Florida International University
Trigonometry-MAC1114
Pre-Class Assignment 11

Spring 2018
Due Date: Friday, 3/30

Name: _____

SHOW ALL YOUR WORK FOR EACH PROBLEM TO GET FULL CREDIT. PLEASE BE NEAT.

Direction: Read through sections 7.3, 7.4 in your book and answer the following questions.

1. Plot the following points in a rectangular coordinate system.

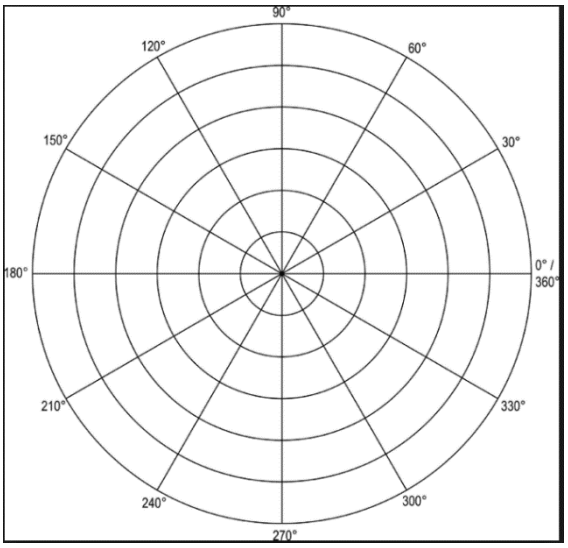
   a) (-2, 3) b) (-2, -3) c) (2, -3)

2. Identify the shape of following equations and then graph them in a rectangular coordinate system.
   a) $x^2 + y^2 = 1$ b) y= -3 c) x= 3

3. Plot the point $\left(3, \frac{\pi}{6}\right)$ in polar coordinates. (Section 7.3)

   a) Find other polar coordinates (r, θ) of this same point for which $r > 0, \quad 2\pi \le \theta < 4\pi$.

   b) Find the rectangular coordinates of the point.



5. Convert the point from rectangular coordinates to polar coordinates. (Section 7.3)

$(-3,3)$

4. Transform the polar equation to an equation in rectangular coordinates. Identify the graph of the equation (Section 7.3)

$$r\cos\theta = 4$$

5. a. Find the exact value of r for $\theta = \frac{\pi}{6}, \theta = \pi, and\ \theta = \frac{2\pi}{3}$ if $r = 1 + 2\sin(\theta)$.

   b. Plot the pairs, $(r,\ \theta)$, which you have found in part-a, in the polar grid (Section 7.3)

6. True or False. If false, correct it.
   a. $\cos(-\theta) = \cos(\theta)$

   b. $\sin(-\theta) = \sin(\theta)$

   c. $-r = 1 - \cos(-\theta)$ is the same as $r = -1 - \cos(\theta)$.

7. Identify the equation given in polar coordinates (as a line, circle, cardioid, limaçon, rose). Name the center and the radius if it is a circle; name the type if it is a limaçon, state the number of pedals if it is a rose. (Section 7.4)

   a. $r = 2\cos\theta$

   b. $\theta = \frac{\pi}{2}$

   c. $r = -3\sin 4\theta$

   d. $r = 2 + 4\sin\theta$

   e. $r = 5 - 2\cos(\theta)$