

Assignment-Parametric Equation

Write each pair of parametric equations in rectangular form.

1)  $x = 4\sec t, y = \tan t$

2)  $x = 4\sec t, y = 4\tan t$

3)  $x = 3\sin \frac{t}{2}, y = 3\cos \frac{t}{2}$

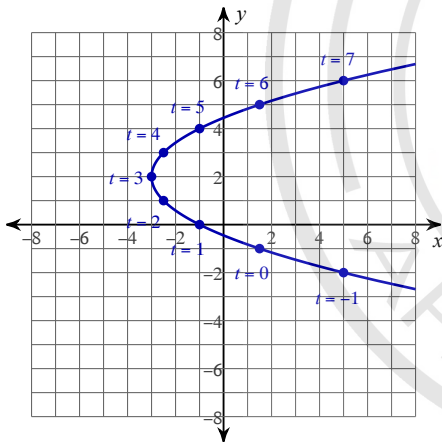
4)  $x = 2\tan \frac{t}{2}, y = 3\sec \frac{t}{2}$

5)  $x = 2\sin \frac{t}{2} - 2, y = 2\cos \frac{t}{2} + 2$

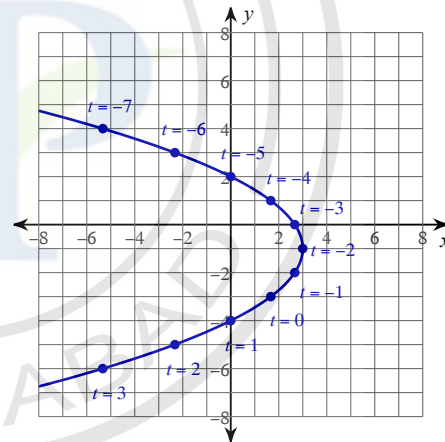
6)  $x = -\frac{9t^2}{4} - 3t + 3, y = 3t + 1$

Write a pair of parametric equations for each conic section.

7)



8)



Use the parameter to write each rectangular equation as a pair of parametric equations.

9)  $y = \frac{x^2}{2}, t = x$

10)  $x = -\frac{y^2}{4}, t = y$

Write each pair of parametric equations in rectangular form. Then sketch the curve.

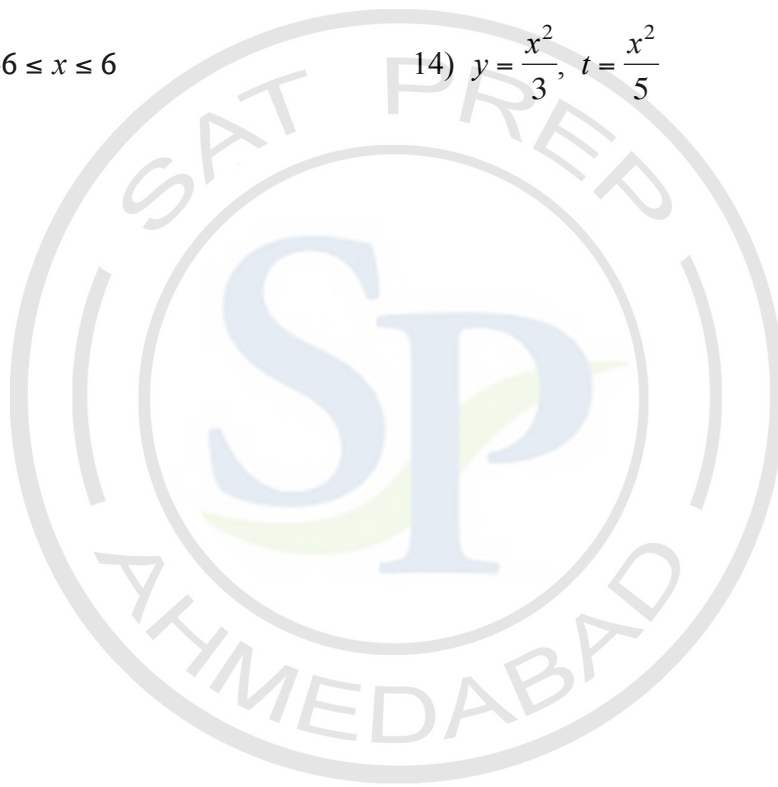
11)  $x = \sec t, y = 3\tan t$

12)  $x = 2\cos t, y = 5\sin t$

Use the parameter to write each rectangular equation as a pair of parametric equations. State any restrictions on the parameter. Then sketch the curve.

13)  $y = -\frac{x^2}{6}, t = x, -6 \leq x \leq 6$

14)  $y = \frac{x^2}{3}, t = \frac{x^2}{5}$



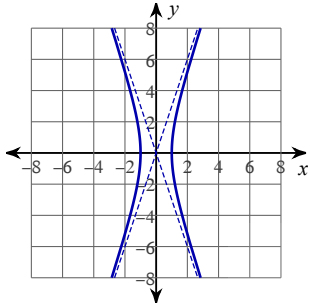
## Answers to Assignment-Parametric Equation

1)  $\frac{x^2}{16} - y^2 = 1$       2)  $\frac{x^2}{16} - \frac{y^2}{16} = 1$       3)  $\frac{x^2}{9} + \frac{y^2}{9} = 1$       4)  $\frac{y^2}{9} - \frac{x^2}{4} = 1$

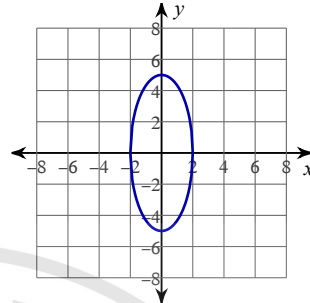
5)  $\frac{(x+2)^2}{4} + \frac{(y-2)^2}{4} = 1$       6)  $x = -\frac{y^2}{4} - \frac{y}{2} + \frac{15}{4}$       7)  $x = \frac{t^2}{2} - 3t + \frac{3}{2}, y = t - 1$

8)  $x = -\frac{t^2}{3} - \frac{4t}{3} + \frac{5}{3}, y = -t - 3$       9)  $x = t, y = \frac{t^2}{2}$       10)  $x = -\frac{t^2}{4}, y = t$

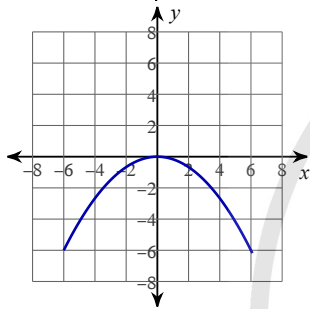
11)  $x^2 - \frac{y^2}{9} = 1$



12)  $\frac{x^2}{4} + \frac{y^2}{25} = 1$



13)  $x = t, y = -\frac{t^2}{6}, -6 \leq t \leq 6$



14)  $x = \sqrt{5t}, y = \frac{5t}{3}, t \geq 0$

