

Each problem is worth 5 points. Clear and complete justification is required for full credit.

1. Give parametric equations $x(t)$, $y(t)$, $z(t)$ and bounds for t that produce a path from $(4, -2, 7)$ to $(0, -2, 8)$.

$$\underline{x(t) = -4t + 4}$$

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

$$\underline{z(t) = t + 7}$$

Good

$$x(0) = 4$$

$$x(1) = 0$$

$$y(0) = -2$$

$$y(1) = -2$$

$$z(0) = 7$$

$$z(1) = 8$$

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

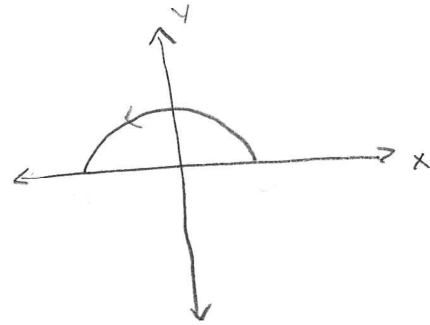
2. Give parametric equations $x(t)$, $y(t)$, $z(t)$ and bounds for t that produce the top half of a counterclockwise circle with radius 3 centered at the origin in the plane $z = 5$ starting at $(3, 0, 5)$ and ending at $(-3, 0, 5)$.

$$\underline{x(t) = 3 \cos(t)}$$

$$\underline{y(t) = 3 \sin(t)}$$

$$\underline{z(t) = 5}$$

Great



$$\underline{0 \leq t \leq \pi}$$