

Section 4.2 Extra Practice

- Write the equation of a circle with the given radius, and its centre at (0, 0).
 a) 4 units b) $\sqrt{5}$ units
 c) 9.1 units d) 11 units
- Which point(s) lies on the unit circle?
 Explain how you know.
 $\left(-\frac{5}{13}, \frac{12}{13}\right)$ $\left(\frac{5}{6}, \frac{1}{2}\right)$ $\left(-\frac{2}{3}, -\frac{\sqrt{5}}{3}\right)$
- Each of the following points lies on the unit circle. Find the missing coordinate satisfying the given conditions.
 a) $\left(-\frac{2}{3}, y\right)$ in quadrant III
 b) $\left(x, \frac{4}{5}\right)$ in quadrant II
 c) $\left(\frac{5}{6}, y\right)$ in quadrant IV
 d) $\left(x, \frac{1}{7}\right)$ in quadrant I
- The point $P(x, y)$ is located where the terminal arm of angle θ and the unit circle intersect. Determine the coordinates of point P for the given angle.
 a) $\theta = 45^\circ$ b) $\theta = 270^\circ$
 c) $\theta = -60^\circ$ d) $\theta = 210^\circ$
- The point $P(x, y)$ is the point at the intersection of angle θ . If $P(\theta)$ is the point at the intersection of the terminal arm of angle θ and the unit circle, determine the exact coordinates of each.
 a) $P\left(\frac{3\pi}{4}\right)$ b) $P\left(-\frac{2\pi}{3}\right)$
 c) $P(2\pi)$ d) $P\left(\frac{11\pi}{6}\right)$
- Identify a measure for θ in the interval $0 \leq \theta < 360^\circ$ such that $P(\theta)$ is the given point.
 a) $\left(-\frac{1}{\sqrt{2}}, -\frac{1}{\sqrt{2}}\right)$ b) $(-1, 0)$
 c) $\left(\frac{1}{\sqrt{2}}, -\frac{1}{\sqrt{2}}\right)$ d) $\left(-\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)$
- Identify a measure for θ in the interval $0 \leq \theta < 2\pi$ such that $P(\theta)$ is the given point.
 a) $(1, 0)$ b) $\left(\frac{1}{2}, -\frac{\sqrt{3}}{2}\right)$
 c) $\left(-\frac{\sqrt{3}}{2}, \frac{1}{2}\right)$ d) $(-1, 0)$
- On a diagram of the unit circle, show all the integral multiples of $\frac{\pi}{4}$ in the interval $0 \leq \theta < \pi$. On your diagram, label the coordinates for each point $P(\theta)$.
- Consider a point where $P(\theta) = \left(-\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$.
 a) Determine the coordinates of $P\left(\theta + \frac{\pi}{2}\right)$.
 b) Determine the coordinates of $P\left(\theta - \frac{\pi}{2}\right)$.
- If $P(\theta) = \left(-\frac{1}{2}, -\frac{1}{\sqrt{2}}\right)$, determine the following.
 a) the coordinates of $P\left(\theta + \frac{\pi}{2}\right)$
 b) the coordinates of $P\left(\theta - \frac{\pi}{2}\right)$

