Name: Period: Date:

Practice Worksheet: Absolute Value Graphs

Identify the vertex. Determine if the graph opens up or down (circle one). Determine if the graph is narrower, wider, or the same width (circle one) as the parent graph.
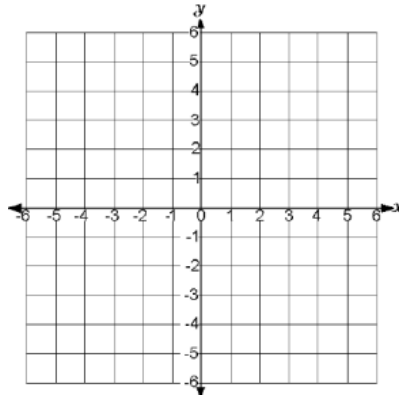
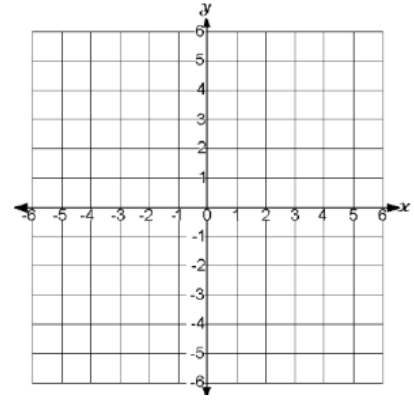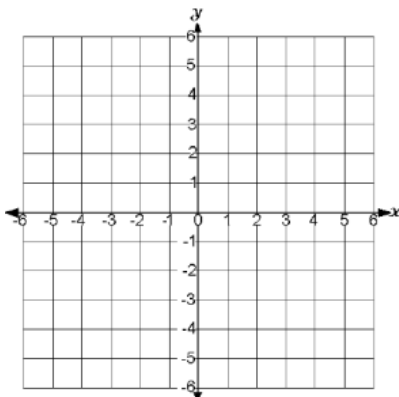| 1] $y = -|x + 1|$	2] $y = 7|x - 3| - 4$	3] $y = -\frac{2}{3}|x - 1|$
Vertex: (____, ____)	Vertex: (____, ____)	Vertex: (____, ____)
Opens: UP / DOWN	Opens: UP / DOWN	Opens: UP / DOWN
NARROWER / WIDER / SAME	NARROWER / WIDER / SAME	NARROWER / WIDER / SAME
4] $y = \frac{5}{2}|x + 9| - 1$	5] $y = \frac{3}{4}|x + 3| - 6$	6] $y = -|x| + 5$
Vertex: (____, ____)	Vertex: (____, ____)	Vertex: (____, ____)
Opens: UP / DOWN	Opens: UP / DOWN	Opens: UP / DOWN
NARROWER / WIDER / SAME	NARROWER / WIDER / SAME	NARROWER / WIDER / SAME

Graph the function.

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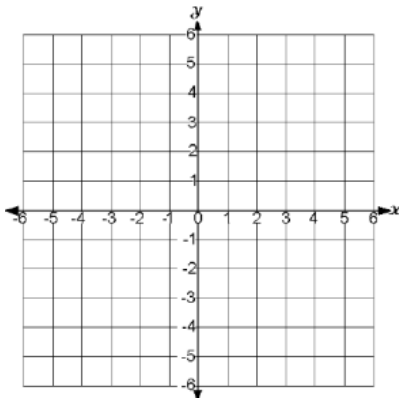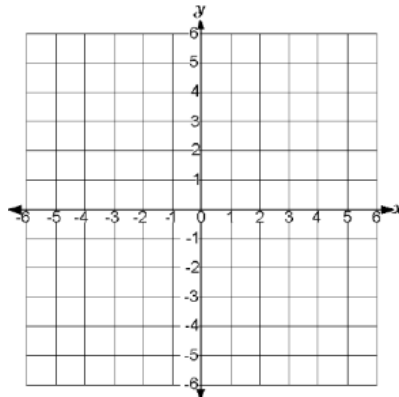

8] $y = -|x| + 4$

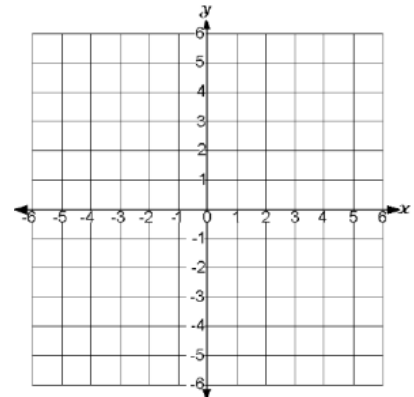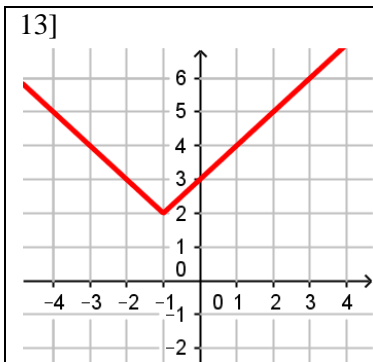
9] $y = -|x + 3| + 5$

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

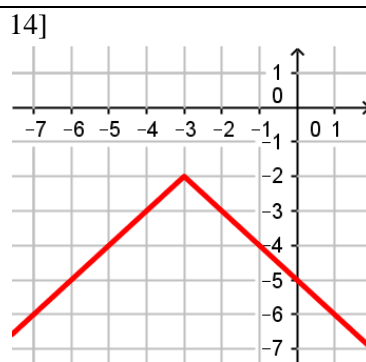11] $y = \frac{4}{3}|x + 2| - 5$

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

Write the equation of the graph. Then give its range.
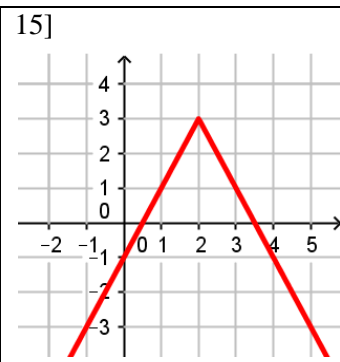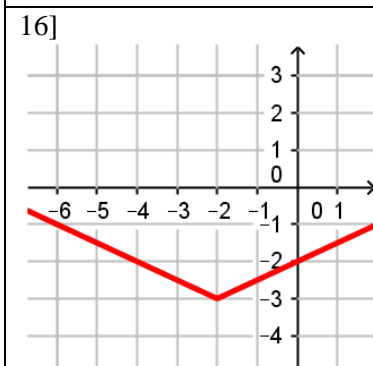
13]

Equation:

Range:

14]

Equation:
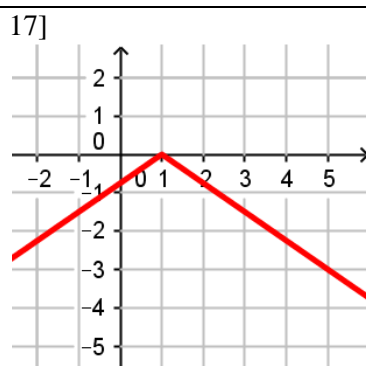
Range:

15]

Equation:

Range:

16]

Equation:

Range:

17]
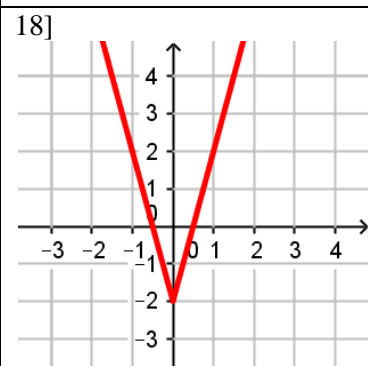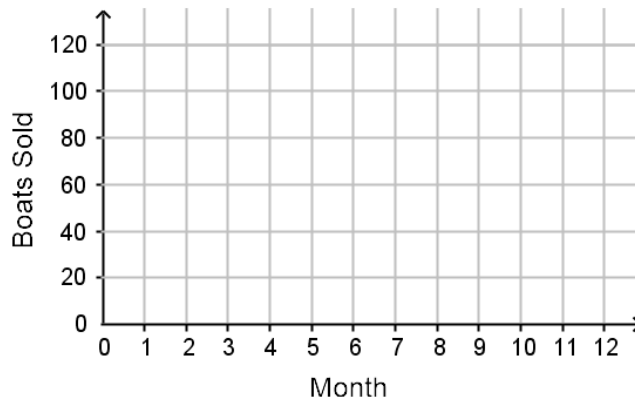
Equation:

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	

Boats Sold
120
100
80
60
40
20
0
0 1 2 3 4 5 6 7 8 9 10 11 12
Month

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

C] What is the minimum number of sales in one month? In what month is the minimum reached?