

1. Give parametric equations  $x(t)$ ,  $y(t)$ , and bounds for  $t$  that produce a line segment from  $(2,5)$  to  $(1,7)$ .

$$\begin{aligned} x(t) &= 2 - 2t \\ y(t) &= 5 + 2t \end{aligned}$$

$$0 \leq t \leq 1$$

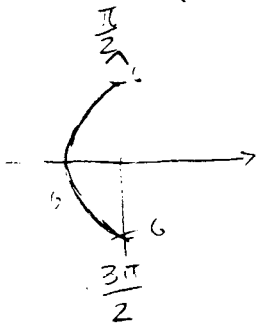
BASIC FORM

$$\begin{aligned} x(t) &= x_0 - (x_0 - x_1)t \\ y(t) &= y_0 - (y_0 - y_1)t \end{aligned}$$

$$0 \leq t \leq 1$$

Nice!

2. Give parametric equations  $x(t)$ ,  $y(t)$ , and bounds for  $t$  that produce the left half of a circle (centered at the origin) of radius 6 traversed counterclockwise.



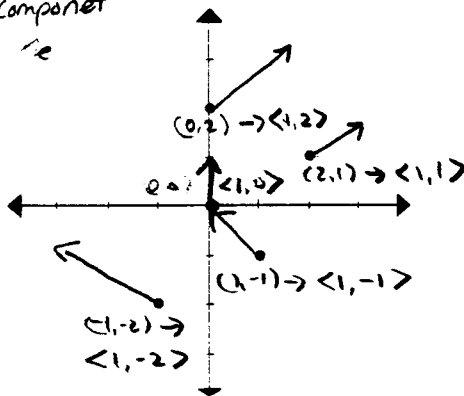
$$\begin{aligned} x(t) &= 6 \cos(t) \\ y(t) &= 6 \sin(t) \end{aligned}$$

$$\frac{\pi}{2} \leq t \leq \frac{3\pi}{2}$$

Good

3. Plot the vector field  $F(x,y) = yi + j$  for the points  $(0,0)$ ,  $(2,1)$ ,  $(0,2)$ ,  $(1,-1)$ , and  $(-1,-2)$  indicated on the coordinate system below.

5/5  
 Since the x-component is always in  $\hat{i}$   
 from  $y\hat{i} + 1\hat{j}$   
 x is always  $\hat{i}$



PTS IN	PTS OUT
$(0,0)$	$\langle 1, 0 \rangle$
$(2,1)$	$\langle 1, 1 \rangle$
$(0,2)$	$\langle 1, 2 \rangle$
$(1,-1)$	$\langle 1, -1 \rangle$
$(-1,-2)$	$\langle 1, -2 \rangle$