

Each problem is worth 5 points. For full credit indicate clearly how you reached your answer.

1. Give parametric equations $x(t)$, $y(t)$, and bounds for t that produce a line segment from $(3, -2)$ to $(1, 7)$.

$$\underline{x(t) = 3 - 2t}$$

$$\underline{y(t) = -2 + 9t}$$

$$\underline{\text{for } 0 \leq t \leq 1}$$

Correct!

Check:

$$x(0) = 3 \checkmark$$

$$x(1) = 1 \checkmark$$

$$y(0) = -2 \checkmark$$

$$y(1) = 7 \checkmark$$

2. Give parametric equations $x(t)$, $y(t)$, and bounds for t that produce the third-quadrant portion of a circle (centered at the origin) of radius 5, traversed counterclockwise.

$$\underline{x(t) = 5 \cos t}$$

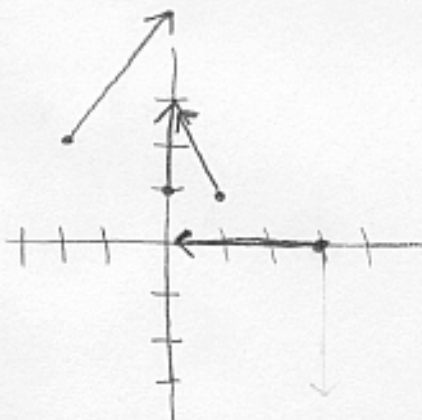
$$\underline{y(t) = 5 \sin t}$$

$$\underline{\text{for } \pi \leq t \leq 3\pi/2}$$

Excellent!



3. Plot the vector field $\vec{F}(x, y) = \langle -x, 2y \rangle$ for the points $(0, 1)$, $(3, 0)$, $(1, 1)$ and $(-2, 2)$.



$$\vec{F}(0, 1) = \langle 0, 2 \rangle \quad \text{up } 2$$

$$\vec{F}(3, 0) = \langle -3, 0 \rangle \quad \text{left } 3$$

$$\vec{F}(1, 1) = \langle -1, 2 \rangle \quad \text{left } 1, \text{ up } 2$$

$$\vec{F}(-2, 2) = \langle 2, 4 \rangle \quad \text{right } 2, \text{ up } 4$$

Excellent