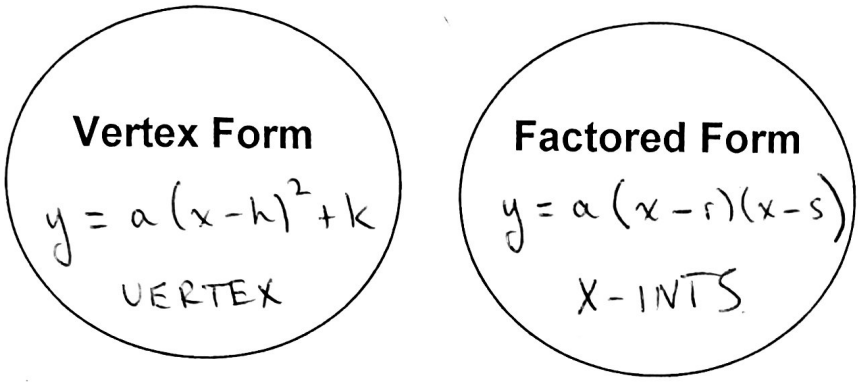
Summary of what we know:



Note: In both cases, "a" gives the step pattern.

1) The following equations are all in vertex form: $y = a(x - \mathrm{h})^2 + k$. Complete the table.

Equation	Vertex	Step Pattern
$y = (x-4)^2 - 3$	$(4, -3)$	1, 3, 5
$y = 10(x-2)^2$	$(2, 0)$	10, 30, 50
$y = 2x^2 - 7$	$(0, -7)$	2, 6, 10

2) The following equations are all in factored form: $y = a(x - s)(x - t)$. Complete the table.

Equation	Zeros (x-intercepts)	Step Pattern
$y = (x-4)(x+3)$	$(4, 0)$ & $(-3, 0)$	1, 3, 5
$y = 4(x+7)(x+9)$	$(-7, 0)$ & $(-9, 0)$	4, 12, 20
$y = 20x(x-5)$	$(0, 0)$ & $(5, 0)$	20, 60, 100

~~4, -3~~

Factored Form Warm-up | MFM2D

3) Sketch the following relations on the grids provided.

a) $y = 2(x-1)^2 - 8$ V: (1, -8) 2, 6, 10

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

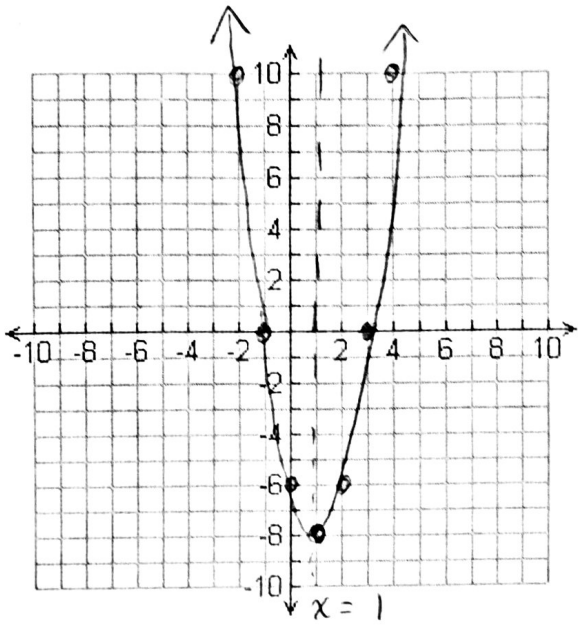
x-ints: (-1, 0) & (3, 0)

AOS: $x = \frac{-1+3}{2} = 1$

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

$= 2(2)(-2)$

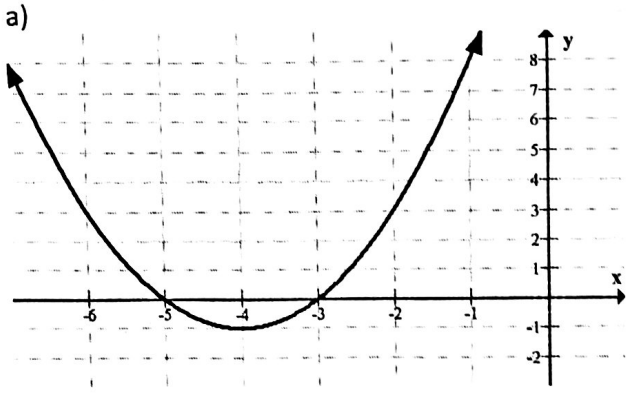
$= -8$ vertex is (1, -8)



KEY IDEA: The same quadratic relation can be represented in different forms. Just like the same line has a slope-intercept form ($y = mx + b$) and a standard form ($Ax + By + C = 0$).

4) Given the following graphs of a quadratic relation, write down the equation in factored form AND vertex form.

a)



Factored Form:

$y = (x+5)(x+3)$

Vertex Form:

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