Quiz 3 Calculus 3 10/31/2012

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 (7, 0, 2) to (2, –3, 1).

$t = 0 \longrightarrow t = 1$

$(7, 0, 2) \qquad (2, -3, 1)$

$x(t) = 7 + (-5)t$

$y(t) = 0 + (-3)t$

$z(t) = 2 + (-1)t$

$0 \leq t \leq 1$

Good

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 2 centered at the origin in the plane $z = 0$.

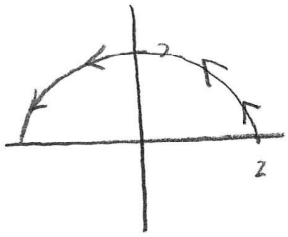
$x(t) = 2\cos(t)$

$y(t) = 2\sin(t)$

$z(t) = 0$

Great

$0 \leq t \leq \pi$



start: $(2, 0, 0)$

end: $(-2, 0, 0)$

$t = 0$ — $x(0) = 2\cos(0)$, $y(0) = 2\sin(0)$, $z(0) = 0$

$t = \pi$ — $x(\pi) = 2\cos(\pi)$, $y(\pi) = 0$, $z(\pi) = 0$