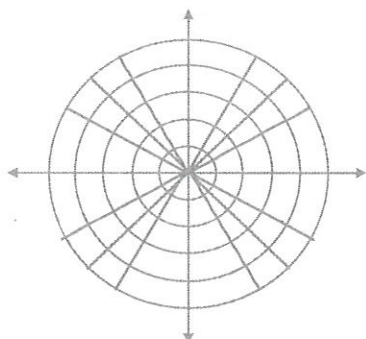


30 points

1. Consider the polar point $\left(-2, \frac{21\pi}{4}\right)$

a) Plot the point



b) Find 3 different polar coordinates for this point in the domain $-2\pi \leq \theta \leq 2\pi$
Give all answers in radians. [1 pt each]

_____, _____, _____

c) Convert the point to rectangular coordinates. [1 point]

2. Write the corresponding letter that matches each rectangular equations on the left with the corresponding polar equations on the right. [6 pts]

$x^2 + y^2 = 25$ _____	A. $r = 10\sec\theta$
$y = 10$ _____	B. $r = 6\sin\theta$
$x = 6y$ _____	C. $r = 10\csc\theta$
$x^2 + (y - 3)^2 = 9$ _____	D. $\theta = \tan^{-1}\left(\frac{1}{6}\right)$
$(x - 3)^2 + y^2 = 9$ _____	E. $r = 5$
$x = 10$ _____	F. $r = 6\cos\theta$

3. Convert the equation to rectangular form.

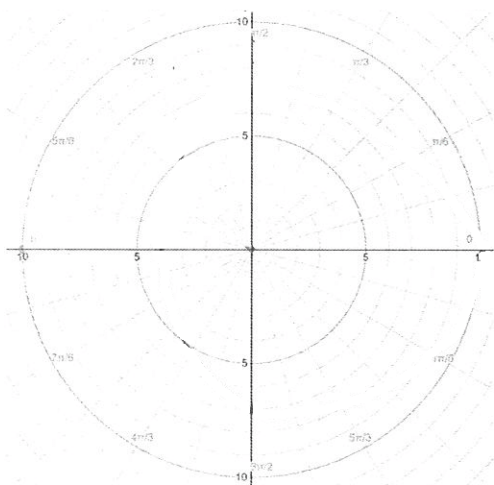
Write your answer in the form $Ax^2 + Bx + Cy^2 + Dy + E = 0$

[4 pts]

$$r = \frac{3}{1-2\cos\theta}$$

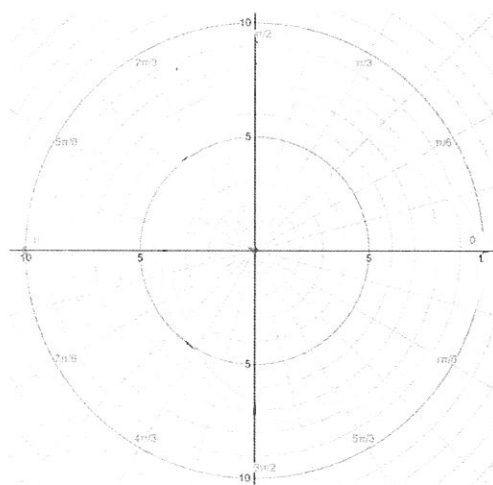
4. Graph each function. Then name each graph according to its most specific name. [4 pts each]

a) $r = 4 - 6\sin\theta$



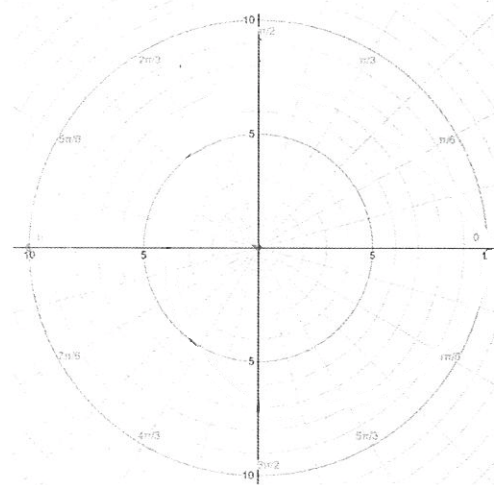
Name: _____

c) $r = 7 + 3\cos\theta$



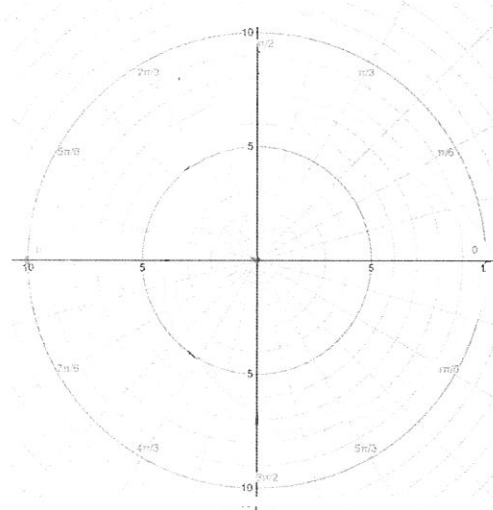
Name: _____

b) $r = 7\sin 3\theta$



Name: _____

d) $\theta = \pi r$



Name: _____