Section 6.4
Graphs of Polar Equations

Using Polar Grids to Graph Polar Equations

A polar equation is an equation whose variables are $r$ and $\theta$. The graph of a polar equation is the set of all points whose polar coordinates satisfy the equation. We use polar grids to graph polar equations.

Graphing a Polar Equation by Point Plotting

Graphing $r = 4 \cos \theta$

Circles in Polar Coordinates
The graphs of $r = a \cos \theta$ and $r = a \sin \theta$ are circles.
**Example**

Graph the equation

\[ r = 3 + \cos \theta \]

**Example**

Graph the equation

\[ r = \sin 2\theta \]

**Example**

Graph the equation

\[ r = 4(1 - \cos \theta) \]