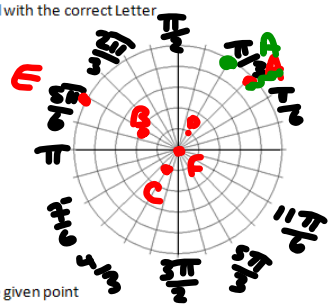
HW 9-1

Polar Coordinates: Work may be done on this sheet

1) Plot the following points in a polar coordinate system: Label with the correct Letter

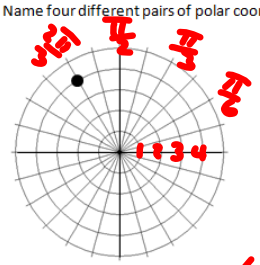
$A(5, \frac{\pi}{3})$ $B(-2, \frac{-\pi}{6})$ $C(1, \frac{-2\pi}{3})$ $D(-1, \frac{5\pi}{4})$

$E(-5, \frac{11\pi}{6})$ $F(0, \pi)$



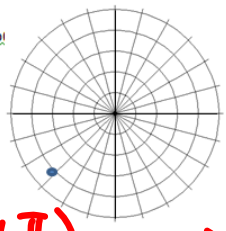
2) Name four different pairs of polar coordinates that represent the given point

a)



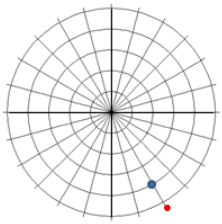
$(4, \frac{2\pi}{3})$
$(4, -\frac{4\pi}{3})$
$(-4, -\frac{\pi}{3})$
$(-4, \frac{5\pi}{3})$

b)



$(-4, \frac{\pi}{4})$
$(-4, -\frac{7\pi}{4})$
$(4, -\frac{3\pi}{4})$
$(4, \frac{5\pi}{4})$

c)



$(4, \frac{5\pi}{3})$
$(4, -\frac{\pi}{3})$
$(-4, \frac{2\pi}{3})$
$(-4, -\frac{4\pi}{3})$

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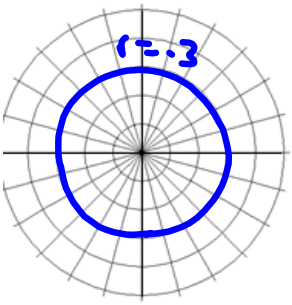
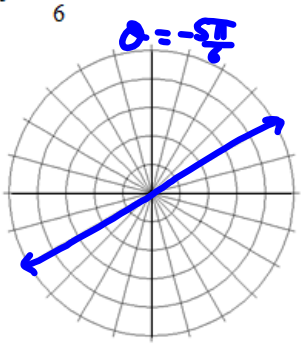
3) Graph each polar equation:

a) $r = -3$



b) $\theta = \frac{-5\pi}{6}$



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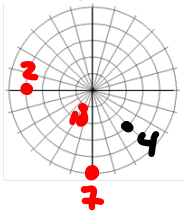
HW 9-2

13. $30° \rightarrow \frac{\pi}{6}$

a. $(4, \frac{\pi}{6})$
$(4, -\frac{11\pi}{6})$
$(-4, -\frac{5\pi}{6})$
$(4, \frac{7\pi}{6})$

b. $300° \rightarrow \frac{5\pi}{3}$
$(5, \frac{5\pi}{3})$
$(5, -\frac{\pi}{3})$
$(-5, \frac{2\pi}{3})$
$(-5, -\frac{4\pi}{3})$



18) $(2, \frac{5\pi}{6})$
20) $(4, \frac{\pi}{6})$
22) $(6, \frac{2\pi}{3})$
24) $(1, \frac{3\pi}{2})$

c. $150° \rightarrow \frac{5\pi}{6}$
$(2, \frac{5\pi}{6})$ $(-2, -\frac{\pi}{6})$
$(2, -\frac{7\pi}{6})$ $(-2, \frac{11\pi}{6})$

26) $(3, \frac{4\pi}{3})$

29) $(4.643, 2.230)$

49) $r = \frac{5}{\cos\theta} \rightarrow r = 5\sec\theta$

51) $r = \pm 6$

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HW 9-3

14) $A(2,\frac{\pi}{4}),(-2,\frac{5\pi}{4})(2,-\frac{7\pi}{4})$ $B)(5,\frac{3\pi}{2})(5,\frac{-\pi}{2}),(-5,\frac{\pi}{2})$

$C)(4,\frac{11\pi}{12})(4,\frac{-13\pi}{12})(-4,\frac{-\pi}{12})D(3,\frac{5\pi}{3})(3,-\frac{\pi}{3})(-3,\frac{2\pi}{3})$

17.) $(6,\frac{5\pi}{3})$ $23)(2,\frac{\pi}{3})$ $36)(\frac{7\sqrt{3}}{2},\frac{7}{2})$ 37) $(-1,\sqrt{3})$

40) $(\frac{\sqrt{2}}{2},\frac{-\sqrt{2}}{2})$ $41)(3\sqrt{3},-3)$ 44)(-4.50,-2.17) 45) (1.3,-3.99)

59) $x^2+y^2=25$ 61) y=2 62) $x^2+y^2+3y=0$

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HW 9-4

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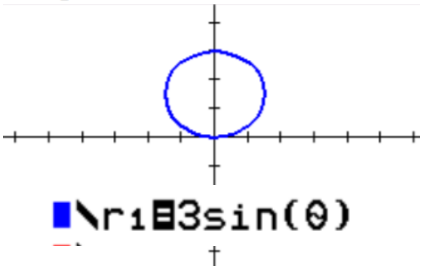
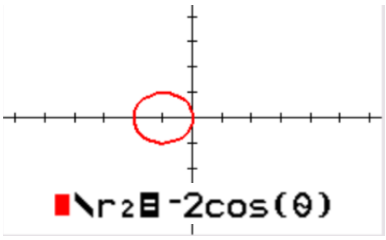
10)$(1.2,\frac{4\pi}{3})(-1.2,\frac{\pi}{3})(-1.2,-\frac{5\pi}{3})$

24)$(1,\frac{3\pi}{2})$





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79. d 82. c

80. i 83. j

81. g 84. f