

## Section 8.3 Parametric Equations

**Objective:** In this lesson you learned how to evaluate sets of parametric equations for given values of the parameter and graph curves that are represented by sets of parametric equations and how to rewrite sets of parametric equations as single rectangular equations and find sets of parametric equations for graphs.

Course Number

Instructor

Date

### Important Vocabulary

Define each term or concept.

#### Parameter

### I. Plane Curves (Page 597)

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 sets of parametric equations for given values of the parameter

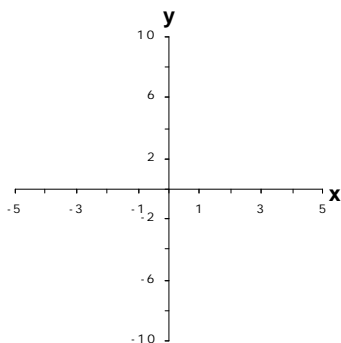
### II. Sketching a Plane Curve (Pages 598–599)

One way to sketch a curve represented by a pair of parametric equations is to plot points in the \_\_\_\_\_. Each set of coordinates  $(x, y)$  is determined from a value chosen for the \_\_\_\_\_. By plotting the resulting points in the order of increasing values of  $t$ , you trace the curve in a specific direction, called the \_\_\_\_\_ of the curve.

#### *What you should learn*

How to graph curves that are represented by sets of parametric equations

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



Another way to display a curve represented by a pair of parametric equations is to use a graphing utility. To do so, . . .

### III. Eliminating the Parameter (Page 600)

**Eliminating the parameter** is the process of . . .

***What you should learn***  
How to rewrite sets of parametric equations as single rectangular equations by eliminating the parameter

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

Converting equations from parametric to rectangular form can change the \_\_\_\_\_ of  $x$  and  $y$ . In such cases, . . .

### IV. Finding Parametric Equations for a Graph (Page 601)

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

***What you should learn***  
How to find sets of parametric equations for graphs

#### Homework Assignment

Page(s)

Exercises