Course Number

Instructor

Date

Section 9.5 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.

Important Vocabulary Define each term or concept.

Parameter

I. Plane Curves (Page 699)

What you should learn
How to evaluate sets of parametric equations for given values of the parameter

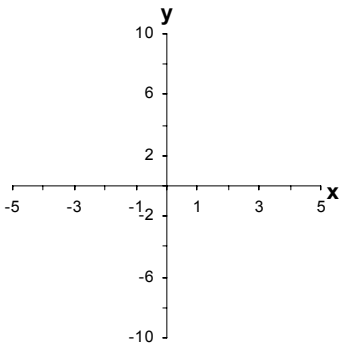
If f and g are continuous functions of t on an interval I, the set of ordered pairs $(f(t), g(t))$ is a(n) _____ C. The equations given by $x = f(t)$ and $y = g(t)$ are _____ _____ for C, and t is the _____.

II. Sketching a Plane Curve (Pages 700–701)

What you should learn
How to graph curves that are represented by sets of parametric equations

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.

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



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 (Pages 702–703)

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

Eliminating the parameter is the process of . . .

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

When converting equations from parametric to rectangular form, it may be necessary to alter . . .

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

IV. Finding Parametric Equations for a Graph (Page 703)

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

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

Homework Assignment

Page(s)

Exercises