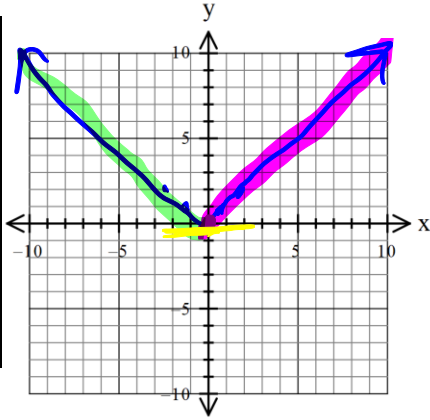


## Parent Functions #2

Name of Graph: absolute value

Equation:  $y = |x|$   $f(x) = |x|$

$x$	$f(x)$
-2	2
-1	1
0	0
1	1
2	2



### Key Features

Domain:  $(-\infty, \infty)$

Range:  $[0, \infty)$

x-intercept(s):  $(0, 0)$

y-intercept:  $(0, 0)$

Increasing:  $(0, \infty)$

Decreasing:  $(-\infty, 0)$

Constant:  $N/A$

Positive:  $(-\infty, 0) \cup (0, \infty)$

Negative:  $N/A$

Maximums / Minimums:  $(0, 0)$

Symmetry: *even*

End Behavior:

$$\lim_{x \rightarrow -\infty} f(x) = \infty$$

$$\lim_{x \rightarrow \infty} f(x) = \infty$$

Vertex:  $(0, 0)$

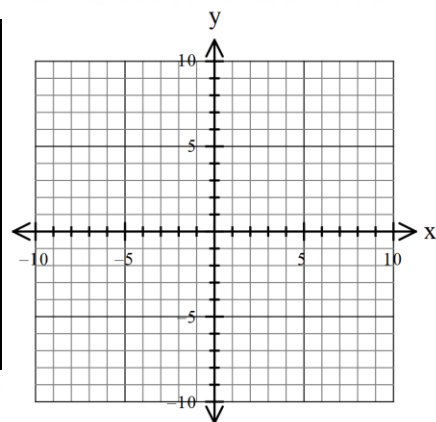
Transformation general equation:

## Parent Functions #2

Name of Graph: \_\_\_\_\_

Equation: \_\_\_\_\_

$x$	$f(x)$



### Key Features

Domain:

Range:

x-intercept(s):

y-intercept:

Increasing:

Decreasing:

Constant:

Positive:

Negative:

Maximums / Minimums

Symmetry:

End Behavior:

$$\lim_{x \rightarrow -\infty} f(x) =$$

$$\lim_{x \rightarrow \infty} f(x) =$$

Vertex:

Transformation general equation:

3.1 Steps for solving an absolute value equation:

- ① get absolute value signs by themselves
- ② write 2 equations, one for positive answer one for negative answer
- ③ solve both equations
- ④ write answers, 2 answers (don't have to be same #)

ex

$$|x| = 10$$

$x = 10$     $x = -10$   
or  $x = 10, -10$   
or  $x = \pm 10$

ex

$$3|2x-6| + 4 = 16$$

-4   -4

---

$$\frac{3}{3}|2x-6| = \frac{12}{3}$$
$$|2x-6| = 4$$

$$2x-6=4 \quad 2x-6=-4$$
$$2x=10 \quad 2x=2$$
$$x=5 \quad x=1$$

Steps for solving an absolute value equation: