Polar Quiz Analysis 2016-17 Polar Troller_____
[30 points] Period: _____

1 In Trig last year you learned that the period of the function $y = 3\cos(12x)$ is $\frac{\pi}{6}$ and that the amplitude is 3. Explain how both of these connect to the graph of $r = 3\cos(12\theta)$ in polar. [3]

amp_____ period_____

2. Consider the polar rose $r = 5\sin(15\theta)$

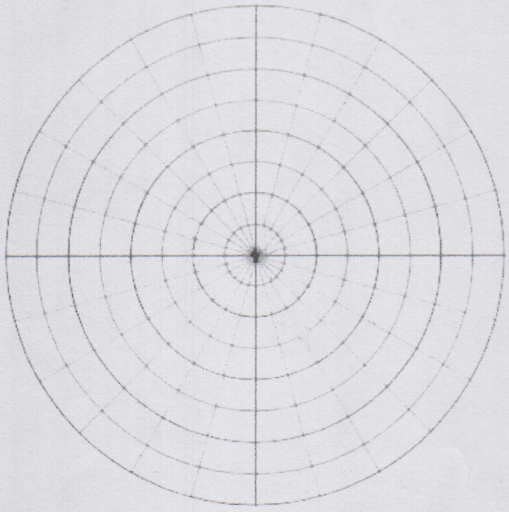
a) How many visible petals will there be? _____ [2]

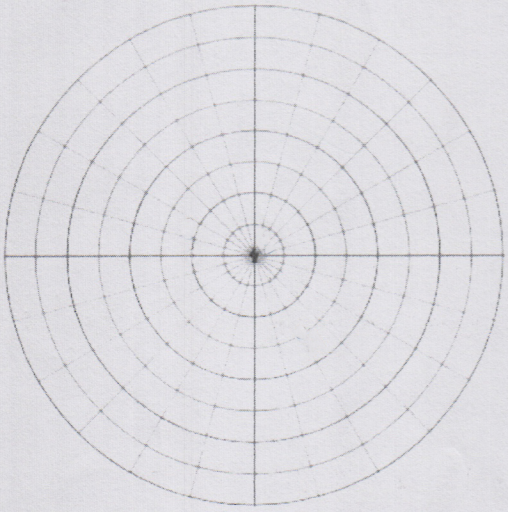
b)Will there be a petal along the positive y axis, negative y-axis, both or neither? _____[2]

c) The line of symmetry for the first petal in Quadrant I, is at $\theta =$ _____[2]

3. On the polar graph paper below left plot and label the 3 points: [3]

A: $(-3, -\frac{4\pi}{3})$ B: $(0, \frac{\pi}{3})$ C: $(-2,0)$





4. Above right, accurately graph $r = -2 + 5sin\Theta$. [5]

5. Roughly graph the system of equations r = 2 and $r = 4sin2\Theta$ below, and clearly state all of the solutions to the system as ordered pairs in numerical order (in radians). Show all work.

Graph: [6]

Solutions: _____

6. Convert the point (-5, -5) into polar coordinates in radians. [2]

7. Convert the point $(r, \Theta) = (-2, 5\pi/6)$ into simplified rectangular form. [2]

8. Convert the hyperbola $r^2 = 20/sin2\theta$ into rectangular. [3]