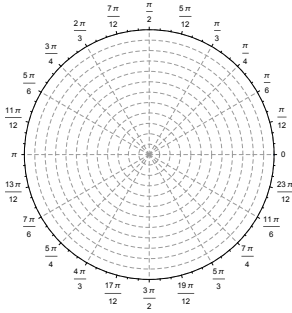# 10.4 Polar Coordinates and Polar Graphs

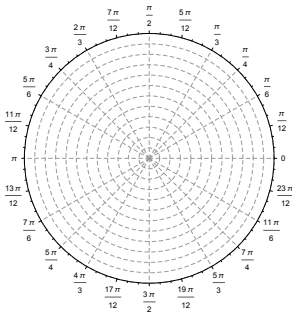Name: Date: August 5, 2015

P 2. Plot the point in polar coordinates and find the corresponding rectangular coordinates for the point.

$$(-2, 5\pi/3)$$

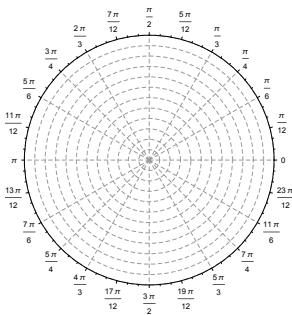**P 4.** Plot the point in polar coordinates and find the corresponding rectangular coordinates for the point.
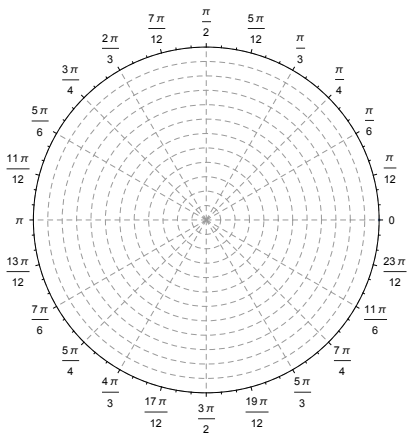
$$(0, -7\pi/6)$$

P 6. Plot the point in polar coordinates and find the corresponding rectangular coordinates for the point.

$$(-2, 11\pi/6)$$

P 12. Plot the point in rectangular coordinates and find the corresponding polar coordinates for the point.

$$(0, -6)$$

P 14. Plot the point in rectangular coordinates and find the corresponding polar coordinates for the point.
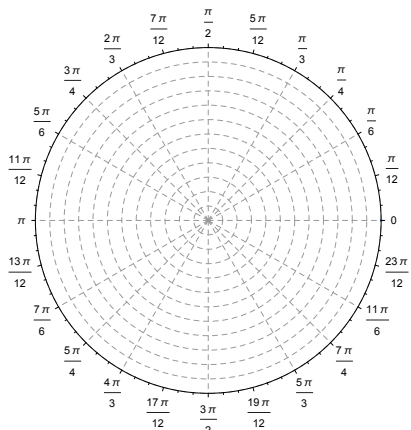
$$(4, -2)$$

P 16. Plot the point in rectangular coordinates and find the corresponding polar coordinates for the point.
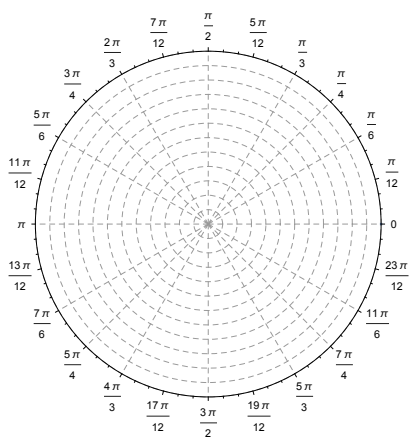
$$\left(3, -\sqrt{3}\right)$$

P 23. Convert the rectangular equation to polar form and sketch its graph.
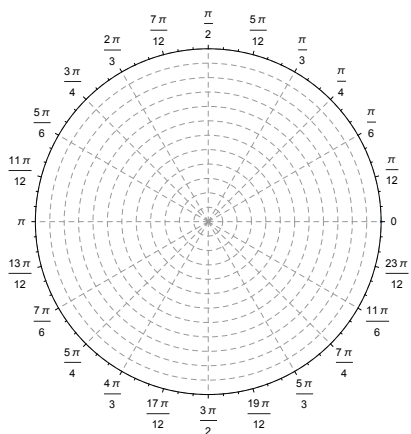
$$x^2 + y^2 = 9$$

P 28. Convert the rectangular equation to polar form and sketch its graph.

$$x = 12$$

P 32. Convert the rectangular equation to polar form and sketch its graph.

$$(x^2 + y^2)^2 - 9(x^2 - y^2) = 0$$

P 34. Convert the polar equation to rectangular form and sketch its graph.

$$r = -5$$

P 36. Convert the polar equation to rectangular form and sketch its graph.

$$r = 5\cos\theta$$

P 38. Convert the polar equation to rectangular form and sketch its graph.

$$\theta = 5\pi/6$$

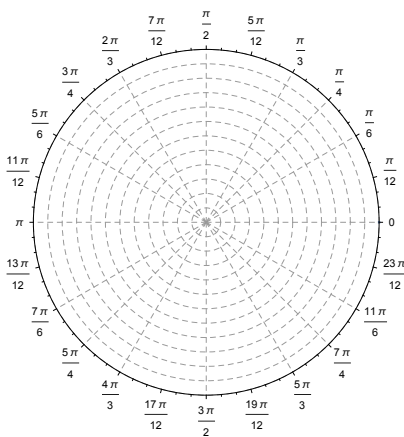**P 40.** Convert the polar equation to rectangular form and sketch its graph.

$$r = 2\cos\theta$$

P 43. Find an interval for θ over which the graph is traced only once.
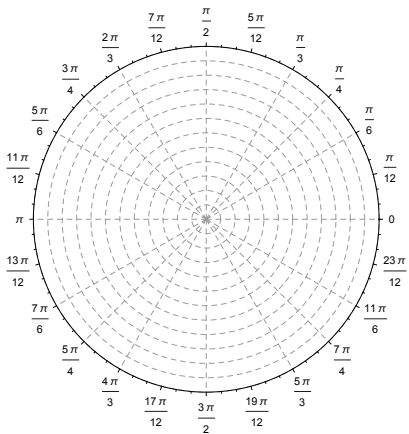
$$r = 2 - 5\cos\theta$$

P 69. Sketch a graph of the polar equation and find the tangents at the pole.
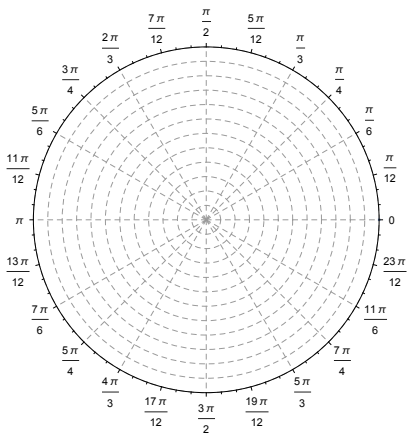
$$r = 5\sin\theta$$

P 77. Sketch a graph of the polar equation.

$$r = 8$$

P 82. Sketch a graph of the polar equation.

$$r = 5 - 4\sin\theta$$

P 86. Sketch a graph of the polar equation.

$$r = 1/\theta$$