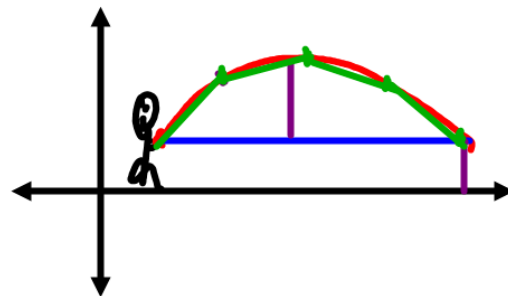
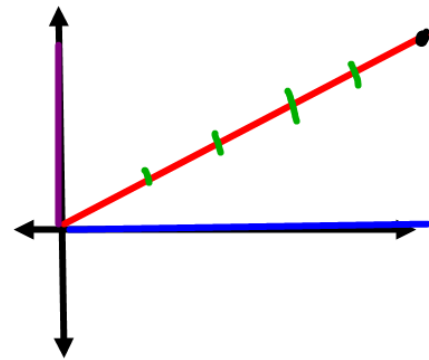


3.6 Parametric Equation



p199
9. $\begin{cases} x(t) = 3t \\ y(t) = t-2 \end{cases}$ for $-4 \leq t \leq 4$

Graph Made

| t | X | Y |
|----|-----|--------------|
| -4 | -12 | -6 (-12, -6) |
| -3 | -9 | -5 (-9, -5) |
| -2 | -6 | -4 |
| -1 | -3 | -3 |
| 0 | 0 | -2 |
| 1 | 3 | -1 |
| 2 | 6 | 0 |
| 3 | 9 | 1 |
| 4 | 12 | 2 |

$\begin{cases} x(t) = 3t \\ y(t) = t-2 \end{cases}$

Write as a single equation in terms of x & y

Write $x = 3t$
 $y = t-2$

Solve one equation for t

$$y = t - 2$$

$$y + 2 = t$$

Substitute into other equation

$$x = 3t$$

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

$$x = 3y + 6$$

$$-6 \quad -6$$

$$\frac{x-6}{3} = \frac{3y}{3}$$

$$\frac{1}{3}x - 2 = y$$

$$y = \frac{1}{3}x - 2$$

Slope
intercept
form

p199

$$\left\{ \begin{array}{l} x(t) = 98t \end{array} \right.$$

$$\left\{ \begin{array}{l} y(t) = 3 + 45t - 16t^2 \end{array} \right.$$

21 p200

$$x(t) = 2t$$

$$y(t) = t^2 - 1$$

Parametric

$$x = 2t$$

$$y = t^2 - 1$$

Write as

$$x =$$

$$y =$$

Solve eqs
for t

$$\frac{x}{2} = \frac{2t}{2}$$

$$\frac{x}{2} = t$$

$$y = \left(\frac{x}{2}\right)^2 - 1$$

Substitute

$$y = \frac{x^2}{4} - 1$$

function
form

$$y = \frac{1}{4}x^2 - 1$$

p199

10-26E