

APPC Lesson 8.1 Homework

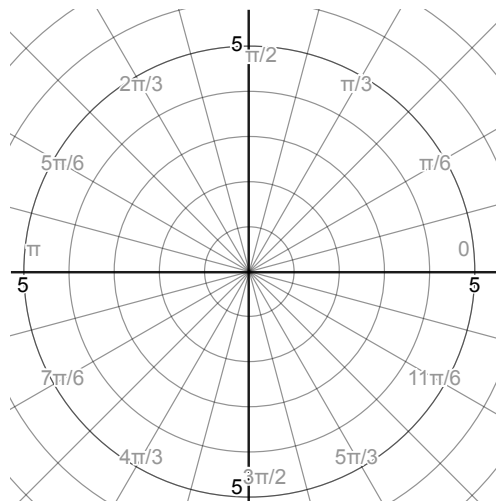
Name _____

1. Plot each point on the polar grid. Label the points A , B , and C .

a. $\left(4, \frac{2\pi}{3}\right)$

b. $\left(3, \frac{5\pi}{4}\right)$

c. $\left(5, -\frac{\pi}{6}\right)$



2. Give three other polar coordinates that represent $\left(-6, \frac{5\pi}{6}\right)$.

3. Convert the polar coordinates into rectangular coordinates. Give exact values.

a. $\left(12, \frac{3\pi}{4}\right)$

b. $\left(3, -\frac{\pi}{6}\right)$



4. Convert the rectangular coordinates into polar coordinates where $0 \leq \theta \leq 2\pi$. Give exact measures when possible. Otherwise, round to the nearest hundredth.

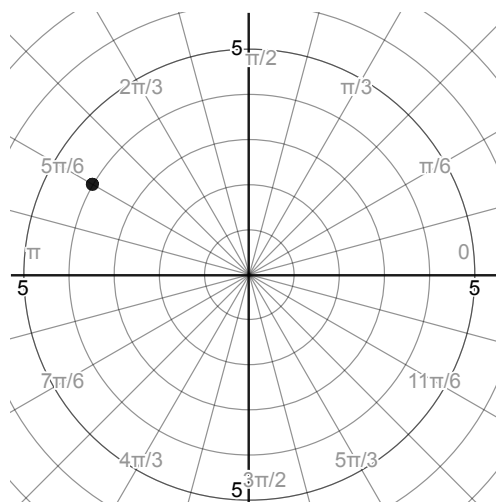
a. $(3, -4)$

b. $(-2, 2\sqrt{3})$

5. A point with coordinates (a, θ) is shown.

a. Graph $(a, 2\pi)$. Label it Point K .

b. Graph $(-a, \theta - \frac{\pi}{6})$. Label it Point J .



6. Which point is further from the origin: the point with polar coordinates $(8, \frac{4\pi}{3})$ or the point with rectangular coordinates $(6, 8)$? Explain.

7. Does the point given by the coordinates $(-3, 16\pi)$ represent the same point as the one given by the coordinates $(3, 27\pi)$? Explain.

8. Cartesian coordinates and polar coordinates can both be used to describe locations on a coordinate plane.
 - a. A graph is defined by the Cartesian coordinates (x, y) , where all points on the graph have 6 as the first coordinate. Describe this set of points.

 - b. A graph is defined by the polar coordinates (r, θ) , where all points on the graph have 6 as the first coordinate. Describe this set of points.