

Algebra – Review for Test

Chapter 3 Section 7 - 8 – 8th Grade

Name: _____ Date: _____ Hour: _____

Instructions: Complete the following problems.

1. Find the vertex of the given absolute value function, as well as graph it. Compare the graph to the graph of $f(x) = |x|$. List the transformation(s) that the function $g(x)$ has compared to $f(x)$. State the domain and the range of the function $g(x)$.

$$g(x) = \frac{3}{4}|x + 2|$$

Vertex - $(-2, 0)$

Transformations

Horizontal Vertical

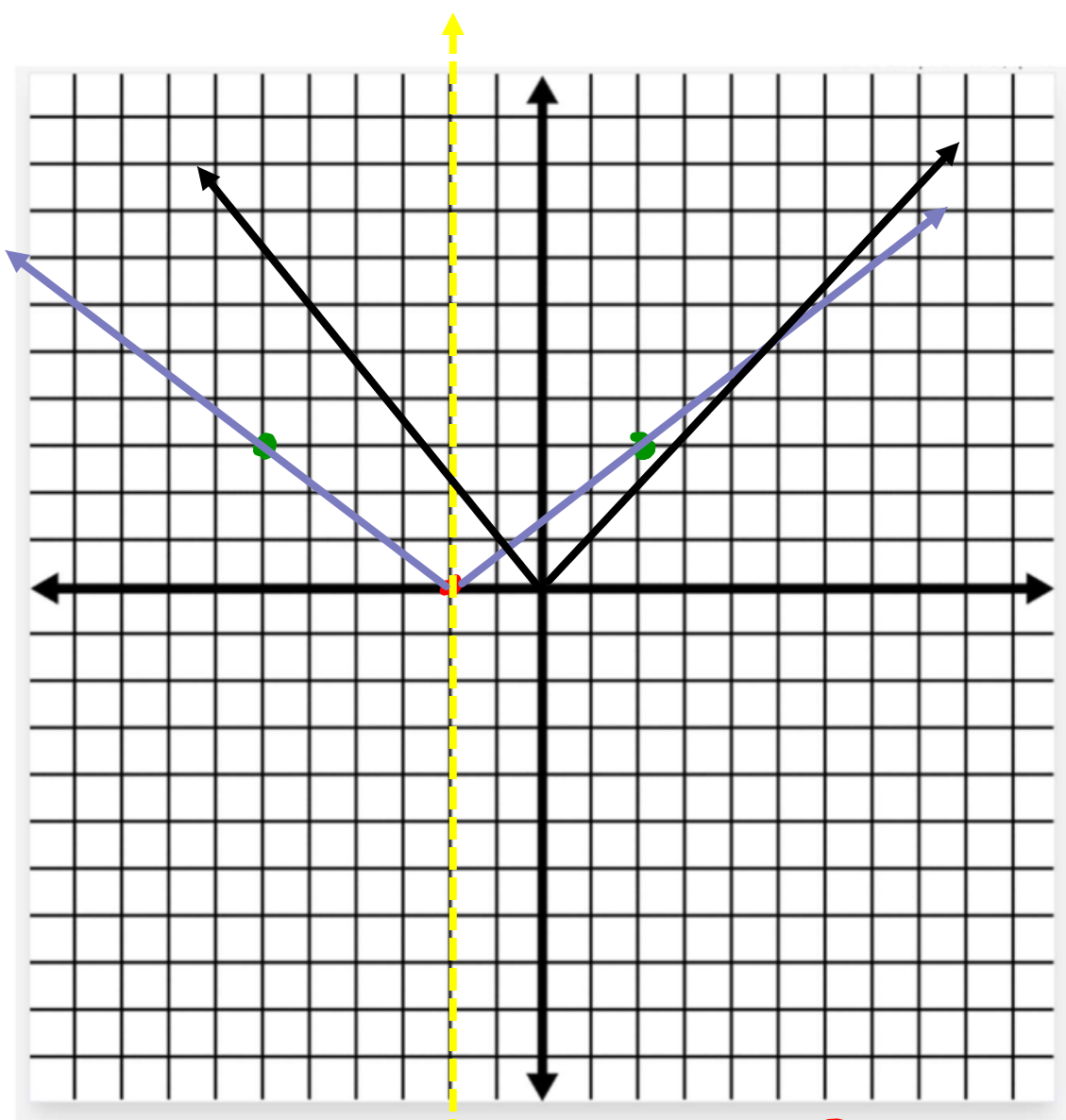
Right or Left Up or Down

Horizontal Vertical

Stretch or Shrink Stretch or Shrink

Reflection

Horizontal Vertical



Domain - $\{x \mid -\infty \leq x \leq +\infty\}$

Range - $\{y \mid 0 \leq y \leq +\infty\}$

$$x + 2 = 0$$

$$x = -2$$

$$g(2) = \frac{3}{4}|-2+2| = 0$$

$$g(4) = \frac{3}{4}|4+2| = \frac{9}{2}$$

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2. Find the vertex of the given absolute value function, as well as graph it. Compare the graph to the graph of $f(x) = |x|$. List the transformation(s) that the function $g(x)$ has compared to $f(x)$. State the domain and the range of the function $g(x)$.

$$g(x) = 3|x| - 7$$

Vertex - $(0, -7)$

$$x = 0$$

Transformations

Horizontal

Vertical

Right or Left

Up or Down

Horizontal

Vertical

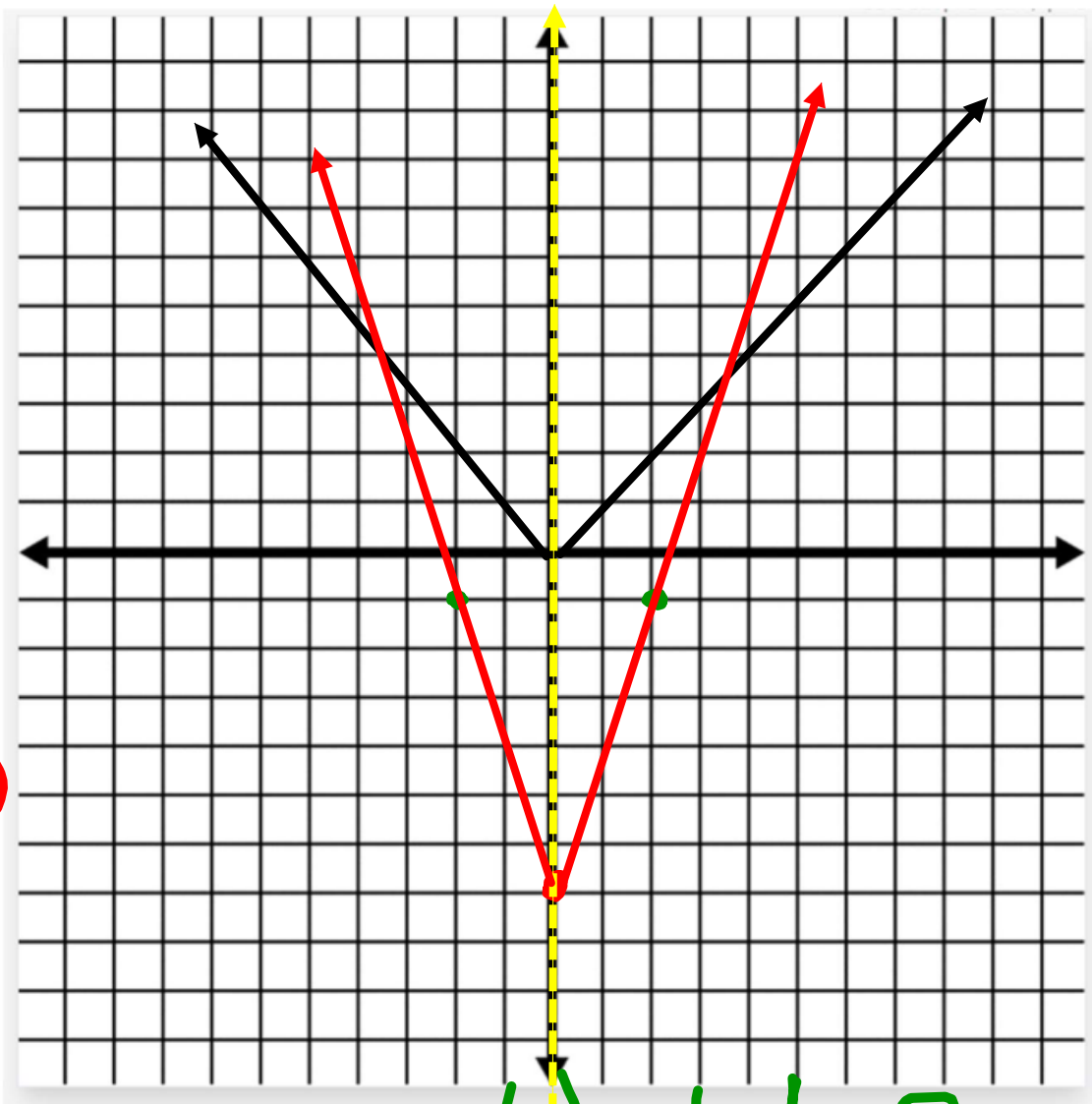
Stretch or Shrink

Stretch or Shrink

Reflection

Horizontal

Vertical



Domain -

$$\{x | -\infty \leq x \leq +\infty\}$$

$$g(2) = 3|2| - 7 = -1$$

Range -

$$\{y | -7 \leq y \leq +\infty\}$$

$$g(4) = 3|4| - 7 = 5$$

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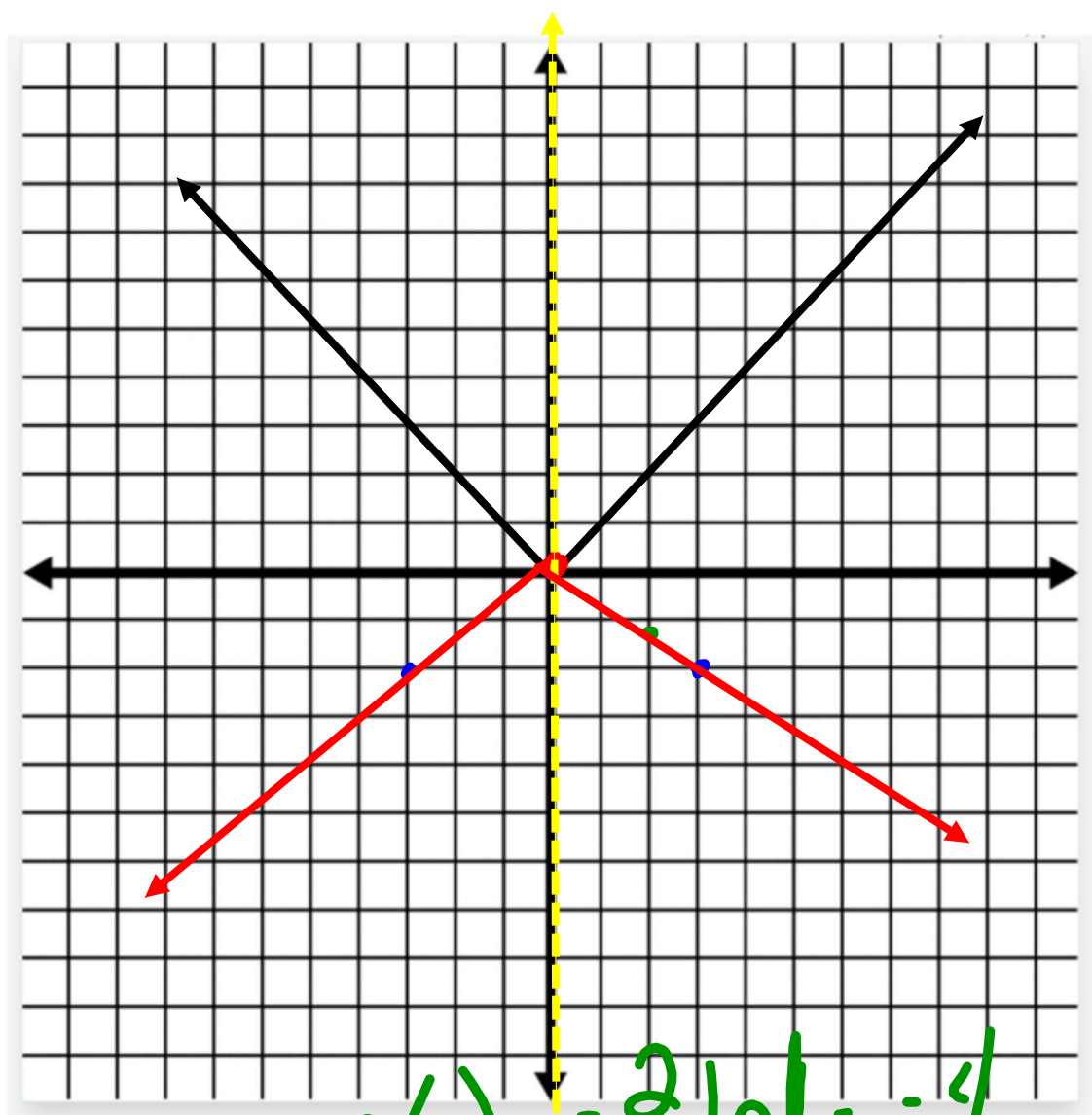
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$$g(x) = -\frac{2}{3}|x|$$

Vertex - (0, 0)

Transformations

Horizontal	Vertical
Right or Left	Up or Down
Horizontal	<u>Vertical</u>
Stretch or Shrink	Stretch or <u>Shrink</u>
<u>Reflection</u>	
<u>Horizontal</u>	Vertical



Domain - $\{x \mid -\infty \leq x \leq +\infty\}$

Range - $\{y \mid -\infty \leq y \leq 0\}$

$$g(2) = -\frac{2}{3}|2| = -\frac{4}{3}$$

(2, -4/3)

$$g(3) = -\frac{2}{3}|3| = -2$$

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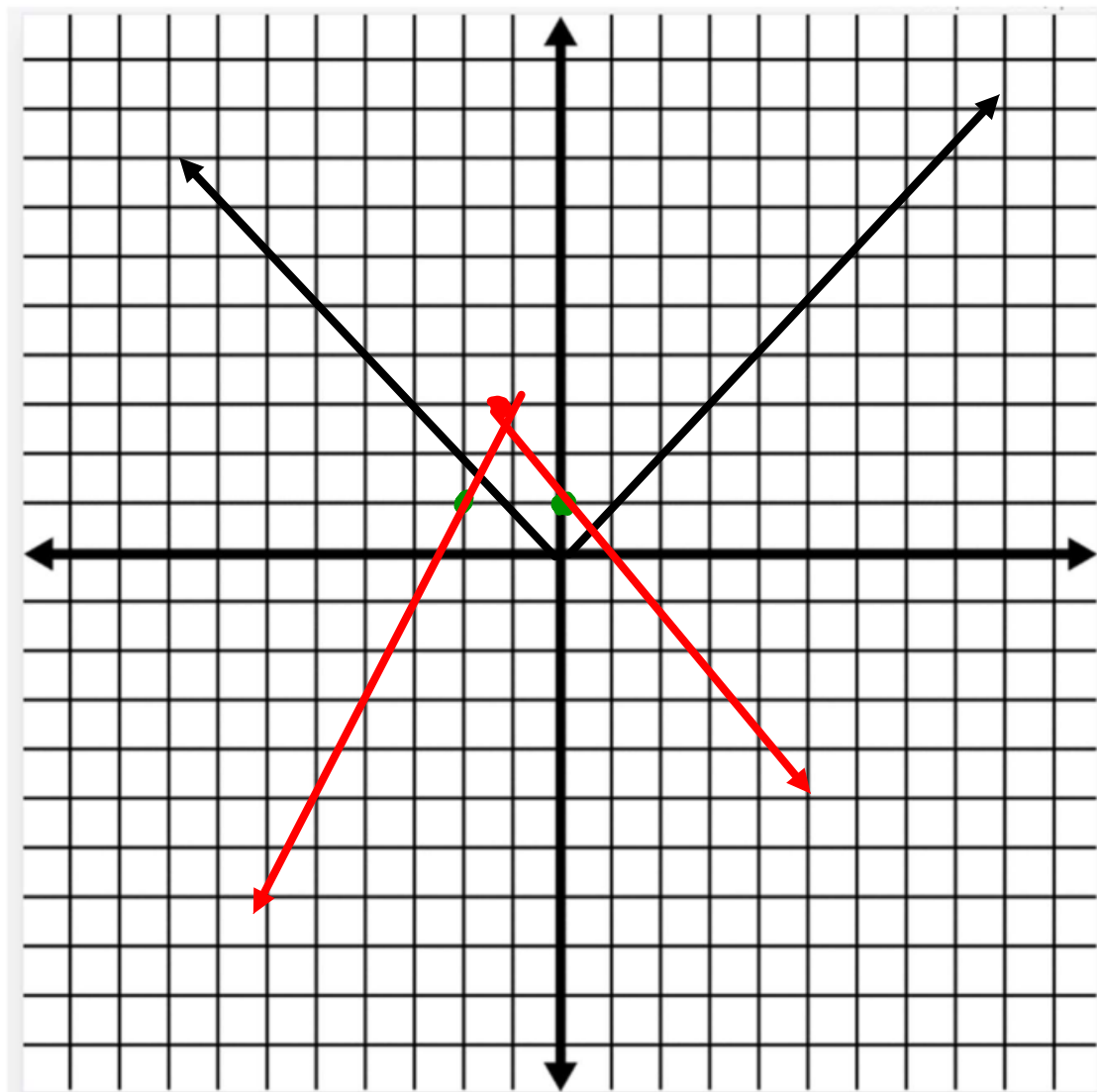
4. Find the vertex of the given absolute value function, as well as graph it. Compare the graph to the graph of $f(x) = |x|$. List the transformation(s) that the function $g(x)$ has compared to $f(x)$. State the domain and the range of the function $g(x)$.

$$g(x) = -2|x + 1| + 3$$

Vertex - $(-1, 3)$

Transformations

Horizontal Vertical
 Right or Left Up or Down
 Horizontal Vertical
 Stretch or Shrink Stretch or Shrink
 Reflection
 Horizontal Vertical



Domain - $\{x \mid -\infty \leq x \leq +\infty\}$

Range - $\{y \mid -\infty \leq y \leq 3\}$

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5. Find the vertex of the given absolute value function, as well as graph it. Compare the graph to the graph of $f(x) = |x|$. List the transformation(s) that the function $g(x)$ has compared to $f(x)$. State the domain and the range of the function $g(x)$.

$$g(x) = 3|2x + 8| - 10$$

Vertex - _____

Transformations

Horizontal Vertical

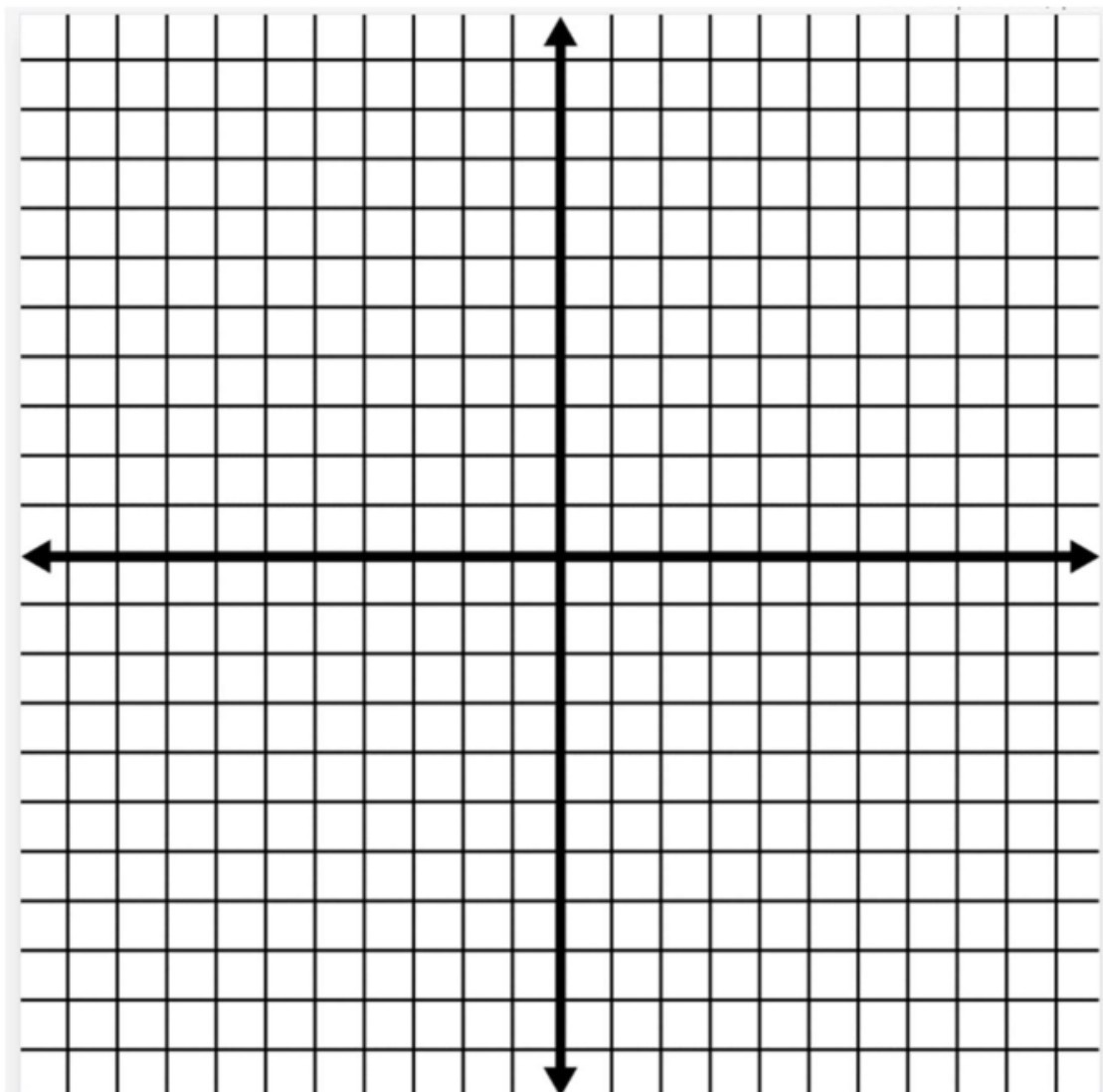
Right or Left Up or Down

Horizontal Vertical

Stretch or Shrink Stretch or Shrink

Reflection

Horizontal Vertical



Domain - _____

Range - _____