

Fill in the Blanks

Polar to Cartesian Conversions

Cartesian Coordinate	Polar Coordinate	Cartesian Equation	Polar Equation
(12, 5)	(13, 0.39)	$x^2 + y^2 = 16$	$r = 4$
(1, $\sqrt{3}$)	$(2, \frac{\pi}{3})$	$x^2 + y^2 = 4$	$r = 2$
(2, 2)	$(2\sqrt{2}, \frac{\pi}{4})$	$y = 4x$	$\tan \theta = 4$
(-1, $\sqrt{3}$)	$(2, \frac{2\pi}{3})$	$x^2 + y^2 - 2y = 0$	$r = 2 \sin \theta$
(0, 2)	$(2, \frac{\pi}{2})$	$x = 5$	$r = 5 \sec \theta$
(-5, $-5\sqrt{3}$)	$(10, \frac{4\pi}{3})$	$x^2 + y^2 = 2x$	$r = 2 \cos \theta$
$(1, -\frac{1}{2})$	$(\frac{\sqrt{5}}{2}, -0.46)$	$y = 8x^2$	$r = \frac{1}{8} \tan \theta \sec \theta$
$(\frac{5\sqrt{3}}{2}, -\frac{5}{2})$	$(5, -\frac{\pi}{6})$	$y^2 = 5x$	$r = 5 \cot \theta \operatorname{cosec} \theta$
(-8, -6)	(10, -2.50)	$y^2 - x^2 = 4$	$r^2 = \frac{4}{2 \sin^2 \theta - 1}$
(5, $-5\sqrt{3}$)	$(10, -\frac{\pi}{3})$	$xy = 9$	$r^2 = 9 \sec \theta \operatorname{cosec} \theta$
($3\sqrt{3}$, -3)	$(6, \frac{11\pi}{6})$	$x^2 + y^2 = x + 2y$	$r = \cos \theta + 2 \sin \theta$