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 line segment from (0, 3, -5) to (4, 5, 7).

$$x(t) = 0 + 4t$$
$$y(t) = 3 + 2t$$
$$z(t) = -5 + 12t$$
$$0 \leq t \leq 1$$

Great!

$$x(0) = 0 \qquad x(1) = 4$$
$$y(0) = 3 \qquad y(1) = 5$$
$$z(0) = -5 \qquad z(1) = 7$$

2. Give parametric equations $x(t)$ and $y(t)$ and bounds for t that produce the portion of a circle with radius $\sqrt{10}$, centered at the origin, beginning at $(-\sqrt{5}, \sqrt{5})$ and continuing counterclockwise to $(\sqrt{5}, -\sqrt{5})$.

$$x(t) = 5\cos(t)$$
$$y(t) = 5\sin(t)$$

$$\frac{3\pi}{4} \leq t \leq \frac{7\pi}{4}$$

Excellent

$(-\sqrt{5}, \sqrt{5})$

$(\sqrt{5}, -\sqrt{5})$

$\frac{6\pi}{4}$