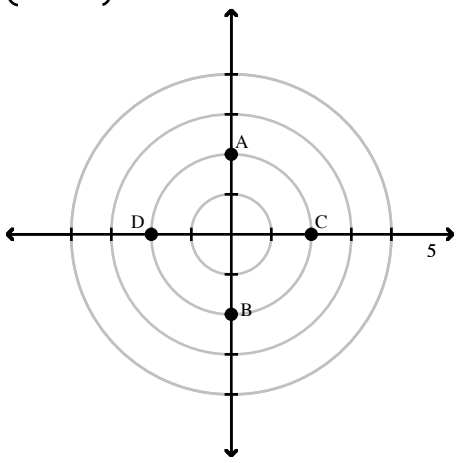
# 7.3 Trigonometry short version

Name_____

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

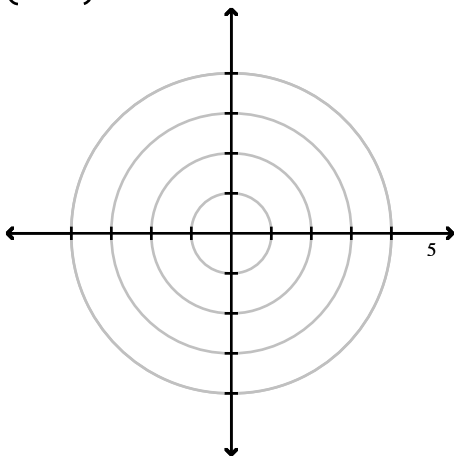
**Match the point in polar coordinates with either A, B, C, or D on the graph.**

1) $\left(-2, -\frac{\pi}{2}\right)$ 1) _____

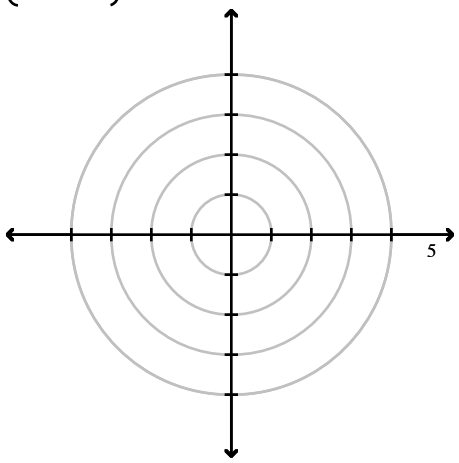



**Use a polar coordinate system to plot the point with the given polar coordinates.**

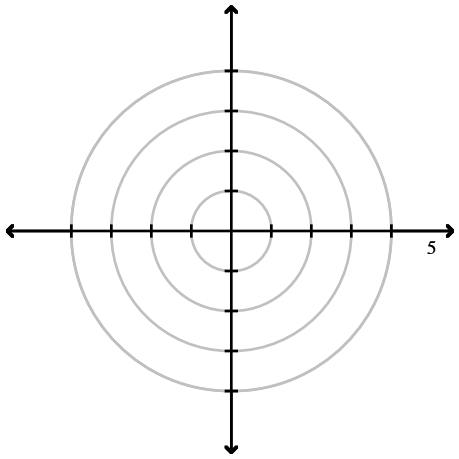
2) $\left(4, \frac{3\pi}{4}\right)$ 2) _____



3) $\left(-4, \frac{-5\pi}{4}\right)$ 3) _____




4) (–4, 225°) 4) _____




**Find another representation, $(r, \theta)$, for the point under the given conditions.**

5) $\left(7, \frac{\pi}{6}\right)$, $r < 0$ and $2\pi < \theta < 4\pi$ 5) _____

**MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.**

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

6) (-8, 6π) 6) _____

A) (-8, 7π) B) (8, 5π) C) (8, 4π) D) (-8, 5π)

**SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.**

**Find another representation, $(r, \theta)$, for the point under the given conditions.**

7) $\left(5, \frac{\pi}{6}\right)$, $r < 0$ and $0 < \theta < 2\pi$ 7) _____

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

8) (–5, 180°) 8) _____

9) $(-3, -135°)$ 9) _____

10) $\left(-5, \frac{2\pi}{3}\right)$ 10) _____

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

11) $(-3, 3)$ 11) _____

12) $(6\sqrt{3}, 6)$ 12) _____

13) $(-3, 0)$ 13) _____

14) $(0, -\sqrt{2})$ 14) _____

15) $(2, -2)$ 15) _____

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

16) $x = 9$ 16) _____

17) $y = 6$ 17) _____

18) $x^2 + y^2 = 16$ 18) _____

19) $(x - 3)^2 + y^2 = 9$ 19) _____

20) $8x - 5y + 12 = 0$ 20) _____

**Convert the polar equation to a rectangular equation.**

21) $r = 8$ 21) _____

22) $\theta = \frac{2\pi}{3}$ 22) _____

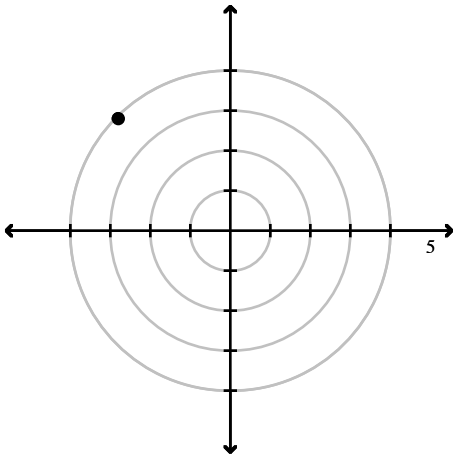
23) $r \cos \theta = 2$ 23) _____

24) $r = 6 \csc \theta$ 24) _____

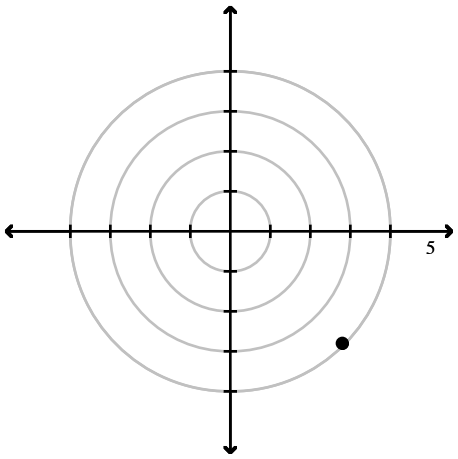
25) $r = 7 \cos \theta + 8 \sin \theta$ 25) _____

1) A

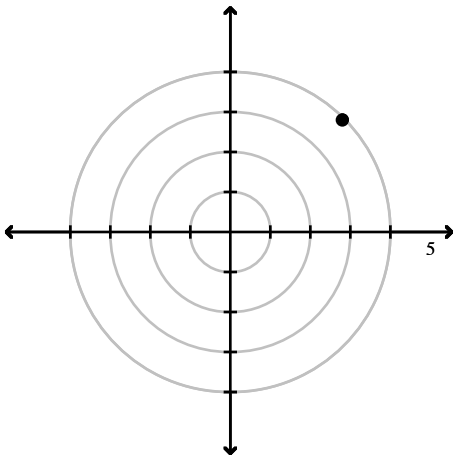
2)




3)




4)




5) $\left(-7, \frac{19}{6}\pi\right)$

6) B

7) $\left(-5, \frac{7}{6}\pi\right)$

8) $(5, 0)$

9) $\left(\frac{3\sqrt{2}}{2}, \frac{3\sqrt{2}}{2}\right)$

10) $\left(\frac{5}{2}, \frac{-5\sqrt{3}}{2}\right)$

11) $\left(3\sqrt{2}, \frac{3\pi}{4}\right)$

12) $\left(12, \frac{\pi}{6}\right)$

13) $(3, \pi)$

14) $(-\sqrt{2}, 90°)$

15) $(-2\sqrt{2}, 135°)$

16) $r = \frac{9}{\cos\theta}$

17) $r = \frac{6}{\sin\theta}$

18) $r = 4$

19) $r = 6\cos\theta$

20) $r = \frac{-12}{(8\cos\theta - 5\sin\theta)}$

21) $x^2 + y^2 = 64$

22) $y = -\sqrt{3}x$

23) $x = 2$

24) $y = 6$

25) $x^2 + y^2 = 7x + 8y$