

(Easier) Practice Quiz 4    Calc 3    10/29/2007

1. Give parametric equations  $x(t)$ ,  $y(t)$ ,  $z(t)$  and bounds for  $t$  that produce a path from  $(3, 0, 1)$  to  $(5, 7, 1)$ .

$$x(t) = 3 + 2t$$

$$y(t) = 7t$$

$$z(t) = 1$$

$$\text{for } 0 \leq t \leq 1$$

2. Give parametric equations  $x(t)$ ,  $y(t)$ ,  $z(t)$  and bounds for  $t$  that produce a unit circle centered at the origin in the plane  $z = 0$  beginning at  $(1, 0, 0)$ .

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

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

$$z(t) = 0$$

$$\text{for } 0 \leq t \leq 2\pi$$

(Harder) Practice Quiz 4    Calc 3    10/29/2007

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

$$x(t) = -2 + (a + 2)t$$

$$y(t) = 7 + (b - 7)t$$

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

$$\text{for } 0 \leq t \leq 1$$

2. Give parametric equations  $x(t)$ ,  $y(t)$ ,  $z(t)$  and bounds for  $t$  that produce an arc of a circle centered at  $(0, 0, 3)$  in the plane  $z = 3$  of radius  $a$  beginning at  $(0, a, 3)$  and continuing counterclockwise through  $n$  quadrants.

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

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

$$z(t) = 3$$

$$\text{for } \pi/2 \leq t \leq \pi/2 + n \pi/2$$