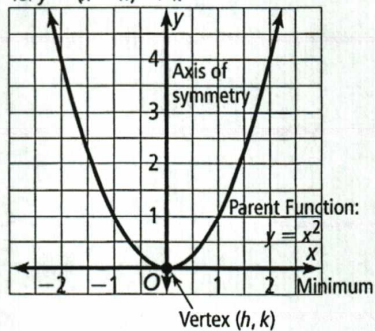


2-1 Reteach to Build Understanding

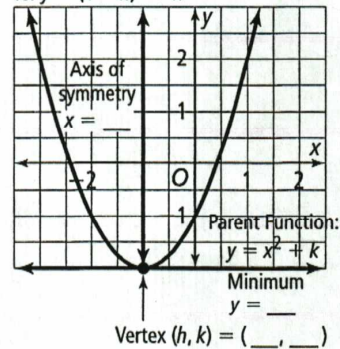
Vertex Form of a Quadratic Function

1. Identify the vertex, axis of symmetry, the maximum or minimum value, and the domain and the range of $y = (x + 1)^2 - 2$.

Formula for a parabola in vertex form for $y = (x - h)^2 + k$



Formula for a parabola in vertex form for $y = (x - h)^2 + k$



Properties of a Quadratic Function

	Algebra	Parent Function $y = x^2$	Function $y = (x + 1)^2 - 2$
Vertex	(h, k)	$(0, 0)$	(\quad , \quad)
Axis of Symmetry	$x = h$	$x = 0$	$x = \quad$
Minimum (if $a > 0$)	$y = k$	$y = 0$	$y = \quad$
Maximum (if $a < 0$)			
Domain	$(-\infty, \infty)$	(\quad)	$(-\infty, \infty)$
Range	$[k, \infty)$ (if $a > 0$)	$[0, \quad)$	(\quad)
	$(-\infty, k]$ (if $a < 0$)		

2. Renaldo described the translation of the graph of $f(x) = x^2$ related to $g(x) = (x + 2)^2 - 6$ as 2 units right and 2 units downward. What mistakes did he make?

3. Write the equation of each parabola in vertex form with a vertex $(2, 1)$ and point $(4, -3)$.

$$\text{Vertex} = (h, k) = (2, 1) \rightarrow y = a(x - \quad)^2 + \quad$$

$$-3 = a(4 - \quad)^2 + \quad$$

$$-3 = a(\quad)^2 + \quad$$

$$- \quad = 4a \rightarrow a = - \quad$$

$$y = \quad (x - \quad)^2 + \quad$$