

## Vertex Form

$$y = a(x-h)^2 + k$$

$(h, k) = \text{Vertex}$

$$y = 2(x-3)^2 + 5$$

$(3, 5) = \text{Vertex}$

$y_{\text{int}}:$   $y = 2(0-3)^2 + 5$

$$2(-3)^2 + 5$$

$$2(9) + 5$$

$$18 + 5$$

$$(0, 23)$$

## Standard Form

$$y = ax^2 + bx + c$$

$$y = -16x^2 + 14x + 5$$

$-16 = \text{acceleration}$

$14 = \text{initial velocity}$

$5 = \text{initial height}$

$y_{\text{int}}:$

$$y = -16(0)^2 + 14(0) + 5$$

$$y = 5$$

$$(0, 5)$$

## Graph $y = ax^2 + bx + c$ $y = -x^2 + 4x - 3$

- AOS  
axis of symmetry

$$x = \frac{-b}{2a} \Rightarrow x = \frac{-4}{2(-1)}$$

$$(-4) \div (2(-1))$$

- Vertex  $(2, 1)$

$$x = 2$$

- Max or min

$$y = 1$$

$$y = -(2)^2 + 4(2) - 3$$

$$y = 1$$

x	y
0	-3
1	0
2	1
3	0
4	-3

$$y = -(0)^2 + 4(0) - 3$$

$$y = -(1)^2 + 4(1) - 3$$





