

MA114 Summer 2018
Worksheet 24 – Polar Coordinates – 7/25/18

1. Convert from rectangular to polar coordinates:

a) $(1, \sqrt{3})$

b) $(-1, 0)$

c) $(2, -2)$

2. Convert from polar to rectangular coordinates:

a) $(2, \pi/6)$

b) $(-1, \pi/2)$

c) $(1, \pi/4)$

3. Sketch the graph of the polar curves:

a) $\theta = 3\pi/4$

b) $r = \pi$

c) $r = \cos \theta$

d) $r = \cos(3\theta)$

e) $r = 2 + 4 \cos(\theta)$

4. Find a polar equation for:

a) $(x - 2)^2 + y^2 = 9$

b) $y = 4$

c) $x = 4$

d) $xy = 4$

e) The line through the origin with slope $1/3$.

5. Convert the equation of the circle $r = 2 \sin(\theta)$ to Cartesian coordinates and find its center and radius.