

Assignment 7C: The Unit Circle

Answer the following problems with as much detail, explanation, and work that is appropriate.

1. The point P is on the unit circle. If the y -coordinate of P is $\frac{3}{5}$, and P is in quadrant II, find the x coordinate.

2. If $\sin(\theta) = \frac{3}{8}$ and θ is in the 2nd quadrant, find $\cos(\theta)$.

3. For each of the following angles, find the reference angle and which quadrant the angle lies in. Then compute sine and cosine of the angle.

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

b. $\frac{2\pi}{3}$

c. $\frac{5\pi}{6}$

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

4. Give exact values for $\sin(\theta)$ and $\cos(\theta)$ for each of these angles.

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

b. $\frac{17\pi}{4}$

c. $-\frac{\pi}{6}$

d. 10π

5. Find an angle θ with $0 < \theta < 360^\circ$ or $0 < \theta < 2\pi$ that has the same sine value as:

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

b. 80°

c. 140°

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

e. 305°

6. Compute the following exactly.

a. $\csc\left(\frac{\pi}{6}\right)$

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

c. $\sec\left(\frac{7\pi}{4}\right)$

d. $\cot\left(\frac{2\pi}{3}\right)$