

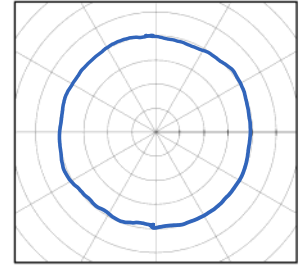
# Day 12 HW KEY

Monday, March 9, 2015 2:55 PM

Determine the equation and then draw a graph.

- 1) Circle with radius 4; center at origin:

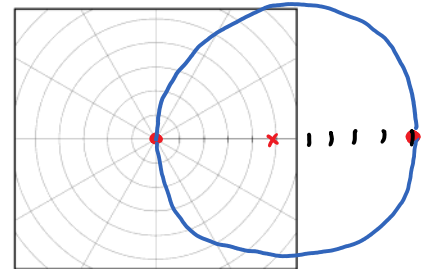
$$r = 4$$



- 2) Circle with radius 5; one endpoint of diameter lies on origin; lying on the positive x-axis:

$$r = 10 \cos \theta$$

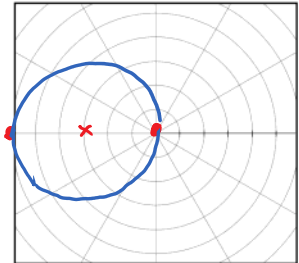
*→ diameter = 10*



- 3) Circle with radius 3; one endpoint of diameter lies on origin; lying on the negative x-axis:

$$r = -6 \cos \theta$$

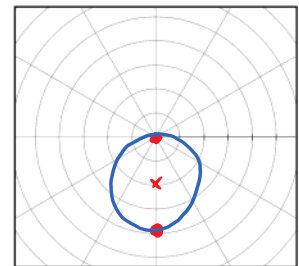
*→ diameter = 6*



- 4) Circle with radius 2; one endpoint of diameter lies on origin; lying on the negative y-axis:

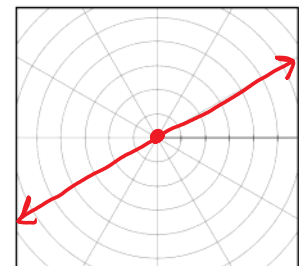
$$r = -4 \sin \theta$$

*diameter = 4*



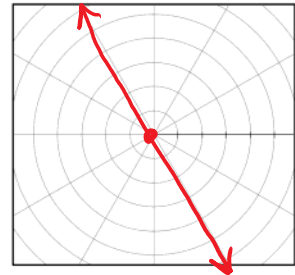
- 5) Line with positive slope (passes through 1<sup>st</sup> and 3<sup>rd</sup> quadrant):

$$\text{one possibility: } r = \frac{\pi}{6}$$



6) Line with negative slope (passes through 2<sup>nd</sup> and 4<sup>th</sup> quadrant):

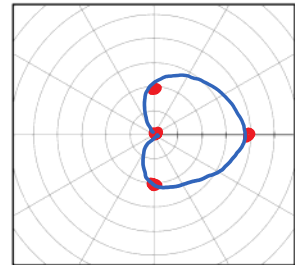
one possibility:  $r = \frac{2\pi}{3}$



7) Cardioid with x-intercepts  $(4, 0^\circ)$  and  $(0, 180^\circ)$ ; y-intercepts  $\pm 2$ :

$r = 2 + 2\cos\theta$

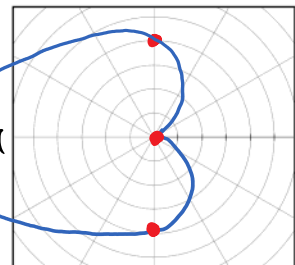
Give the y-intercepts in polar form:  $(2, 90^\circ)$  &  $(2, 270^\circ)$   
 OR  $(-2, 270^\circ)$  &  $(-2, -90^\circ)$



8) Cardioid with x-intercepts  $(0, 0^\circ)$  and  $(8, 180^\circ)$ ; y-intercepts  $\pm 4$ :

$r = 4 - 4\cos\theta$

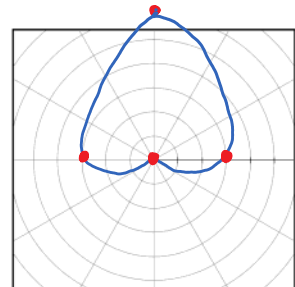
Give the y-intercepts in polar form:  $(4, 90^\circ)$  &  $(4, 270^\circ)$   
 OR  $(-4, 270^\circ)$  &  $(-4, -90^\circ)$



9) Cardioid with y-intercepts  $(6, 90^\circ)$  and  $(0, 270^\circ)$ ; x-intercepts  $\pm 3$ :

$r = 3 + 3\sin\theta$

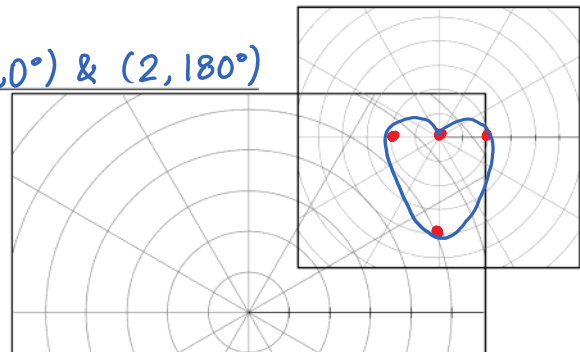
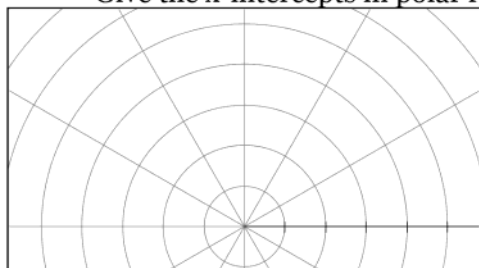
Give the x-intercepts in polar form:  $(3, 0^\circ)$  &  $(3, 180^\circ)$   
 OR  $(-3, 180^\circ)$  &  $(-3, 0^\circ)$

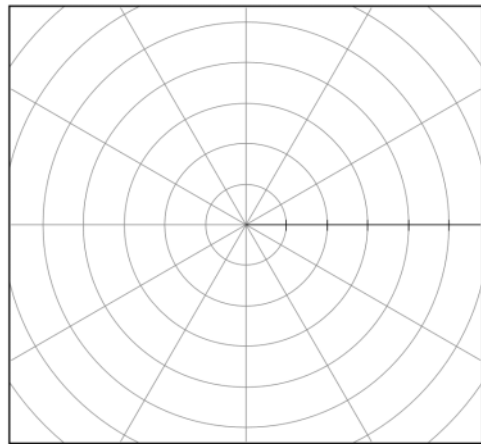
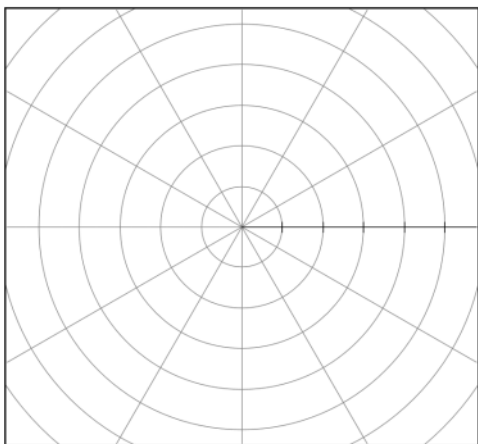
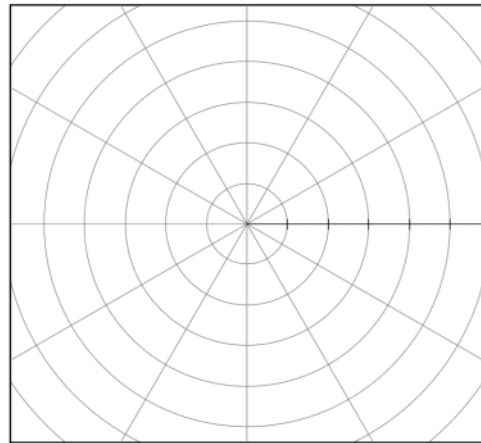
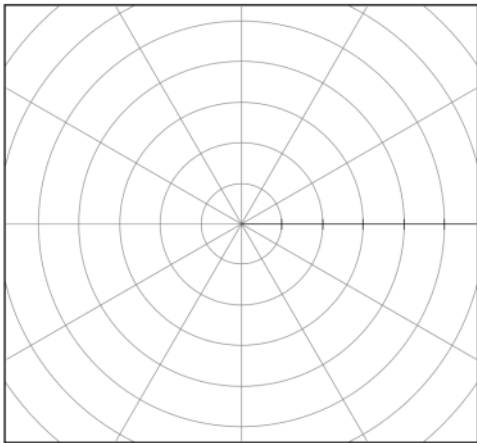
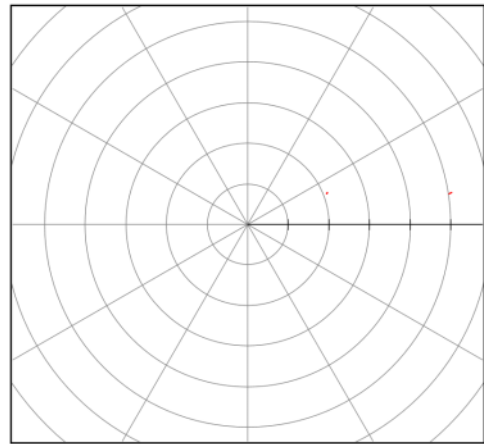
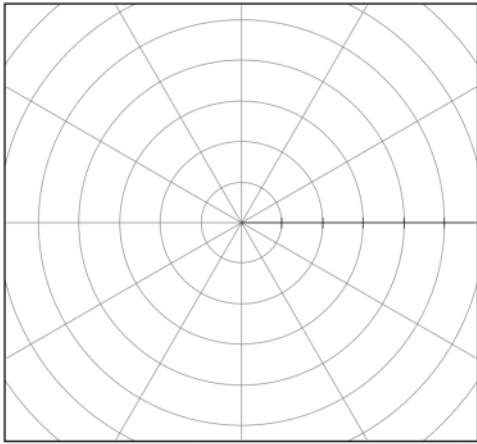


10) Cardioid with y-intercepts  $(0, 90^\circ)$  and  $(4, 270^\circ)$ ; x-intercepts  $\pm 2$ :

$r = 2 - 2\sin\theta$

Give the x-intercepts in polar form:  $(2, 0^\circ)$  &  $(2, 180^\circ)$





A large rectangular area with a red vertical line on the left and blue horizontal lines, resembling a ledger or table grid. The grid is empty and occupies most of the page.