

Absolute Value Functions

$$y = a|bx - c| + d$$

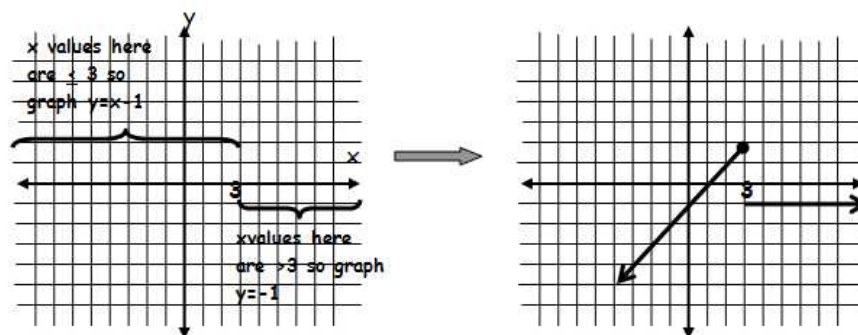
FUNCTION	VERTEX	OPENS Up/Down	VERTEX SHIFT Up/Down	SLOPE
1. $y = -3 x $				
2. $y = 2 x - 4 $				
3. $y = x - 3 + 2$				
4. $y = - x - 2 + 4$				
5. $y = \frac{1}{2} x + 3 - 2$				

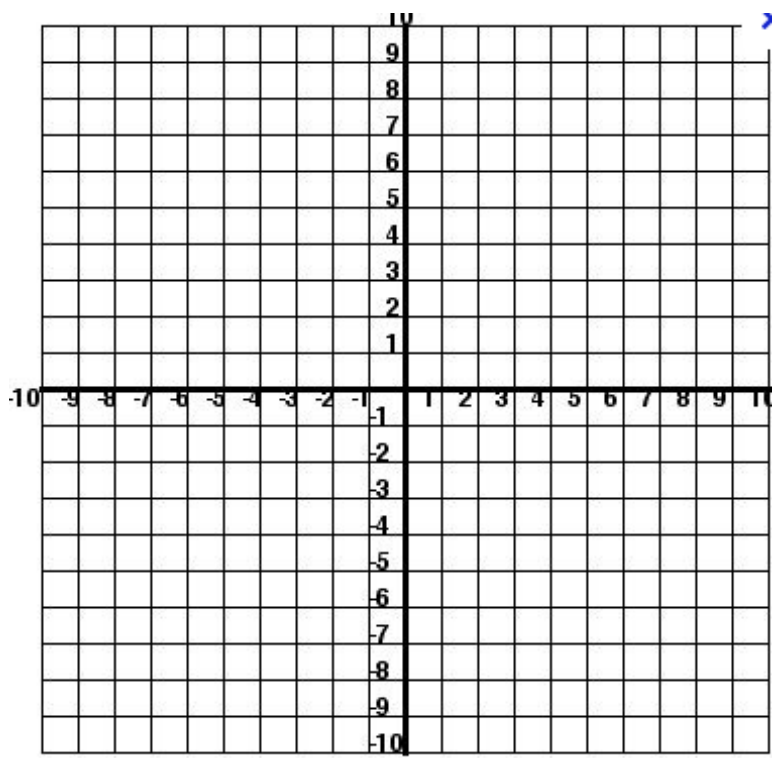
Piecewise Functions
(Can be used to graph absolute value functions)

Piecewise function: A function written as two or more expressions

Example: $f(x) = \begin{cases} x-1 & \text{if } x \leq 3 \\ -1 & \text{if } x > 3 \end{cases}$

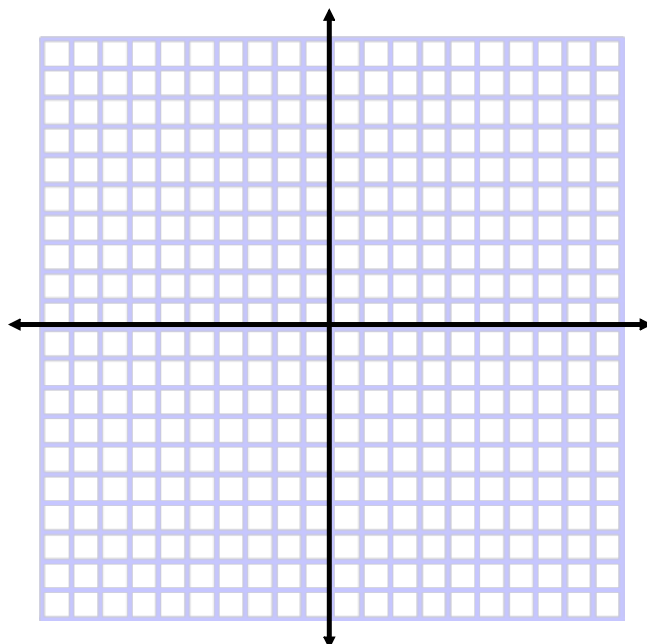
} function (line)
} condition for x values (along x-axis)





Here is a piecewise function. Use it to evaluate it at some x-values and then graph it.

$f(x) = \begin{cases} \frac{1}{3}x - 1 & \text{for } x \leq -3 \\ 2 & \text{for } -3 < x \leq 1 \\ x & \text{for } x > 1 \end{cases}$	$f(-6) =$ $f(-3) =$ $f(0) =$ $f(1) =$
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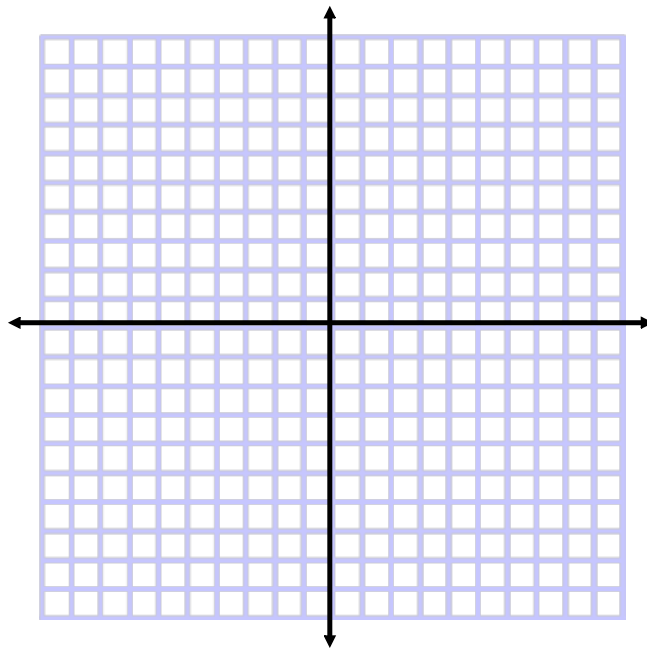
1. $f(x) = \begin{cases} -8 & \text{for } x \leq -5 \\ 0 & \text{for } -5 < x \leq 5 \\ 5 & \text{for } x > 5 \end{cases}$

Evaluate $f(x)$

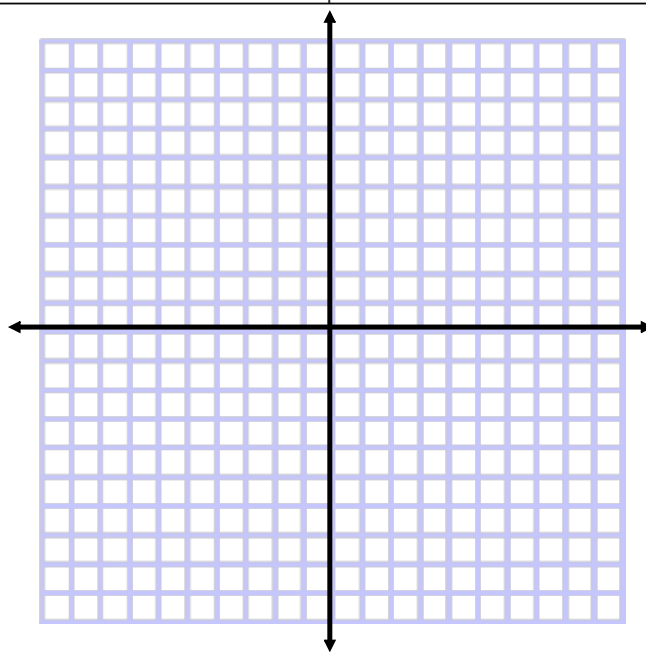
$$f(-6) =$$

$$f(-5) =$$

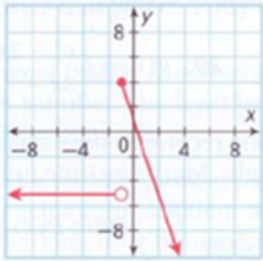
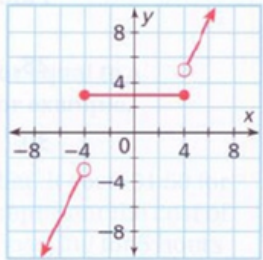
$$f(21) =$$



2. $f(x) = \begin{cases} 5x - 9 & \text{for } x < 2 \\ 4 - x & \text{for } x \geq 2 \end{cases}$	Evaluate $f(x)$ $f(-6) =$ $f(3) =$ $f(2) =$
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Write the piecewise function for the following graphs:

<p>4.</p> 	<p>Equation of the pieces</p>	<p>Domain for the pieces</p>	<p>Piecewise Function</p>
<p>5.</p> 	<p>Equation of the pieces</p>	<p>Domain for the pieces</p>	<p>Piecewise Function</p>

