(Easier) Practice Quiz 3

Calc 3

10/29/24

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).

 $\begin{aligned} x(t) &= 3 + 2t \\ y(t) &= 7t \\ z(t) &= 1 \\ \text{for } 0 \leq t \leq 1 \end{aligned}$

- 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).
 - $\begin{aligned} x(t) &= \cos t \\ y(t) &= \sin t \\ z(t) &= 0 \\ \text{for } 0 \leq t \leq 2\pi \end{aligned}$

(Harder) Practice Quiz 3

Calc 3

10/29/24

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).

$$\begin{split} x(t) &= -2 + (a+2)t \\ y(t) &= 7 + (b-7)t \\ z(t) &= 1 + (c-1)t \\ \text{for } 0 &\leq t \leq 1 \end{split}$$

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.

 $\begin{aligned} x(t) &= a \cos t \\ y(t) &= a \sin t \\ z(t) &= 3 \\ \text{for } \pi/2 \leq t \leq \pi/2 + n\pi/2 \end{aligned}$