

Warm Up Questions

1. $y = 2x^2 - 12x + 18$

2. $y = -3x^2 - 12x - 9$

3. $y = x^2 - 36x + 333$

$$1. y = 2x^2 - 12x + 18$$

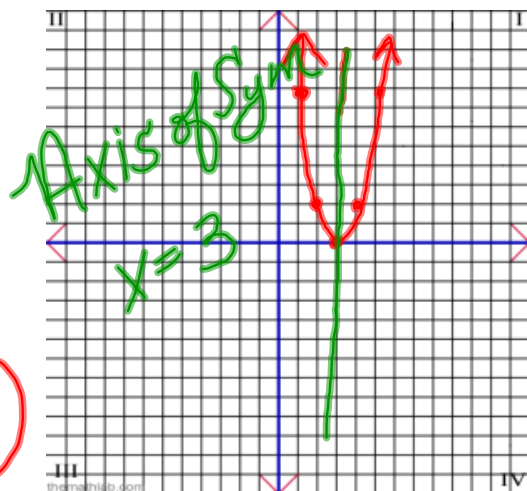
$$y - 18 = 2x^2 - 12x$$

$$y - 18 = 2(x^2 - 6x)$$

$$y - 18 + 18 = 2(x^2 - 6x + 9)$$

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

| Over | Up |
|------|-------------|
| 1 | $1x^2 = 2$ |
| 2 | $4x^2 = 8$ |
| 3 | $9x^2 = 18$ |



Vertex: $(3, 0)$

SF: 2

Dir: Up

Roots: $x = 3$

2. $y = -3x^2 - 12x - 9$

$y + 9 = -3x^2 - 12x$

$y + 9 = -3(x^2 + 4x)$

$y + 9 - 12 = -3(x^2 + 4x + 4)$

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

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

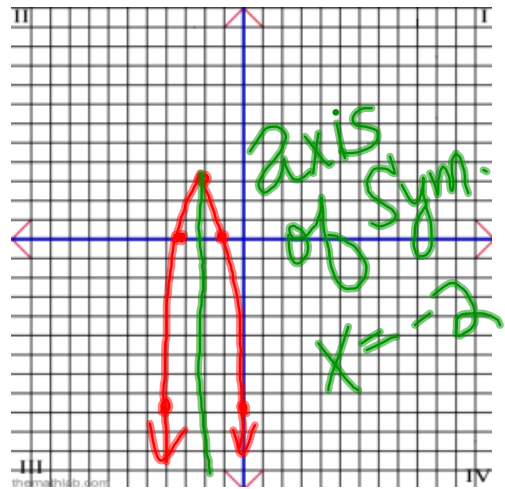
| ac | Down |
|----|-------------------|
| 1 | $1 \times 3 = 3$ |
| 2 | $4 \times 3 = 12$ |
| 3 | $9 \times 3 = 27$ |

Vertex: $(-2, 3)$

SF: 3

Dir: Down

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



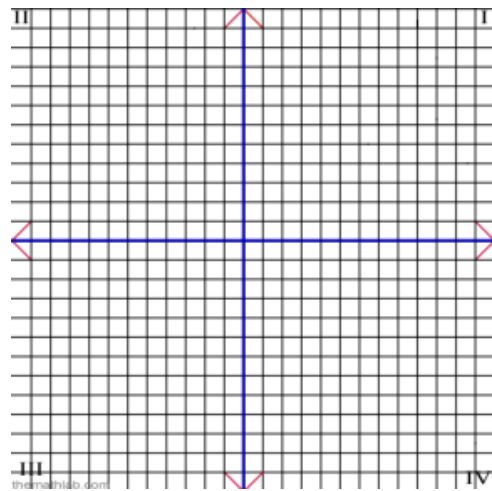
3. $y = x^2 - 36x + 333$

$y - 333 = x^2 - 36x + 324$

$y - 9 = x^2 - 36x + 324$

$y - 9 = (x - 18)^2 + 9$

$y = (x - 18)^2 + 9$



Vertex:

SF:

Dir:

Roots:

$x=0$
or
y-axis.

