Polar Coordinates: Examples

SYMPLIT

1. Convert the following polar coordinates to Cartesian coordinates
   (a) $(2, \pi/3)$
   (b) $(3, -3\pi/4)$
   (c) $(-4, 5\pi/6)$
2. Write the following Cartesian coordinates in polar coordinates in two different ways
   (a) $(-3, 0)$
   (b) $(\sqrt{3}, -1)$
3. Write the Cartesian equation for the curve $r = 4\sin\theta$
4. Write the polar equation for the curve $x^2 + 4y^2 = 1$
5. Draw the graph of $r = 3\cos\theta$
6. Sketch the closed curve $r = 7\cos\left(\theta - \frac{\pi}{4}\right)$
7. Sketch the graph of $r = 2\cos(3\theta)$
8. Sketch the graph of $r = 3\sin(4\theta)$
9. Sketch the graph of $r = 1 - 2\sin\theta$
10. Sketch the graph of $r = 3 + \cos\theta$