

In problems 1 thru 5

- (a) Sketch the curve represented by the parametric equations (no calc for #1-3)
- (b) Eliminate the parameter and write the corresponding rectangular equation.

1. $x = t$
 $y = -4t$

2. $x = \cos \theta$
 $y = 3\sin \theta$

3. $x = t + 5$
 $y = t^2$

4. $x = \sec \theta$
 $y = \tan \theta$

5. $x = t^3$
 $y = 3 \ln t$

Plot the point given in polar coordinates and find three additional polar representations of the point, using $-360^\circ < \theta < 360^\circ$.

6. $(4, 150^\circ)$

7. $(-\frac{1}{2}, -210^\circ)$

Find the corresponding rectangular coordinates for the point given in polar coordinates.

8. $(5, \frac{\pi}{6})$

9. $(-2, 135^\circ)$

Find two sets of polar coordinates for $0 < \theta < 360^\circ$.

10. $(-4, -4)$

11. $(2, -2\sqrt{3})$

Convert the rectangular equation to polar form. (solve for r)

12. $x^2 + y^2 - 6y = 0$

13. $y = 8$

Convert the polar equation to rectangular form.

14. $r = 4 \sin \theta$

15. $r = \frac{4}{1 - \cos \theta}$