

vector functions / parametric representations.

$$x = f(t)$$

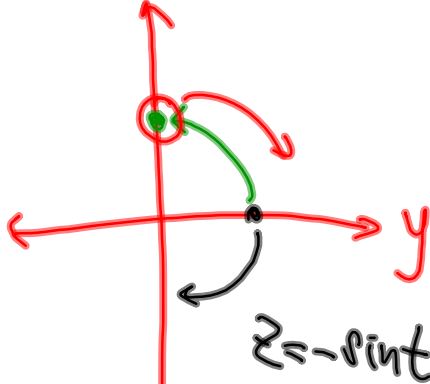
ex) eq of a straight line.

$$y = g(t)$$

$$z = h(t)$$

1) $r(t) = \langle t, \boxed{-2}, t^2 + 1 \rangle$ $z = x^2 + 1$
describe the graph

2) $r(t) = \langle 3, \cos t, \sin t \rangle$



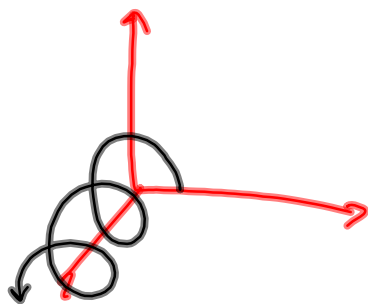
$$\left. \begin{array}{l} y = \cos t \\ z = \sin t \end{array} \right\} \begin{array}{l} y^2 + z^2 = \cos^2 t + \sin^2 t \\ = 1 \end{array}$$

$$0 \leq t \leq 2\pi$$

$$\begin{aligned} y &= \cos\left(t - \frac{\pi}{2}\right) \\ z &= -\sin\left(t - \frac{\pi}{2}\right) \end{aligned}$$

$$\begin{aligned} y &= \cos\left(\frac{t}{\frac{\pi}{6}} - \frac{\pi}{2}\right) \\ z &= -\sin\left(\frac{t}{\frac{\pi}{6}} - \frac{\pi}{2}\right) \end{aligned}$$

$$r(t) = \langle t, \cos t, \sin t \rangle$$



$$r(t) = \langle t, 2 \cos t, \sin t \rangle$$

$$r(t) = \langle t, t \cos t, t \sin t \rangle$$