

Chapter 8

Polar Coordinates and Vectors

Read section 0.11 (Polar Graphing, page 160) for making the correct setting changes on the calculator, and for what to write down on paper.

8.2 Graphs of Polar Equations

Exercises

In each exercise, graph the function, or functions, given on the same system.

1. $r = 3 \sin(6\theta)$

2. $r = 2 \cos\left(\frac{5}{2}\theta\right)$

3. $r = \cos^2(5\theta) + \sin(3\theta) + .8$

4. $r = \sin^3(\theta) + 8 \sin(\theta) \cos^3(\theta)$

5. $r = 4 \cos(8\theta)$

6. $r = 4 \cos(16\theta)$

7. $r_1 = 4 \cos(3\theta), \quad r_2 = 4 \sin(3\theta), \quad r_3 = -4 \sin(3\theta),$

$$r_4 = 4 \cos(6\theta), \quad r_5 = 4 \cos\left(3\left(\theta - \frac{\pi}{3}\right)\right), \quad r_6 = 4$$

8. $r_1 = 4 \cos(8\theta), \quad r_2 = 4 \cos(4\theta), \quad r_3 = 4 \cos(2\theta),$

$$r_4 = 4 \sin(8\theta), \quad r_5 = 4 \sin(4\theta), \quad r_6 = 4 \sin(2\theta)$$