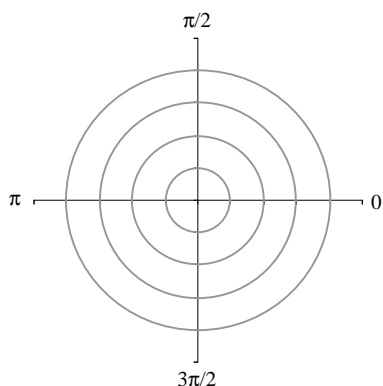


Section 11.5 Graphs of Polar Equations

Objective: In this lesson you learned how to graph polar equations.

I. Introduction (Pages 811–812)

Example 1: Use point plotting to sketch the graph of the polar equation $r = 3 \cos q$.



The graph of the polar equation $r = f(q)$ can be written in parametric form, using t as a parameter, as follows:

II. Symmetry (Pages 812–813)

The graph of a polar equation is symmetric with respect to the following if the given substitution yields an equivalent equation.

Substitution

- 1) The line $q = p/2$:
- 2) The polar axis:
- 3) The pole:

Example 2: Describe the symmetry of the polar equation $r = 2(1 - \sin q)$.

III. Zeros and Maximum r -Values (Pages 814–815)

Two additional aids to sketching graphs of polar equations are . . .

Course Number

Instructor

Date

What you should learn

How to graph polar equations by point plotting

What you should learn

How to use symmetry as an aid to graphing polar equations

What you should learn

How to use zeros and maximum r -values as graphing aids

Example 3: Describe the zeros and maximum r -values of the polar equation $r = 5 \cos 2\theta$

IV. Special Polar Graphs (Pages 816–817)

List the general equations that yield each of the following types of special polar graphs:

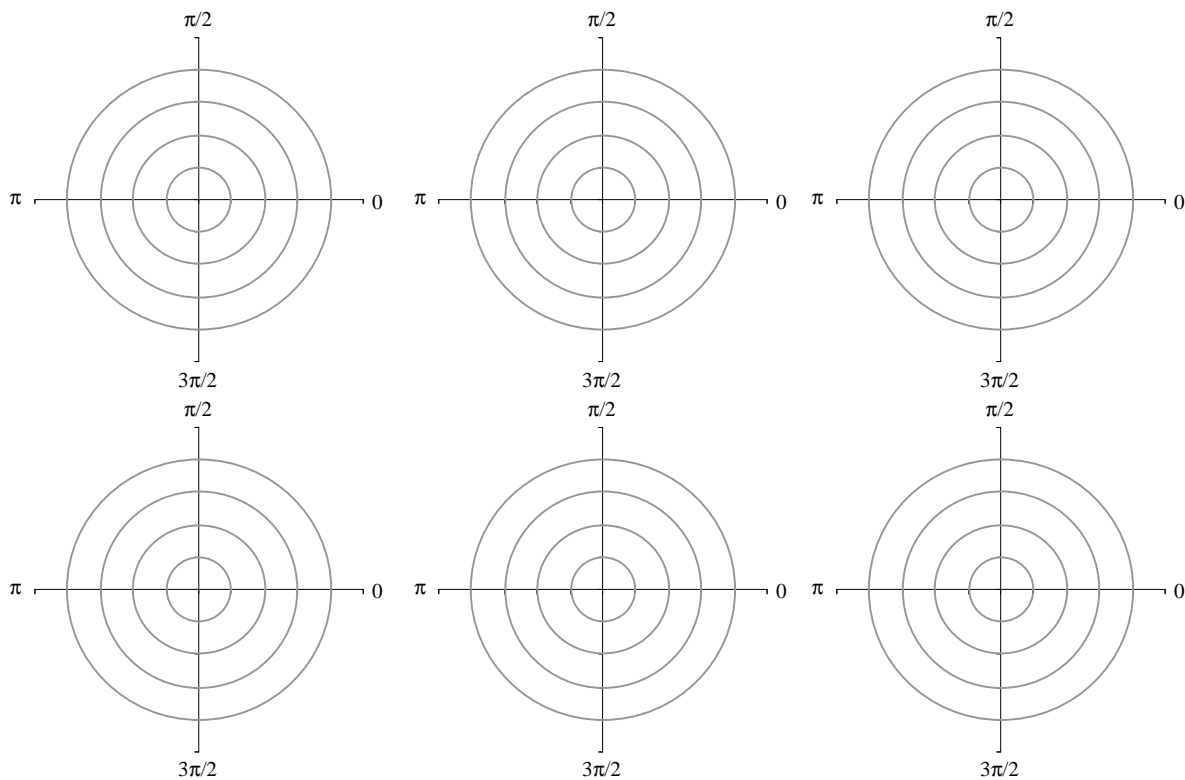
What you should learn
How to recognize special polar graphs

Limaçons:

Rose curves:

Circles:

Lemniscates:



Homework Assignment

Page(s)

Exercises