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) \( (-2, -\frac{\pi}{2}) \)  

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

2) \( (4, \frac{3\pi}{4}) \)
Find another representation, \((r, \theta)\), for the point under the given conditions.

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

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) \((-8, 6\pi)\)
   A) \((-8, 7\pi)\)       B) \((8, 5\pi)\)       C) \((8, 4\pi)\)       D) \((-8, 5\pi)\)

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 \( 0 < \theta < 2\pi \)

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

8) \((-5, 180^\circ)\)
9) \((-3, -135^\circ)\)  

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

The rectangular coordinates of a point are given. Find polar coordinates of the point. Express \(\theta\) in radians.

11) \((-3, 3)\)

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

13) \((-3, 0)\)

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

15) \((2, -2)\)

Convert the rectangular equation to a polar equation that expresses \(r\) in terms of \(\theta\).

16) \(x = 9\)

17) \(y = 6\)

18) \(x^2 + y^2 = 16\)

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

20) \(8x - 5y + 12 = 0\)

Convert the polar equation to a rectangular equation.

21) \(r = 8\)

22) \(\theta = \frac{2\pi}{3}\)

23) \(r \cos \theta = 2\)

24) \(r = 6 \csc \theta\)

25) \(r = 7 \cos \theta + 8 \sin \theta\)
1) A
2) 
3) 
4) 
5) \(-7, \frac{19}{6} \pi\)
6) B
7) \(-5, \frac{7}{6} \pi\)
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, π)
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 θ
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) \(x^2 + y^2 = 7x + 8y\)