

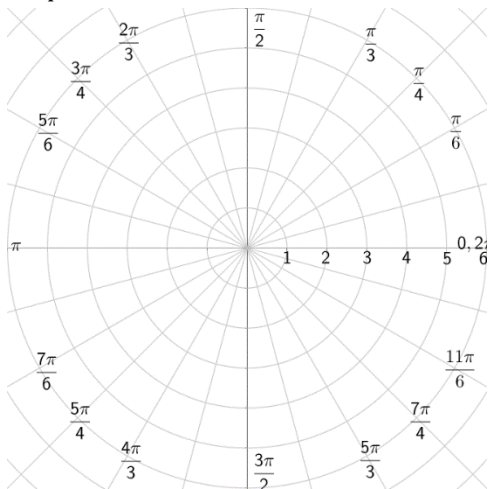
Precalculus

7-08 Graphs of Polar Equations

To Graph Polar Equations Using a Table

- Pick _____ and calculate _____

Graph $r = 3 \cos \theta$



Symmetry Tests (make the replacement and to simplify to original equation)

- Line $\theta = \frac{\pi}{2}$
 - Replace (r, θ) with $(r, \pi - \theta)$ or $(-r, -\theta)$
- Polar Axis
 - Replace (r, θ) with $(r, -\theta)$ or $(-r, \pi - \theta)$
- Pole
 - Replace (r, θ) with $(r, \pi + \theta)$ or $(-r, \theta)$
- Quick tests
 - If it is a function of _____, then _____ symmetry
 - If it is a function of _____, then _____ symmetry

Find the symmetry of $\theta = \frac{\pi}{4}$

Find the symmetry of $r = 2(1 - \sin \theta)$

Maximums and Zeros of Polar Equations

- Maximums occurs when _____ is largest.
 - Find angles where the trigonometric function is at its _____.
- Zeros occur when _____.
 - Find angles where the trigonometric function is _____.

Find the zeros and maximum r values of $r = 5 \cos 2\theta$