Vertex Form of Quadratic Relations: $y = a(x - h)^2 + k$

Summary

St. Louis Gateway Arch

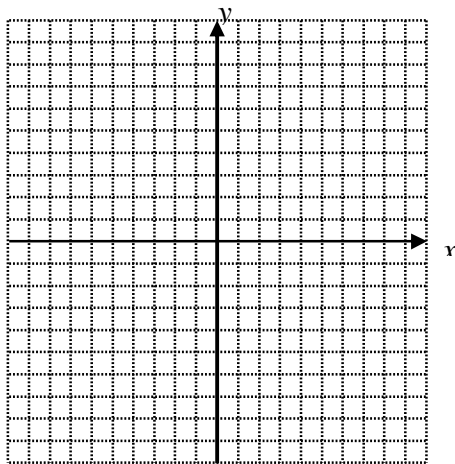The transformed parabola **$y = a(x – h)^2 + k$** is known as **vertex form.**

- *a* represents the _____ and _____

- *k* represents the _____

- *h* represents the _____

- the coordinates of the vertex of the parabola are _____

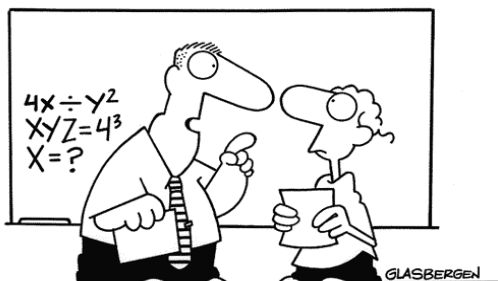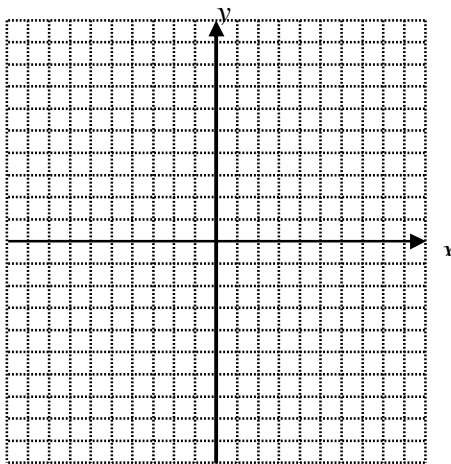## Sketching Vertex Form: $y = -4(x-3)^2 + 5$

1.

2.

step 1   **step 2**

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4x ÷ y²
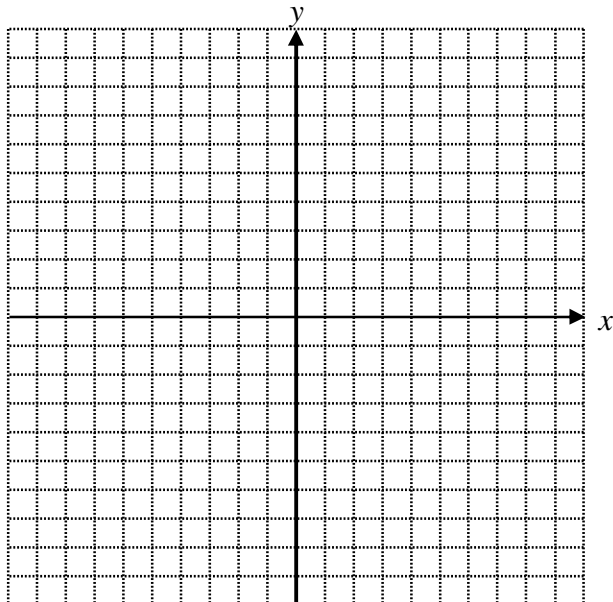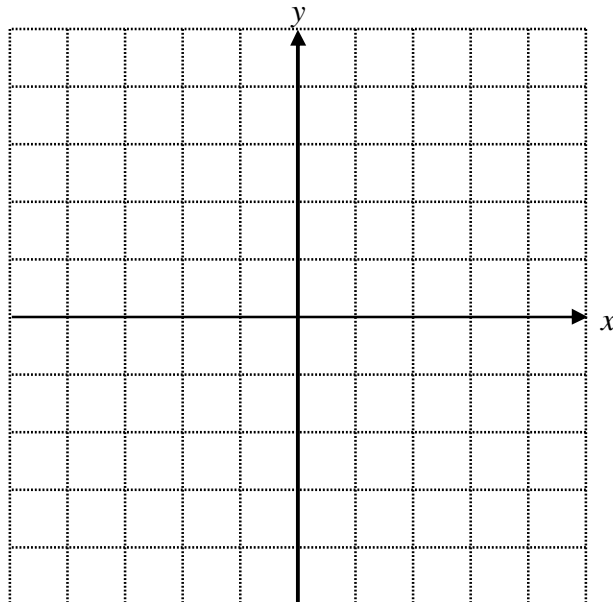xyz = 4³
x = ?

GLASBERGEN

"Algebra class will be important to you later in life because there's going to be a test six weeks from now."

Angry Birds

Example 1

For each of the following quadratic relations in vertex form, (i) state the transformations, and (ii) graph the parabola.

$y = -3(x-2)^2 - 1$	$y = \frac{1}{2}(x+3)^2 + 1$
(I) TRANSFORMATIONS	
(II) GRAPH	

$$ax^2 + bx + c = 0$$
$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

G.bacall

"If you think I do a good job teaching quadratic equations, like me on Facebook."

roller coaster