

Warm Up Questions

1. $y = -x^2 - 6x - 8$

2. $y = -3x^2 - 6x - 9$

3. $y = x^2 - 4x + 3$

$$1. \quad y = -x^2 - 6x - 8$$

$$y + 8 = -x^2 - 6x$$

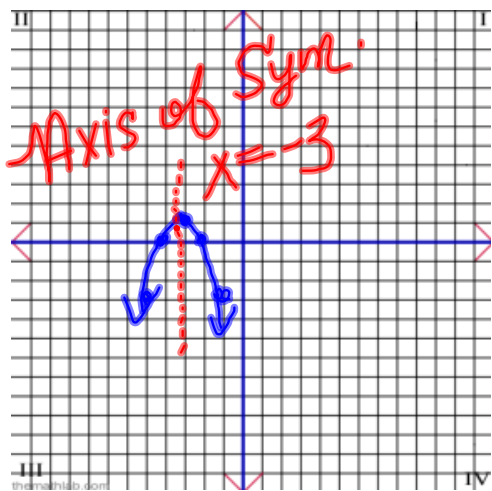
$$y + 8 = -1(x^2 + 6x)$$

$$y + 8 - 9 = -1(x^2 + 6x + 9)$$

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

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

Over	Down
1	1
2	4
3	9



Vertex: $(-3, 1)$

SF: 1

Dir: Down

Roots: $x = -2$ & $x = -4$

$$2. \quad y = -3x^2 - 6x - 9$$

$$y+9 = -3x^2 - 6x$$

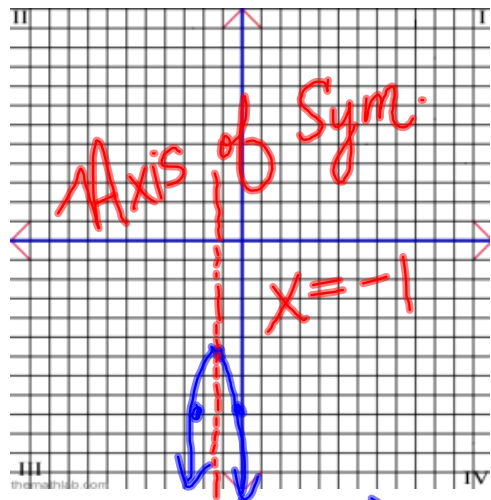
$$y+9 = -3(x^2+2x)$$

$$y+9-3 = -3(x^2+2x+1)$$

$$y+6 = -3(x+1)^2$$

$$y = -3(x+1)^2 - 6$$

Over	Down
1	$1 \times 3 = 3$
2	$4 \times 3 = 12$
3	$9 \times 3 = 27$



Vertex: $(-1, -6)$

SF: 3

Dir: Down

Roots: None

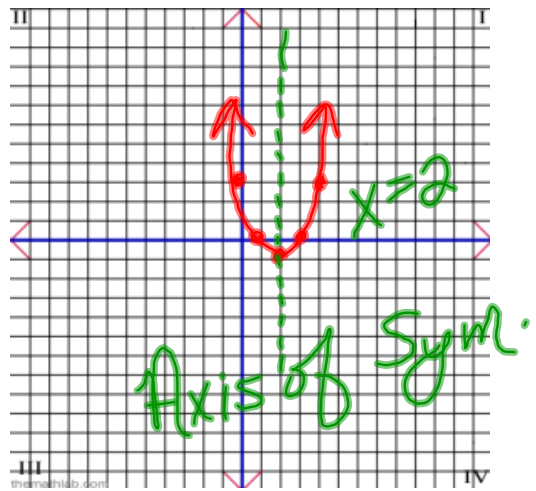
3. $y = x^2 - 4x + 3$

$$y - 3 + 4 = x^2 - 4x + 4$$

$$y + 1 = (x - 2)^2$$

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

1	1
2	4
3	9



Vertex: $(2, -1)$

SF: 1

Dir: up

Roots: $x = 1$ & $x = 3$

