

Section 11.2: Polar coordinates

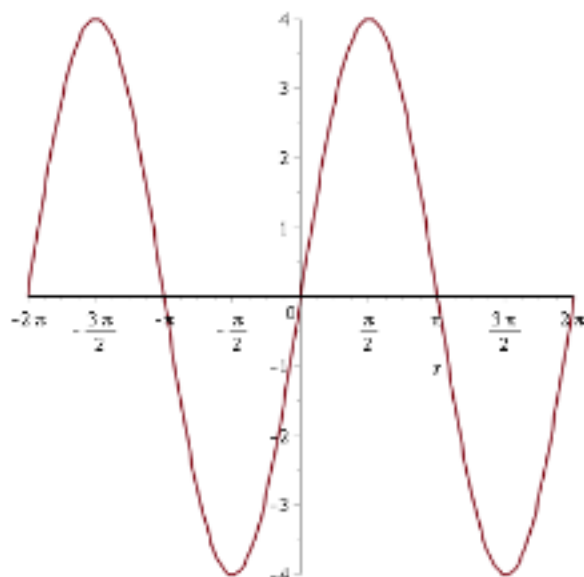
Group work:

Problem 1 Plot the following (polar) points in the xy -plane and then rewrite them as rectangular coordinates.

(a) $\left(3, \frac{5\pi}{4}\right)$ (b) $\left(3, -\frac{5\pi}{4}\right)$ (c) $\left(-3, \frac{5\pi}{4}\right)$ (d) $\left(-3, -\frac{5\pi}{4}\right)$

Problem 2 Rewrite the rectangular point $(3, 5)$ in polar coordinates in three different ways.

Problem 3 The graph of the curve $r = 4 \sin \theta$ is a circle. Use the graph below to sketch this circle. Can you verify this algebraically? What is the period of the polar curve? Is $0 \leq \theta \leq 2\pi$ necessary to complete the graph?



Problem 4 Graph $r = 2 + 4 \cos \theta$ using the “Cartesian-to-Polar” method.
