

Problem 1. Convert the following polar coordinates to rectangular coordinates:

(a) $(r, \theta) = (2, \pi/6)$

(b) $(r, \theta) = (3, \pi)$

Problem 2. Convert the following rectangular coordinates to polar coordinates:

(a) $(x, y) = (-2, -1)$

(b) $(x, y) = (-2, 1)$

Problem 3. Consider the equation $r \cos \theta = 3$.

a) Give an example of a point (r, θ) satisfying this equation.

b) In words, describe the set of all points (r, θ) satisfying this equation.