25.

$x = 2\sin\theta$

$y = 2\cos\theta$

$x^2 + y^2 = 2^2$

$0 \le t \le \frac{3\pi}{2}$

$\sin^2\theta + \cos^2\theta = 1$

$\left(\frac{x}{2}\right)^2 + \left(\frac{y}{2}\right)^2 = 1$

$\frac{x^2}{4} + \frac{y^2}{4} = 1$

$x^2 + y^2 = 4$

32. $(-2,-4)$ $r=2$

$$(x+2)^2+(y+4)^2=4$$

$t=x$

$$(t+2)^2+(y+4)^2=4$$

$$(y+4)^2=4-(t+2)^2$$

$$y+4=\pm\sqrt{4-(t+2)^2}$$

$$y=-4\pm\sqrt{4-(t+2)^2}$$

$x=t$

$$y=-4\pm\sqrt{4-(t+2)^2}$$

33. $x = 2 - |t|$

$y = t - .5$

$-3 \leq t \leq 3$

t	x	y
-3		
-2		
-1		
0		
1		
2		
3		

Given $x - 1 + 3y = 2$

$x + 3y = 3$

$x = t$

$t + 3y = 3$

$3y = 3 - t$

$y = \frac{3-t}{3}$

$x = t$

$y = \frac{3-t}{3}$

14. $x = 5 - 3t$

$y = 2 + t$ ★

$-1 \leq t \leq 3$

t	x	y
-1	8	1
0	5	2
1	2	3
2	-1	4
3	-4	5

$t = y - 2$

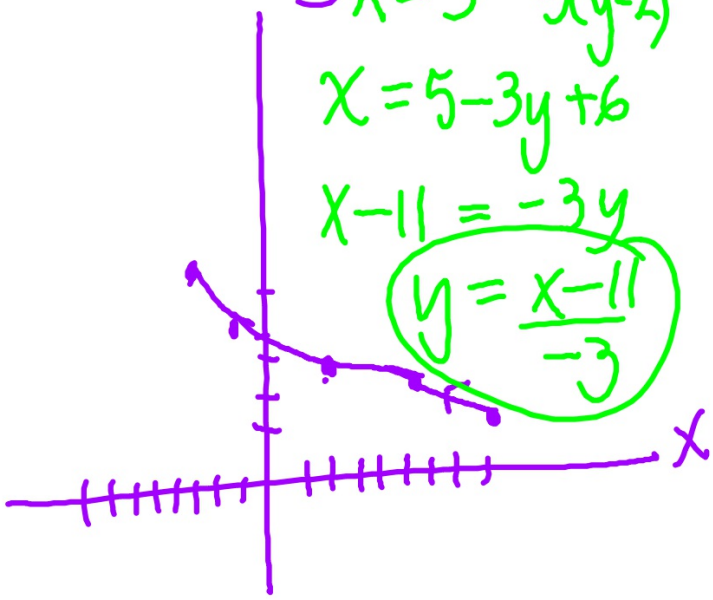
$x = 5 - 3t$

$x = 5 - 3(y-2)$

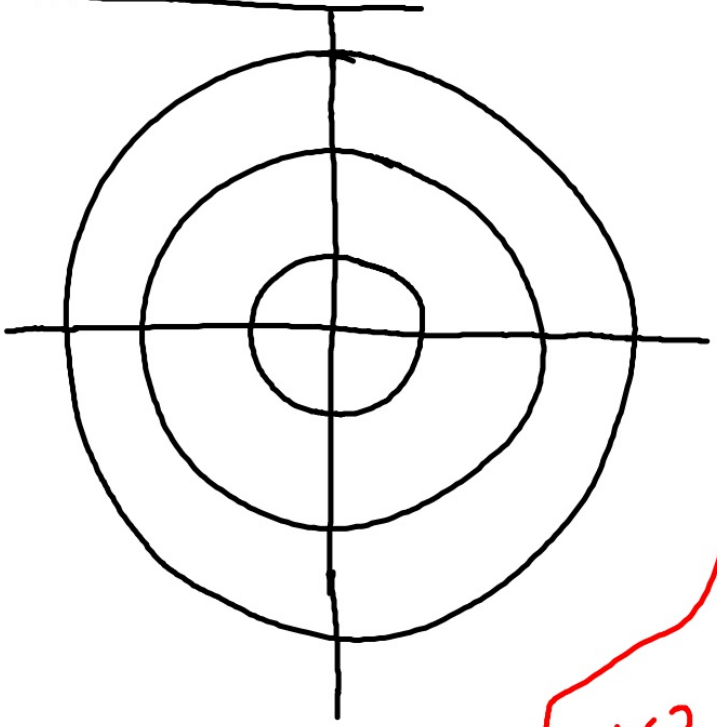
$x = 5 - 3y + 6$

$x - 11 = -3y$

$y = \frac{x-11}{-3}$



Polar Points



Polar Plane

- origin — pole
- ordered pairs

$(x, y) \rightarrow (r, \theta)$

$x = r\cos\theta$

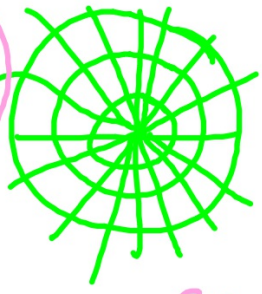
$y = r\sin\theta$

$x^2 + y^2 = r^2$

$\tan\theta = \frac{y}{x}$

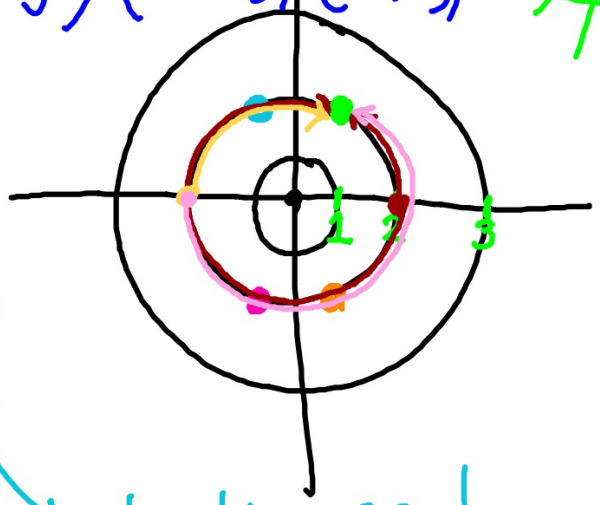
Plot the point & state 3 additional names

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



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

↳ not "go to" is "go that much"



$\frac{2}{3}$ | $\frac{1}{4}$

C. $(2, \frac{-\pi}{3})$

D. $(-2, \frac{-\pi}{3})$

→ clockwise turn