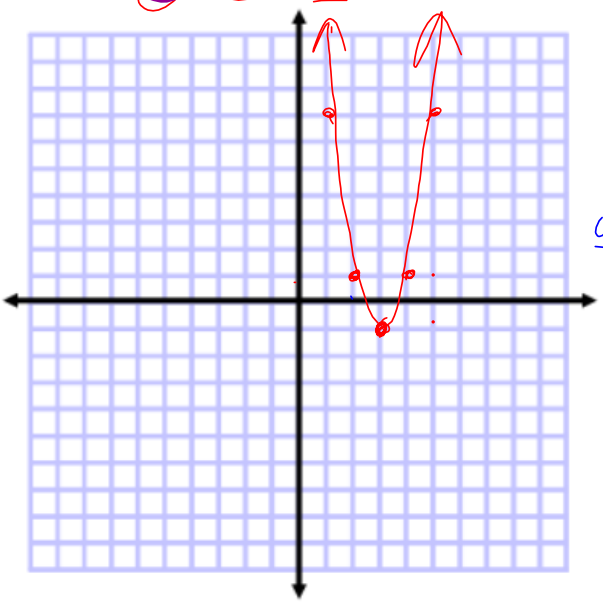
Graphing Quadratics

Graphing a parabola in **vertex form**

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

Graph $y = 2(x - 3)^2 - 1$ Vertex = (3, -1)



$y = x^2$

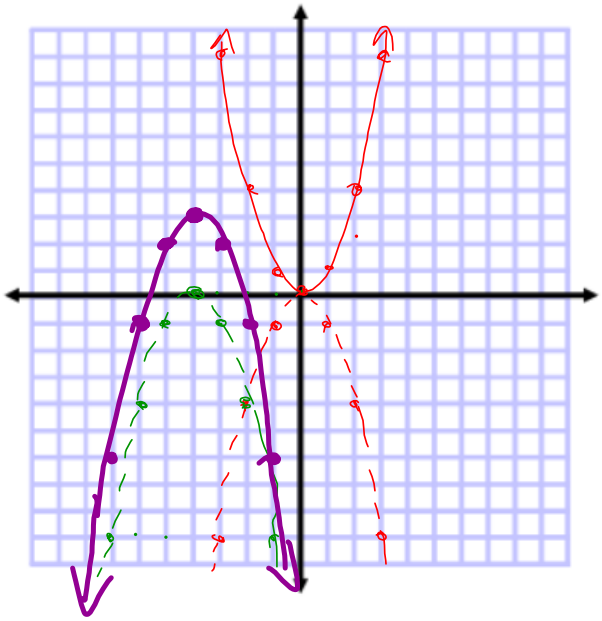
over	up
1	1
2	4
3	9
4	16

Steps:

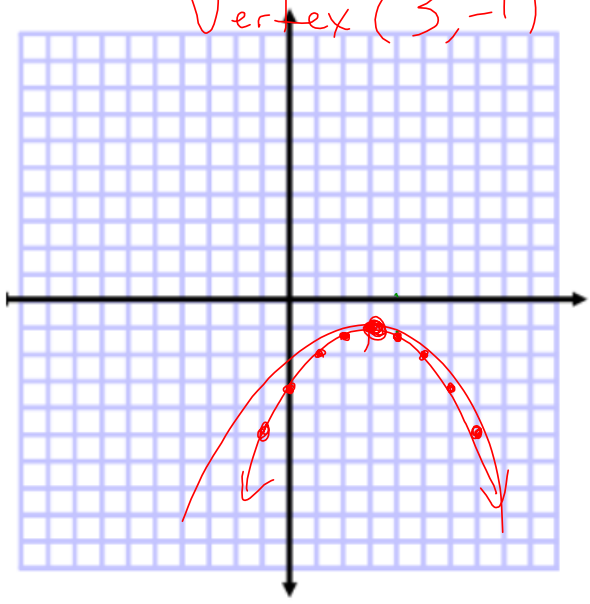
1. Plot the Vertex
2. Multiply step factor by a

Graph

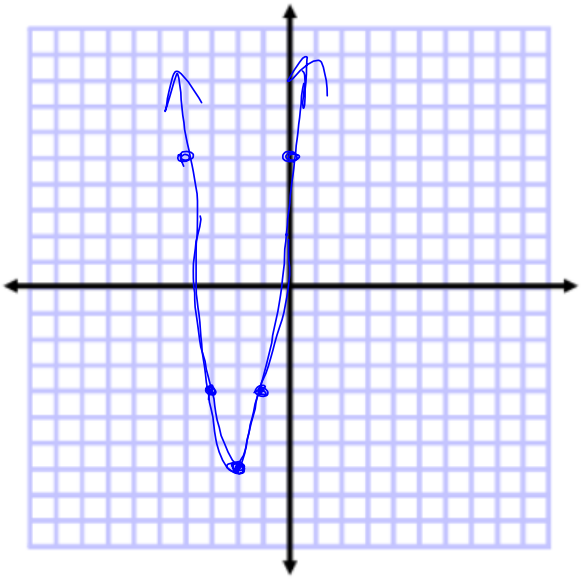
$y = -(x + 4)^2 + 3$



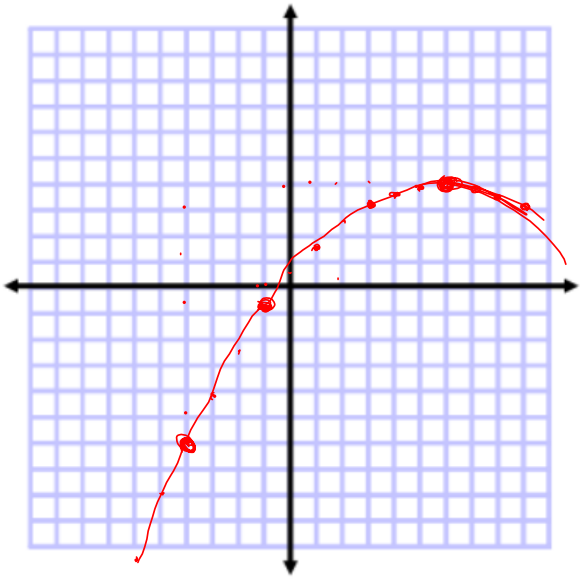
$y = -\frac{1}{4}(x - 3)^2 - 1$ Vertex (3, -1)

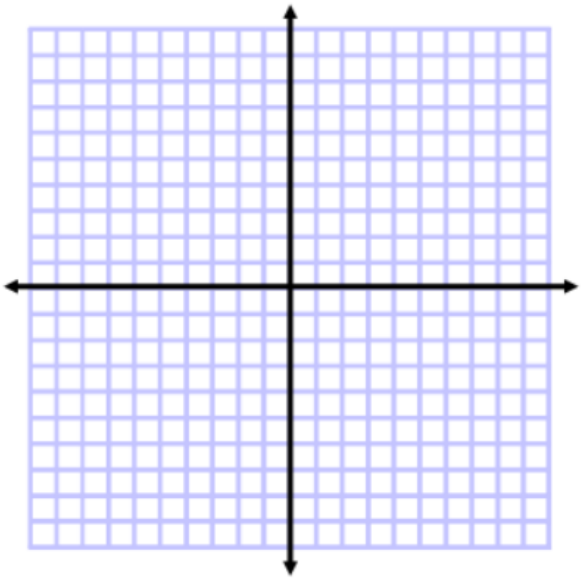


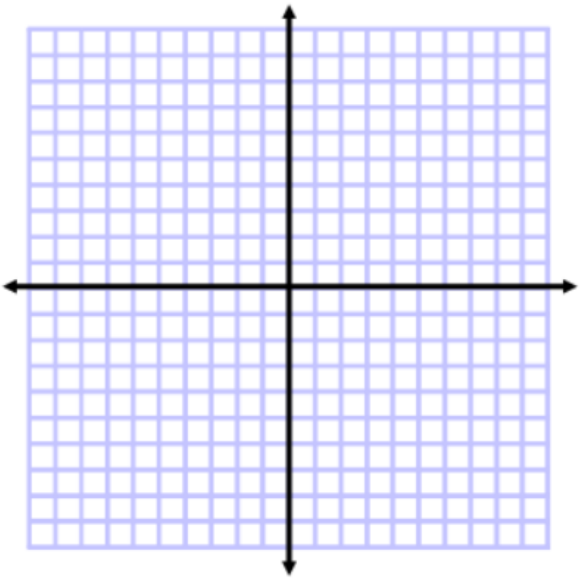
$y = 3(x+2)^2 - 7$



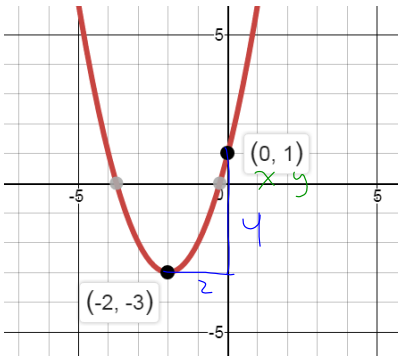
$y = -0.1(x-6)^2 + 4$







Determine an equation for the following parabolas. $y=a(x-h)^2+k$



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

sub in another (x, y)

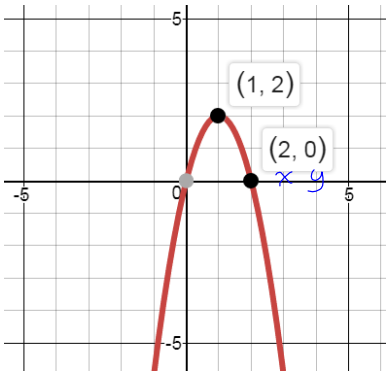
$1=a(0+2)^2-3$ (+3 +3)

$4=a(2)^2$

$\frac{4}{4}=\frac{a(4)}{4}$

$1=a$

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



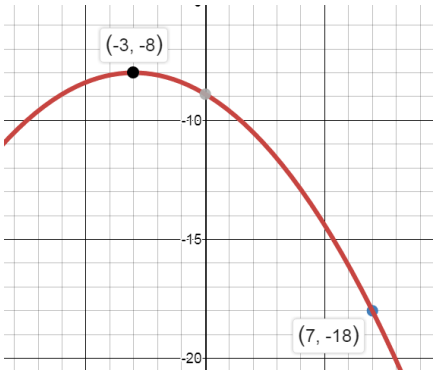
$y=a(x-1)^2+2$

$0=a(2-1)^2+2$ (-2)

$-2=a(1)^2$

$-2=a(1)$

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



$y=a(x+3)^2-8$

$-18=a(7+3)^2-8$

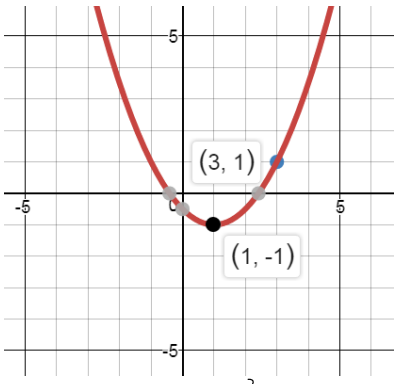
$-10=a(10)^2$

$-10=a(100)$

$\frac{-10}{100}=a$

$-\frac{1}{10}=a$

$y=-\frac{1}{10}(x+3)^2-8$



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

$1=a(3-1)^2-1$

$2=a(2)^2$

$2=a(4)$

$\frac{2}{4}=a$

$\frac{1}{2}=a$

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

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