

8.1 -8.2 Practice Polar Coordinates & Graphs

Note that in the rectangular system, there is only one way to label a point. In the polar system, there are several ways to label a point, actually an infinite number of ways.

For each polar point, label it in two other ways:

1) $(4, 60^\circ)$

2) $(-5, 315^\circ)$

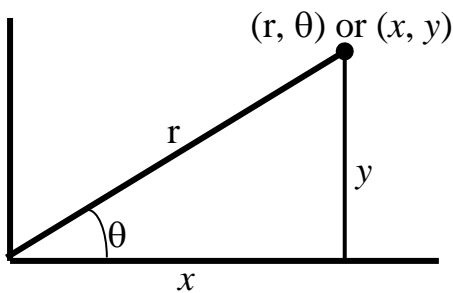
3) $(2, -90^\circ)$

4) $\left(1, \frac{5\pi}{6}\right)$

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

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

To convert to and from the polar system to the coordinate system, you must know the following relationships.



$$x = r \cos \theta$$

$$y = r \sin \theta$$

$$\tan \theta = \frac{y}{x}$$

$$r^2 = x^2 + y^2$$

Convert the following polar points to rectangular coordinates.

7) $(6, 90^\circ)$

8) $(5, 60^\circ)$

9) $(10, 225^\circ)$

10) $(5, \pi)$

11) $\left(2\sqrt{3}, \frac{\pi}{6}\right)$

12) $\left(\frac{5}{2}, \frac{5\pi}{3}\right)$

Convert the following rectangular points to polar coordinates.

13) $(-5, -5)$

14) $(0, -2)$

15) $(1, -\sqrt{3})$

16) $(-7, 0)$

17) $(5, 12)$

18) $(6, -3)$

