

Use a polar coordinate system to plot the point with the given polar coordinates.

1) $\left(4, \frac{7\pi}{4}\right)$

Solve the problem.

2) Plot the point $\left(4, \frac{\pi}{6}\right)$ and find other polar coordinates (r, θ) of the point for which: 2) _____

(a) $r > 0, -2\pi \leq \theta < 0$

(b) $r < 0, 0 \leq \theta < 2\pi$

(c) $r > 0, 2\pi \leq \theta < 4\pi$

Find another representation, (r, θ) , for the point under the given conditions.

3) $\left(2, \frac{\pi}{6}\right), r > 0$ and $2\pi < \theta < 4\pi$

4) $\left(4, \frac{\pi}{3}\right), r < 0$ and $0 < \theta < 2\pi$

5) $\left(8, \frac{\pi}{6}\right), r > 0$ and $-2\pi < \theta < 0$

Select the representation that does not change the location of the given point.

6) $(6, 170^\circ)$

Polar coordinates of a point are given. Find the rectangular coordinates of the point.

7) $(-3, 120^\circ)$

The rectangular coordinates of a point are given. Find polar coordinates of the point. Express θ in radians.

8) $(5\sqrt{3}, 5)$

Convert the rectangular equation to a polar equation that expresses r in terms of θ .

9) $x^2 + y^2 = 4$

10) $2x - 5y + 12 = 0$

11) $y^2 = 3x$

Convert the polar equation to a rectangular equation.

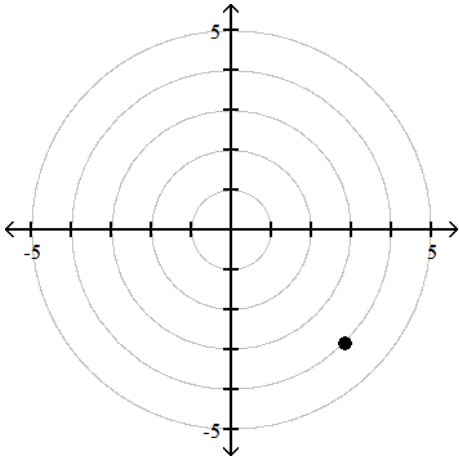
12) $r = 7$ 12) _____
 A) $x = 7$ B) $x^2 + y^2 = 49$ C) $y^2 = 49$ D) $y = 7$

13) $r \cos \theta = 7$ 13) _____
 A) $x = 7$ B) $y^2 = 7$ C) $x^2 + y^2 = 7$ D) $y = 7$

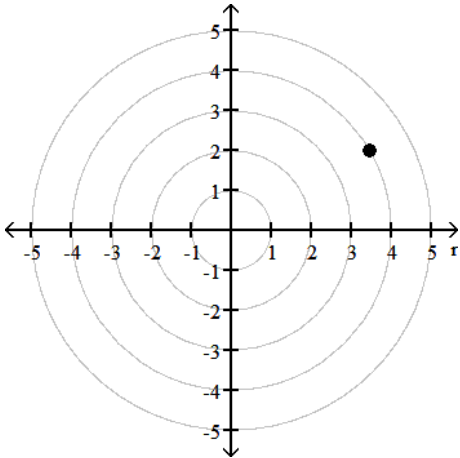
Answer Key

Testname: PRACTICE15

1)



2)



(a) $(4, -\frac{11\pi}{6})$

(b) $(-4, \frac{7\pi}{6})$

(c) $(4, \frac{13\pi}{6})$

3) $(2, \frac{13}{6}\pi)$

4) $(-4, \frac{4}{3}\pi)$

5) $(8, -\frac{11}{6}\pi)$

6) $(6, 530)^\circ$

7) $(\frac{3}{2}, \frac{-3\sqrt{3}}{2})$

8) $(10, \frac{\pi}{6})$

9) $r = 2$

Answer Key

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$$10) r = \frac{-12}{(2 \cos \theta - 5 \sin \theta)}$$

$$11) r = 3 \cot x \csc x$$

12) B

13) A