

HOMWORK:



KEY FEATURES OF ABS VAL FUNCTIONS

NAME: _____

DAY 2

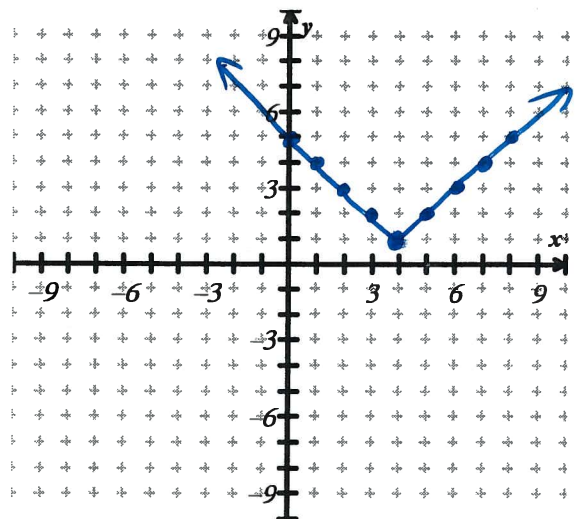
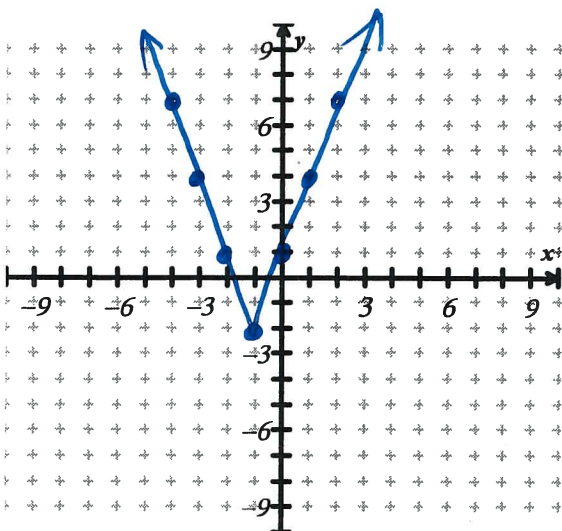
Fill out the chart.

	EQUATION	OPEN	VERTEX (initial point)	SHIFT (horizontal/vertical)	VERTICAL CHANGE
1	$y = 3 x+1 - 2$	Up Down	$(-1, -2)$	Left Right <u>1</u> Up Down <u>2</u>	Stretch Shrink None
2	$y = x-4 + 1$	Up Down	$(4, 1)$	Left Right <u>4</u> Up Down <u>1</u>	Stretch Shrink None
3	$y = - x + 9$	Up Down	$(0, 9)$	Left Right <u>None</u> Up Down <u>9</u>	Stretch Shrink None
4	$y = - x-2 $	Up Down	$(2, 0)$	Left Right <u>2</u> Up Down <u>None</u>	Stretch Shrink None
5	$y = \frac{4}{3} x-5 $	Up Down	$(5, 0)$	Left Right <u>5</u> Up Down <u>None</u>	Stretch Shrink None

Choose two of the functions above to graph. *(multiple answers)*

6. Function: $y = 3|x+1| - 2$

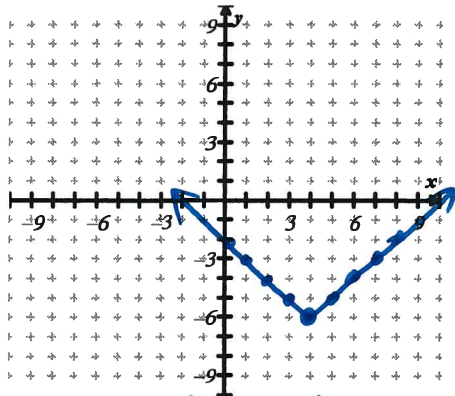
7. Function: $y = |x-4| + 1$



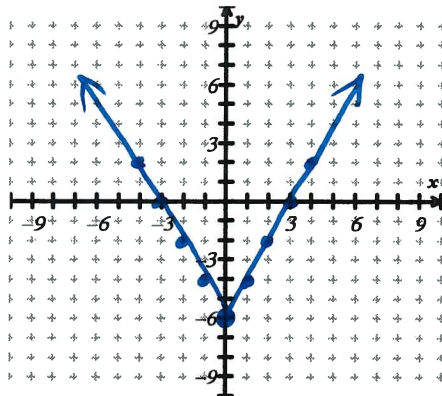
multiple answers

1. Sketch at 3 different absolute value graphs that have the same domain and range.

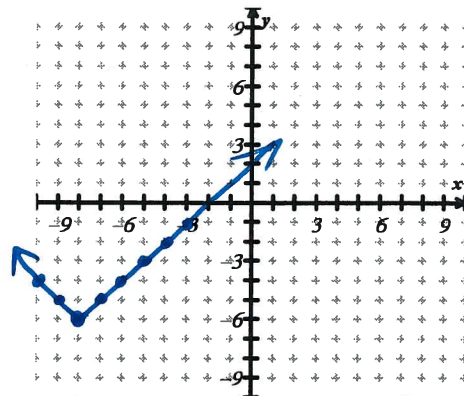
Then write the equation of each graph.



$$y = 1/|x-4| - 6$$



$$y = 2/|x| - 6$$



$$y = 1/|x+8| - 6$$

2. Then write a possible equation of each graph.

What is the common domain & range? $D: (-\infty, \infty)$
 $R: [-6, \infty)$

3. Are your functions increasing and decreasing over the same intervals? Why/Why not?

First Graph's Increasing Interval: $(4, \infty)$

First Graph's Decreasing Interval: $(-\infty, 4)$

4. Given any absolute value function, create and describe a rule to determine the correct end behavior.

If the graph opens up:

$$\text{As } x \rightarrow -\infty, f(x) \rightarrow \infty$$

$$\text{As } x \rightarrow \infty, f(x) \rightarrow \infty$$

If the graph opens down:

$$\text{As } x \rightarrow -\infty, f(x) \rightarrow -\infty$$

$$\text{As } x \rightarrow \infty, f(x) \rightarrow -\infty$$