

- If f and g are continuous functions of t on an interval I , then the set of ordered pairs $(f(t), g(t))$ is a _____ C .
 - The _____ of a curve is the direction in which the curve is traced out for increasing values of the parameter.
 - The process of converting a set of parametric equations to a corresponding rectangular equation is called _____ the _____.
 - A curve traced out by a point on the circumference of a circle as the circle rolls along a straight line in a plane is called a _____.
- 5. Sketching a Curve** Consider the parametric equations $x = \sqrt{t}$ and $y = 3 - t$.
- Create a table of x - and y -values using $t = 0, 1, 2, 3,$ and 4 .
 - Plot the points (x, y) generated in part (a), and sketch a graph of the parametric equations.
 - Find the rectangular equation by eliminating the parameter. Sketch its graph. How do the graphs differ?

Sketching a Curve In Exercises 7–34, (a) sketch the curve represented by the parametric equations (indicate the orientation of the curve) and (b) eliminate the parameter and write the resulting rectangular equation whose graph represents the curve. Adjust the domain of the rectangular equation, if necessary.

$$10. \begin{cases} x = 3 - 2t \\ y = 2 + 3t \end{cases} \quad 17. \begin{cases} x = t^3 \\ y = t^2 \end{cases}$$

$$20. \begin{cases} x = t - 1 \\ y = \frac{t}{t - 1} \end{cases}$$

$$23. \begin{cases} x = 4 \cos \theta \\ y = 2 \sin \theta \end{cases} \quad 26. \begin{cases} x = \cos \theta \\ y = 2 \sin 2\theta \end{cases} \quad 27. \begin{cases} x = 1 + \cos \theta \\ y = 1 + 2 \sin \theta \end{cases} \quad 30. \begin{cases} x = e^t \\ y = e^{3t} \end{cases}$$

Eliminating the Parameter In Exercises 49–52, eliminate the parameter and obtain the standard form of the rectangular equation.

50. Circle: $x = h + r \cos \theta, y = k + r \sin \theta$

51. Ellipse: $x = h + a \cos \theta, y = k + b \sin \theta$

52. Hyperbola: $x = h + a \sec \theta, y = k + b \tan \theta$