

1. Find the rectangular coordinates of the point given in polar coordinates.

a.  $(-2, 5\pi/6)$  \_\_\_\_\_ b.  $(0, \pi/4)$  \_\_\_\_\_

2. Find the polar coordinates with the given rectangular coordinates.

a.  $(-3, 1)$  \_\_\_\_\_ b.  $(\frac{1}{2}, -\frac{1}{2})$  \_\_\_\_\_

3. Give three sets of polar coordinates for the point a.  $(-2, -\pi/3)$  \_\_\_\_\_

b.  $(1, \pi/8)$  \_\_\_\_\_

4. Describe the graph of the following:

a.  $r = 1 + 4 \cos \theta$  \_\_\_\_\_

b.  $r = \sin 2\theta$  \_\_\_\_\_

c.  $r = 1 + \cos \theta$  \_\_\_\_\_

d.  $r = 3 + 2\cos \theta$  \_\_\_\_\_

e.  $\theta = 5\pi/6$  \_\_\_\_\_

f.  $r = 9$  \_\_\_\_\_

5. Graph: a.  $r = 1 + 3 \cos \theta$ .

b.  $r = 3$

c.  $\theta = -\pi/4$

d.  $r = -2 + \sin \theta$

e.  $r = \sin 4 \theta$

(Graph rectangular graph first)