}{2} \right)$

C) $\left(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2} \right)$

12. Which radian value is associated with the coordinates $\left(-\frac{\sqrt{3}}{2}, \frac{1}{2} \right)$

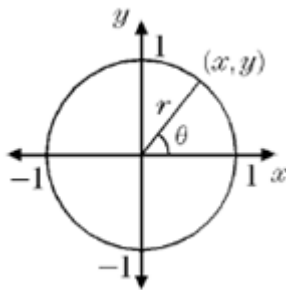
13. In the accompanying diagram of a unit circle, the ordered pair (x, y) represents the locus of points for the circle. Which ordered pair is equivalent to (x, y) ?

a) $(\sin \theta, \cos \theta)$

b) $(\cot \theta, \tan \theta)$

c) $(\tan \theta, \cot \theta)$

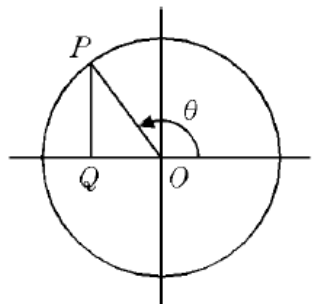
d) $(\cos \theta, \sin \theta)$



14. Find 2 negative and 3 positive angles, expressed in radians, for which the point on the unit circle corresponds to each angle is:

$\left(\frac{1}{2}, \frac{\sqrt{3}}{2} \right)$

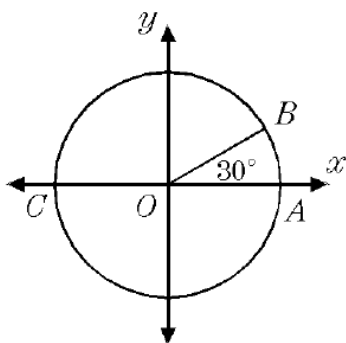
15. In the accompanying diagram, circle O is a unit circle. What function is represented by the length of segment OQ?



- a) $\cos \theta$
- b) $\sin \theta$
- c) $-\cos \theta$
- d) $-\sin \theta$

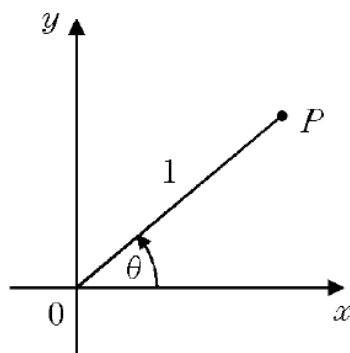
16. In the diagram of circle O $\overline{OA} = 1$ and $m\angle BOA = 30^\circ$. What are the coordinates of B?

- a) $\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$
- b) $\left(\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$
- c) $\left(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$
- d) $\left(\frac{\sqrt{2}}{2}, \frac{1}{2}\right)$



17. In the figure $\overline{OP} = 1$. What are the coordinates of point P?

- a) $(\sin \theta, \cos \theta)$
- b) $(-\sin \theta, -\cos \theta)$
- c) $(\cos \theta, \sin \theta)$
- d) $(-\cos \theta, -\sin \theta)$



18. In the diagram, the ordered pair (x,y) represents the point where the terminal side of θ intersects the unit circle. If $m\angle\theta = 120^\circ$, what is the value of x in simplest form?

- a) $-\frac{\sqrt{3}}{2}$
- b) $\frac{\sqrt{3}}{2}$
- c) $-\frac{1}{2}$
- d) $\frac{1}{2}$

