

## 2.7 Absolute Value Worksheet

Algebra II

Name: \_\_\_\_\_

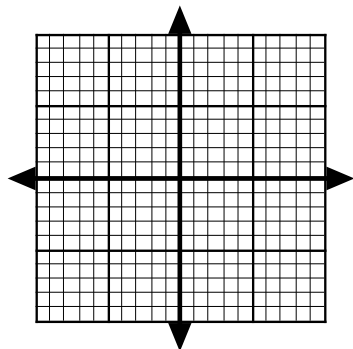
Date: \_\_\_\_\_ Period: \_\_\_\_\_

Use the notes, and our understanding of transformations to graph each absolute value function. Name the vertex and describe the transformation.

1.  $y = -|x| + 5$

Vertex

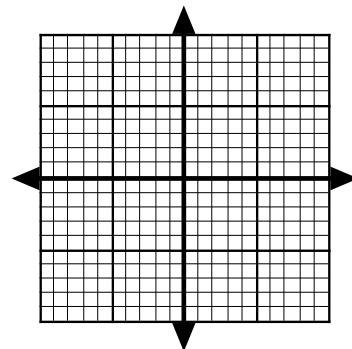
Transformation:



2.  $f(x) = 3|x - 5|$

Vertex

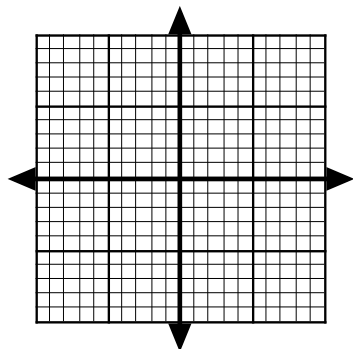
Transformation:



3.  $f(x) = \frac{1}{2}|x + 4| - 7$

Vertex

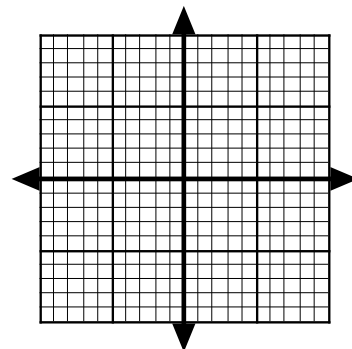
Transformation:



4.  $y = -\frac{3}{2}|x| + 0.5$

Vertex

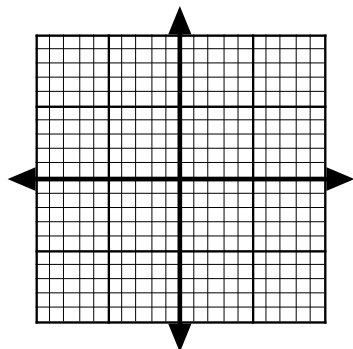
Transformation:



5.  $f(x) = 0.4|x - 2.5|$

Vertex

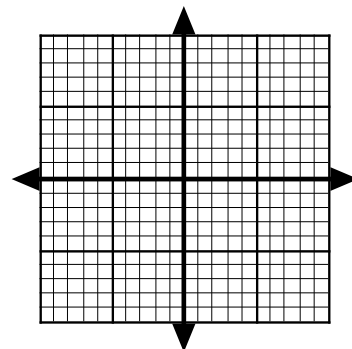
Transformation:



6.  $y = 5|x + 7| - 3$

Vertex

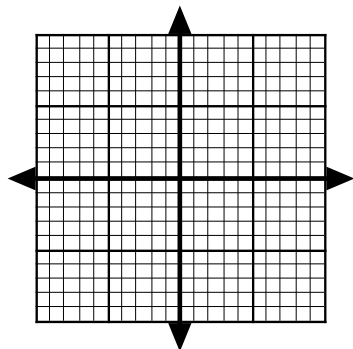
Transformation:



7.  $y = \left|x - \frac{1}{3}\right| + \frac{2}{3}$

Vertex

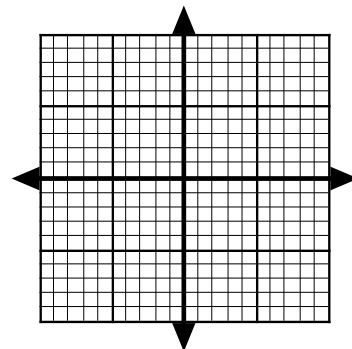
Transformation:



8.  $y = -2|x| + 10$

Vertex

Transformation:



**Summary:**  $y = a|x - h| + k$  is a **transformation** of the **parent function** \_\_\_\_\_ .

**The “a” acts like the** \_\_\_\_\_ .

If “a” is positive, the “V” opens \_\_\_\_\_ .

If “a” is negative, the “V” opens \_\_\_\_\_ .

If  $|a| > 1$ , the “V” is \_\_\_\_\_ or \_\_\_\_\_ .

If  $0 < |a| < 1$ , the “V” is \_\_\_\_\_ or \_\_\_\_\_ .

**The “h” is a** \_\_\_\_\_ .

$x - h$  shifts the graph \_\_\_\_\_ .

$x + h$  shifts the graph \_\_\_\_\_ .

**The “k” is a** \_\_\_\_\_ .

$+k$  shifts the graph \_\_\_\_\_ .

$-k$  shifts the graph \_\_\_\_\_ .

All absolute value functions have the **shape** of a \_\_\_\_\_ .

The **vertex** of the absolute value function is \_\_\_\_\_ .

**Domain:** \_\_\_\_\_

**Range:**

If the graph opens up, \_\_\_\_\_

If the graph opens down, \_\_\_\_\_