Quiz 1 **Calc 3** **10/30/24**

1. Give parametric equations $x(t), y(t), z(t)$ and bounds for t that produce a gory path from $(-2, 3, 1)$ to $(5, 4, 1)$.

vector $= \langle -2, 3, 1 \rangle \to \langle 5, 4, 1 \rangle$

$\iff \vec{r} = \langle -2+7t, 3+t, 0 \rangle$ (1-1)

$\implies x(t) = -2+7t$

$y(t) = 3+t$

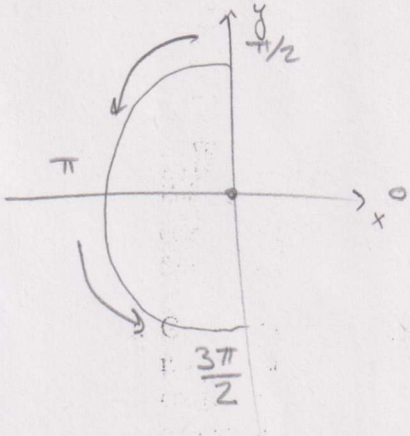
Great

$z(t) = 1 \to z$ stays constant at value 1.

$0 \le t \le 1$

2. Give parametric equations $x(t), y(t), z(t)$ and bounds for t that produce the half with negative x values of circle with radius 5 centered at $(0, 0, 2)$ in the plane $z = 2$ traversed counterclockwise (when viewed from above). That's the path this creepy ghost is following and I'm really scared!

- x half



$z(t) = 2 \to$ stays constant

$x(t) = 5\cos(t) \to$ radius 5

$y(t) = 5\sin(t) \to$ radius 5

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

Excellent!