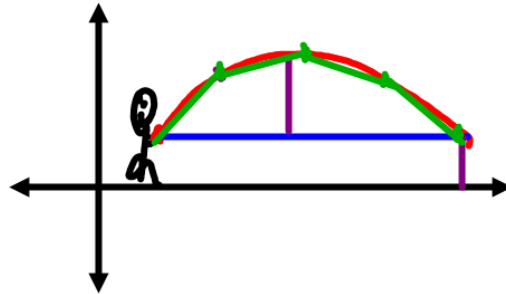
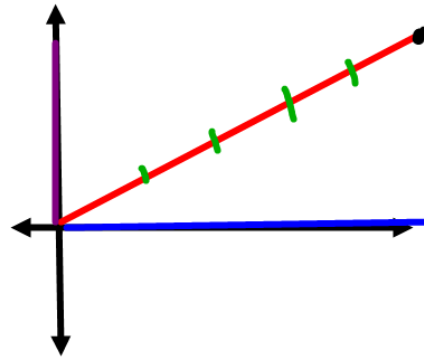


# 3.6 Parametric Equation



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

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

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

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$$x(t) = 2t$$

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

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

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