Quiz 1 Calculus 3 10/26/21

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 (1, 5, 1) to (4, 3, 2).

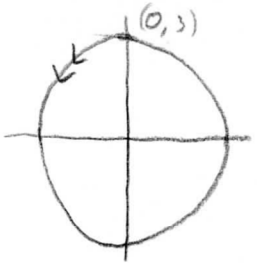
$x(t) = 1 + 3t$
$y(t) = 5 + (-2t)$
$z(t) = 1 + t$

$0 \le t \le 1$

Good

Check:
$x(0) = 1$ ✓ $x(1) = 4$ ✓
$y(0) = 5$ ✓ $y(1) = 3$ ✓
$z(0) = 1$ ✓ $z(1) = 2$ ✓

2. Give parametric equations $x(t)$ and $y(t)$ and bounds for t that produce a circle with radius 3 centered at the origin traversed 2 complete times beginning and ending at (0,3).



$x(t) = 3\cos(t)$
$y(t) = 3\sin(t)$

$\pi/2 \le t \le \frac{9\pi}{2}$

We start with $t = \pi/2$ so the starting point is (0,3). Since we are asked to traverse it twice, going to $5\pi/2$ is not enough, we need to travel it again up to $9\pi/2$

Nice!