

Graphing Absolute Value Functions

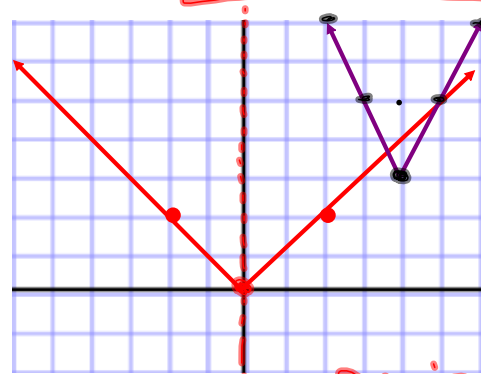
$$y = a|x - h| + k$$

The graph of $y = a|x - h| + k$ has the following characteristics:

- The graph has vertex (h, k) and is symmetric in the line $x = h$.
- The graph is V-shaped. It opens up if $a > 0$ and down if $a < 0$.
- The graph is wider than the graph of $y = |x|$ if $|a| < 1$.

The graph is narrower than the graph of $y = |x|$ if $|a| > 1$.

$v(h, k)$
 (x, y)



$y = |x|$ BASIC
 $y = 2|x - 4| + 3$

To graph an absolute value function you may find it helpful to plot the vertex and one other point. Use symmetry to plot a third point and then complete the graph.

Graphing Absolute Value Functions

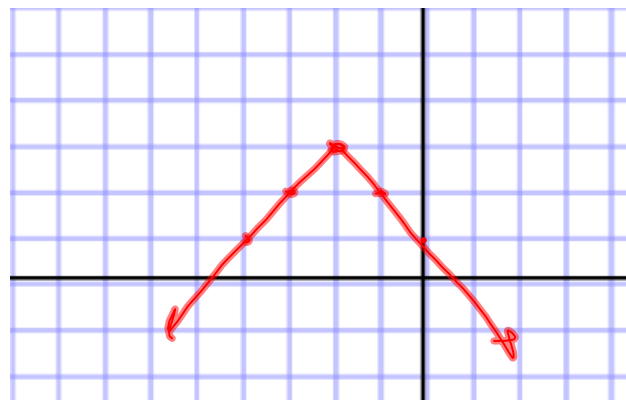
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Graph $y = -|x + 2| + 3$

Vertex (h, k)
 $(-2, 3)$



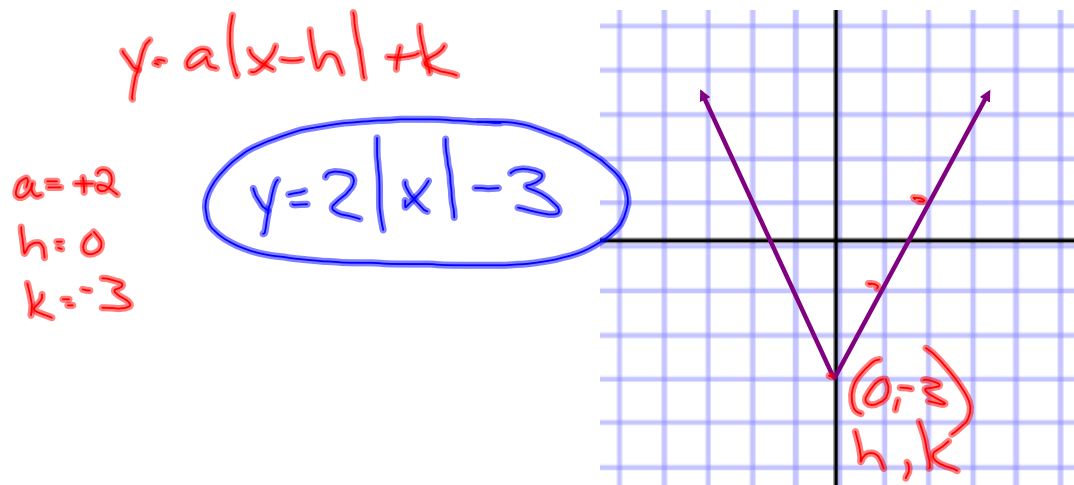
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Write an equation of the graph shown.



Assignment

p.126

12-24 even,
34-38 even

Quiz 2.7-2.8 Tomorrow