

## Section 10.6 Parametric Equations

**Objective:** In this lesson you learned how to rewrite a set of parametric equations as a rectangular equation and find a set of parametric equations for a graph.

Course Number

Instructor

Date

### Important Vocabulary

Define each term or concept.

#### Parameter

### I. Plane Curves (Page 812)

If  $f$  and  $g$  are continuous functions of  $t$  on an interval  $I$ , the set of ordered pairs  $(f(t), g(t))$  is a(n) \_\_\_\_\_  $C$ . The equations  $x = f(t)$  and  $y = g(t)$  are \_\_\_\_\_ for  $C$ , and  $t$  is the \_\_\_\_\_.

#### *What you should learn*

How to evaluate a set of parametric equations for a given value of the parameter

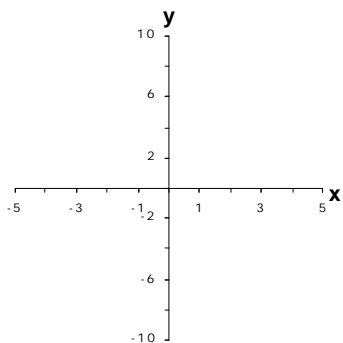
### II. Sketching a Plane Curve (Page 813)

When sketching a curve represented by a pair of parametric equations, you plot the points in the \_\_\_\_\_. Each set of coordinates  $(x, y)$  is determined from a value chosen for the \_\_\_\_\_. Plotting the resulting points in the order of increasing values of  $t$  traces the curve in a specific direction, called the \_\_\_\_\_ of the curve.

#### *What you should learn*

How to sketch the curve that is represented by a set of parametric equations

**Example 1:** Sketch the curve described by the parametric equations  $x = t - 3$  and  $y = t^2 + 1$ ,  $-1 \leq t \leq 3$ .



**III. Eliminating the Parameter** (Pages 813–815)

Eliminating the parameter is the process of . . .

***What you should learn***  
How to rewrite a set of parametric equations as a single rectangular equation

Describe the process used to eliminate the parameter from a set of parametric equations.

When converting equations from parametric to rectangular form, you may need to alter . . .

To eliminate the parameter in equations involving trigonometric functions, try using the identities . . .

**IV. Finding Parametric Equations for a Graph**  
(Pages 815–816)

Describe how to find a set of parametric equations for a given graph.

***What you should learn***  
How to find a set of parametric equations for a graph

**Homework Assignment**

Page(s)

Exercises