

Your Name

Mrs. Theo

10/2/2020

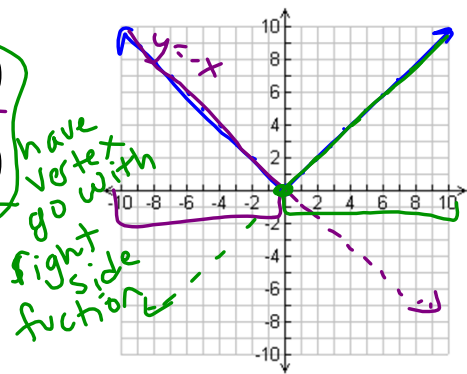
Notes

1.2 Writing Absolute Value Functions as Piecewise

Writing Absolute Value as a Piecewise Function

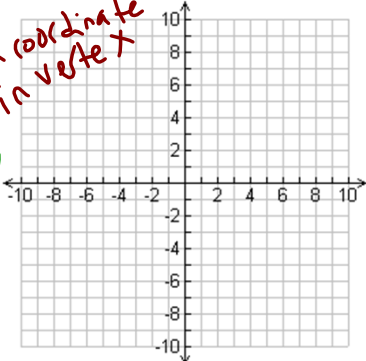
$f(x) = |x|$ can be written as

$$f(x) = \begin{cases} -x & x < 0 \\ x & x \geq 0 \end{cases}$$



$f(x) = a|x - h| + k$ can be written as

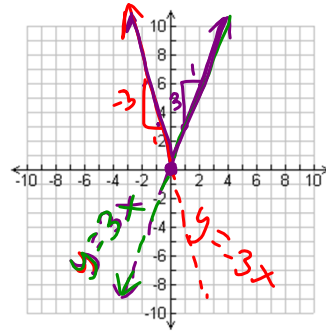
$$f(x) = \begin{cases} a[-(x - h)] + k & x < h \\ a(x - h) + k & x \geq h \end{cases}$$



Writing Absolute Value as a Piecewise Function

$f(x) = |3x|$ can be written as

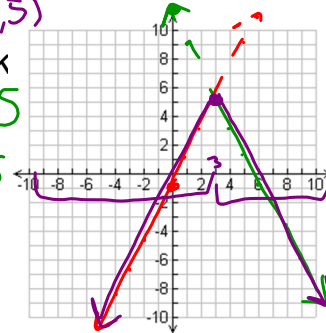
$$f(x) = \begin{cases} -3x & x < 0 \\ 3x & x \geq 0 \end{cases}$$



$f(x) = -2|x - 3| + 5$ can be written as

$m = a = -2$ $V(3, 5)$

$$f(x) = \begin{cases} 2x - 1 & x < 3 \\ -2x + 11 & x \geq 3 \end{cases}$$

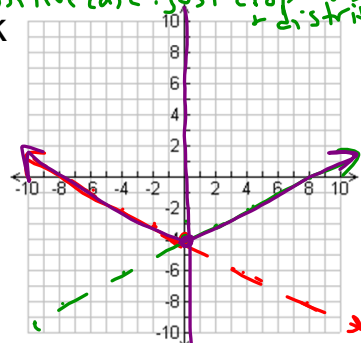


Writing Absolute Value as a Piecewise Function

$f(x) = \frac{1}{2}|x| - 4$ can be written as

Positive case: just drop bars + distribute a

$$f(x) = \begin{cases} -\frac{1}{2}x - 4 & x < 0 \\ \frac{1}{2}x - 4 & x \geq 0 \end{cases}$$



$f(x) = -3|x + 1| + 2$ can be written as

$m = a = -3$ $\text{Vertex: } (-1, 2)$

$$f(x) = \begin{cases} 3x + 5 & x < -1 \\ -3x - 1 & x \geq -1 \end{cases}$$

