Name: Period:

First Score:	First attempt due:	Final Score:
	Final corrections due:	

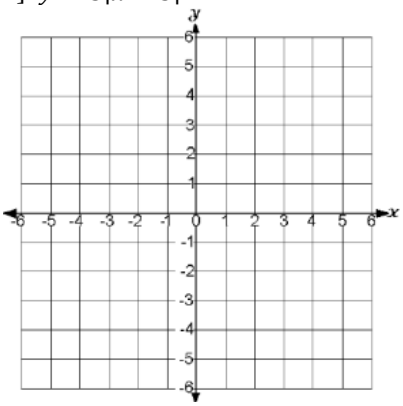
Practice:
Absolute Value Functions

Identify the vertex. Determine if the graph opens up or down (circle). Determine if the graph has a maximum or minimum (circle) and its value. Decide if the graph is narrower, wider, or the same width as the parent graph (circle).

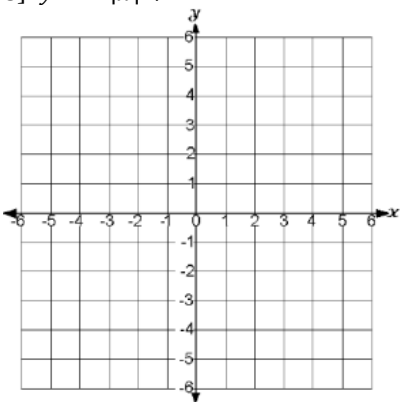
1] $y = -\|x + 1\|$ Vertex: (____, ____) Opens: UP / DOWN MAXIMUM/ MINIMUM of _____ NARROWER / WIDER / SAME	2] $y = 7\|x - 3\| - 4$ Vertex: (____, ____) Opens: UP / DOWN MAXIMUM/ MINIMUM of _____ NARROWER / WIDER / SAME	3] $y = -\frac{2}{3}\|x - 1\|$ Vertex: (____, ____) Opens: UP / DOWN MAXIMUM/ MINIMUM of _____ NARROWER / WIDER / SAME
4] $y = \frac{5}{2}\|x + 9\| - 1$ Vertex: (____, ____) Opens: UP / DOWN MAXIMUM/ MINIMUM of _____ NARROWER / WIDER / SAME	5] $y = \frac{3}{4}\|x + 3\| - 6$ Vertex: (____, ____) Opens: UP / DOWN MAXIMUM/ MINIMUM of _____ NARROWER / WIDER / SAME	6] $y = -\|x\| + 5$ Vertex: (____, ____) Opens: UP / DOWN MAXIMUM/ MINIMUM of _____ NARROWER / WIDER / SAME

NEATLY graph each absolute value function.

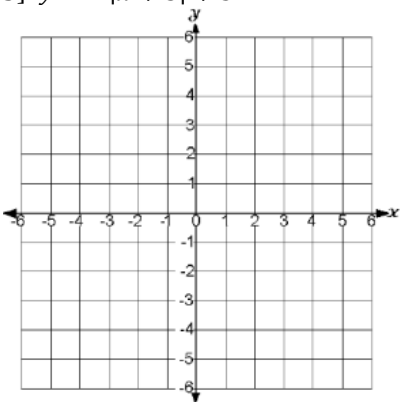
7] $y = 3|x - 3|$



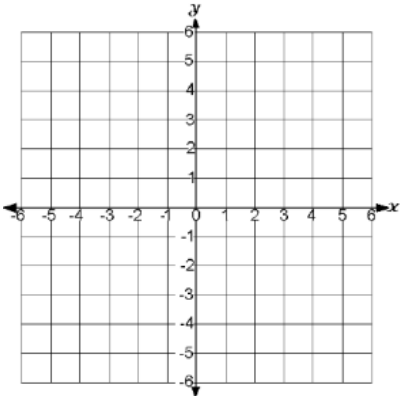
8] $y = -|x| + 4$



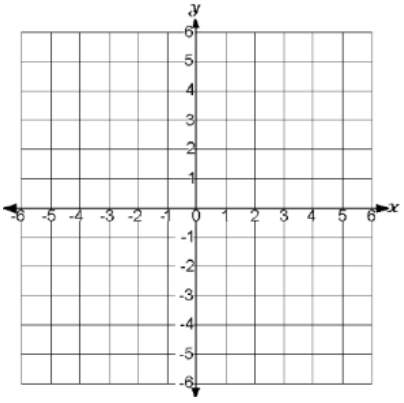
9] $y = -|x + 3| + 5$



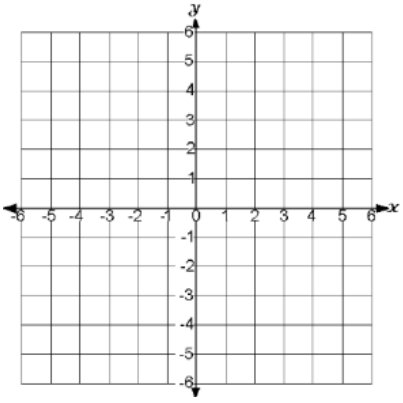
10] $y = 2|x + 1| - 1$



11] $y = \frac{4}{3}|x + 2| - 5$

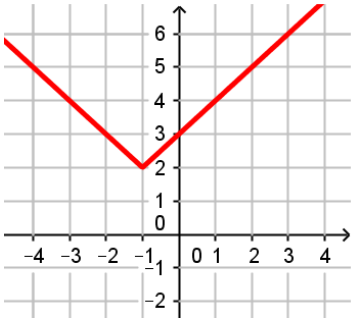


12] $y = -\frac{3}{2}|x - 3| + 2$



Write the equation of the graph. Then give its range as an inequality.

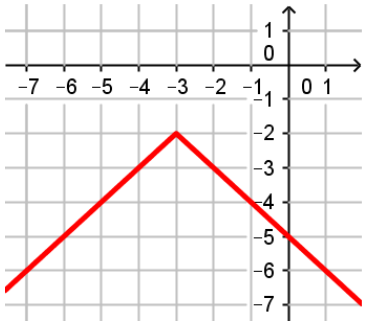
13]



Equation:

Range:

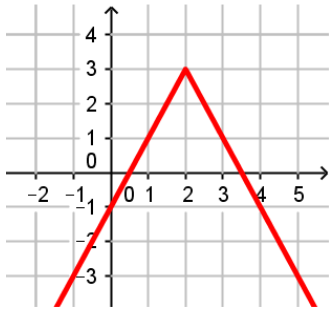
14]



Equation:

Range:

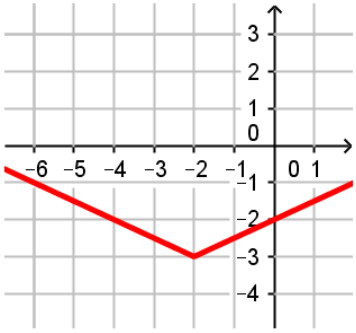
15]



Equation:

Range:

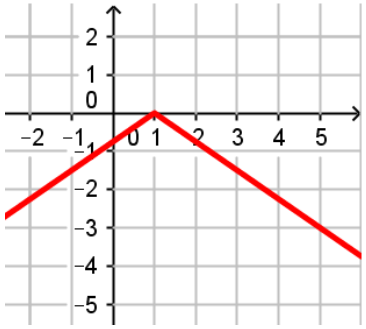
16]



Equation:

Range:

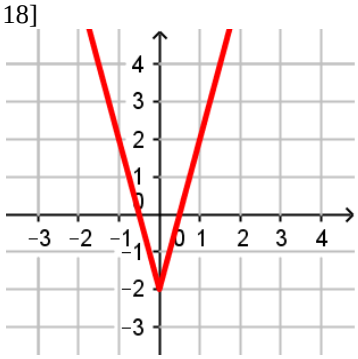
17]



Equation:

Range:

18]



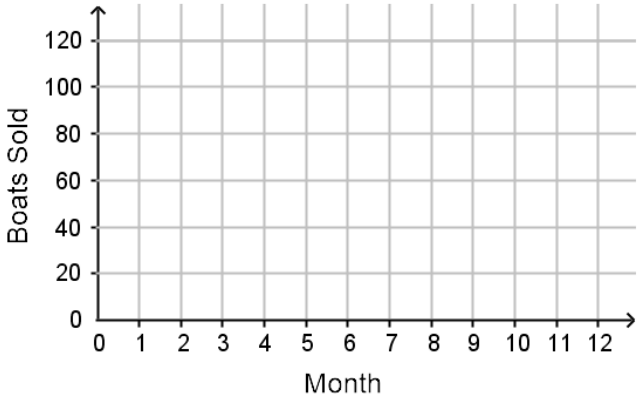
Equation:

Range:

19] The number of boats B a boat dealer sells in each month of the year from <u>March to December</u> can be modeled by the function $B = -15|t - 5| + 120$ where t is the time in months and $t = 1$ represents January.

A] Complete the table of values and then graph the function.

Time (months)	Boats Sold
3	
5	
7	
9	
11	
12	



B] What is the maximum number of sales in one month?

C] In what month is the maximum reached?

D] What is the minimum number of sales in one month?

E] In what month is the minimum reached?