

Name:

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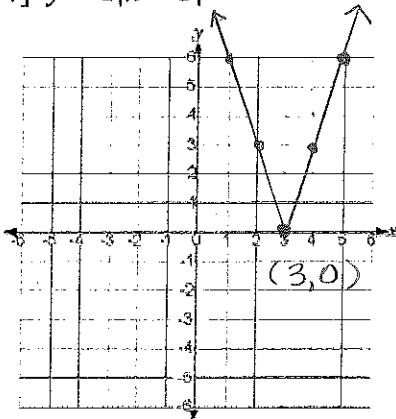
Practice Worksheet: Absolute Value Graphs

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.

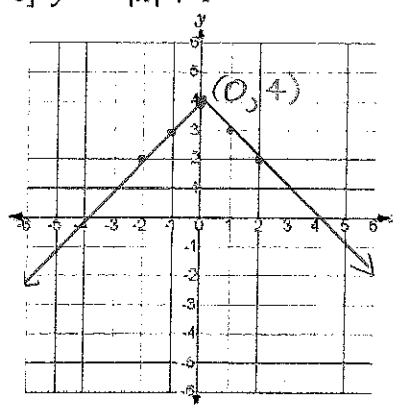
<p>1] $y = - x + 1$</p> <p>Vertex: $(-1, 0)$</p> <p>Opens: UP / <u>DOWN</u></p> <p><u>NARROWER</u> / WIDER / <u>SAME</u></p>	<p>2] $y = 7 x - 3 - 4$ <i>Called a VERTICAL STRETCH</i></p> <p>Vertex: $(3, -4)$</p> <p>Opens: <u>UP</u> / DOWN</p> <p><u>NARROWER</u> / WIDER / SAME</p>	<p>3] $y = \frac{2}{3} x - 1$ <i>Called a VERTICAL SHRINK</i></p> <p>Vertex: (\quad, \quad)</p> <p>Opens: UP / <u>DOWN</u></p> <p>NARROWER / <u>WIDER</u> / SAME</p>
<p>4] $y = \frac{5}{2} x + 9 - 1$</p> <p>Vertex: $(-9, -1)$</p> <p>Opens: <u>UP</u> / DOWN</p> <p><u>NARROWER</u> / WIDER / SAME</p>	<p>5] $y = \frac{3}{4} x + 3 - 6$</p> <p>Vertex: $(-3, -6)$</p> <p>Opens: <u>UP</u> / DOWN</p> <p>NARROWER / <u>WIDER</u> / SAME</p>	<p>6] $y = - x + 5$</p> <p>Vertex: $(0, 5)$</p> <p>Opens: UP / <u>DOWN</u></p> <p>NARROWER / WIDER / <u>SAME</u></p>

Graph the function.

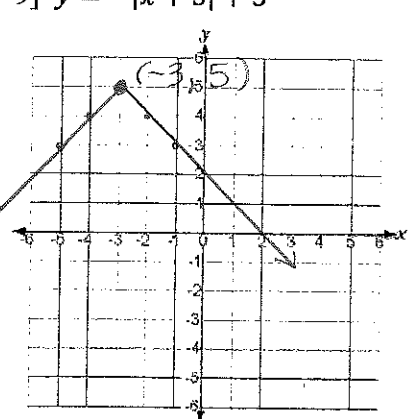
7] $y = 3|x - 3|$



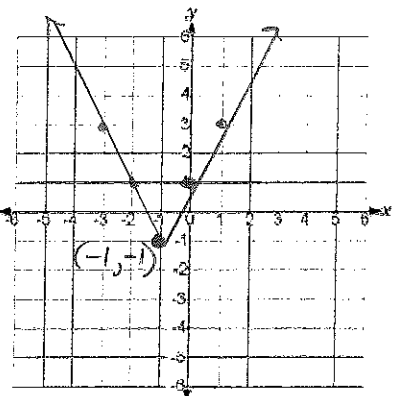
8] $y = -|x| + 4$



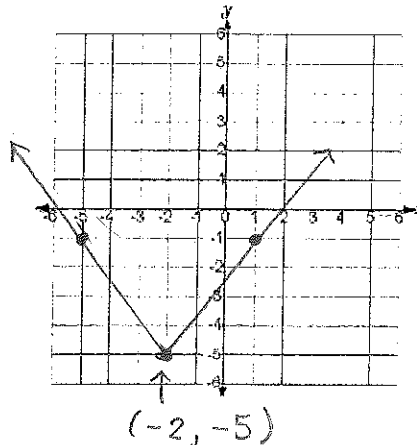
9] $y = -|x + 3| + 5$



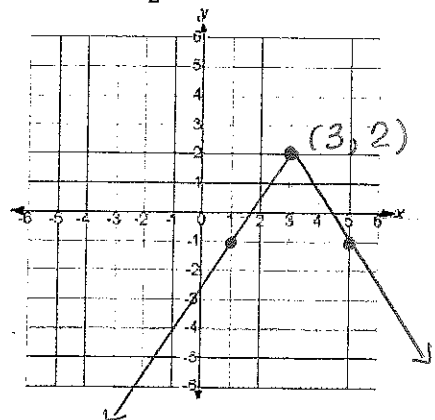
10] $y = 2|x + 1| - 1$



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

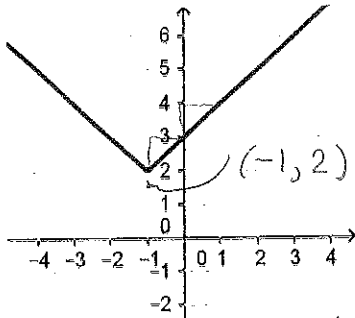


12] $y = -\frac{3}{2}|x - 3| + 2$



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

13]

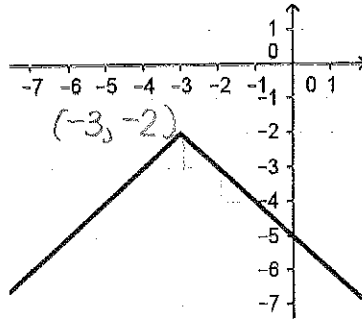


Equation: $y = |x + 1| + 2$

Range: $y \geq 2$

or $f(x)$

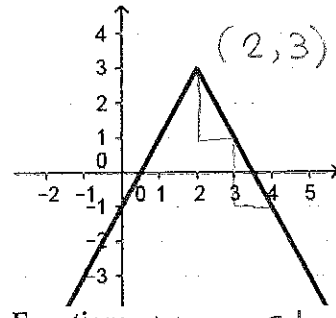
14]



Equation: $y = |x + 3| - 2$

Range: $y \leq -2$

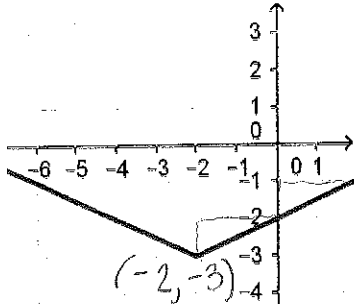
15]



Equation: $y = -2|x - 2| + 3$

Range: $y \leq 3$

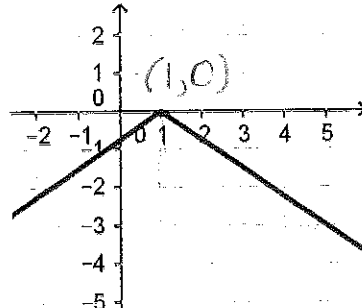
16]



Equation: $y = \frac{1}{2}|x + 2| - 3$

Range: $y \geq -3$

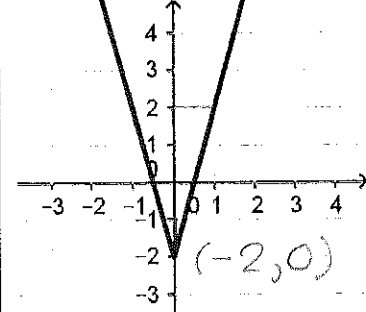
17]



Equation: $y = -\frac{3}{4}|x - 1|$

Range: $y \leq 0$

18]



Equation: $y = 4|x| - 2$

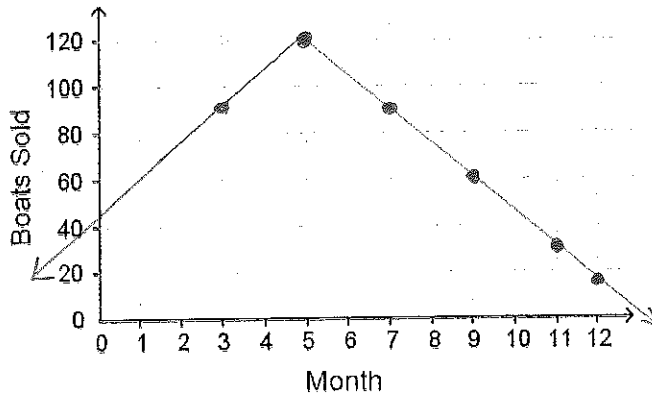
Range: $y \geq -2$

19] The number of boats B a boat dealer sells in each month of the year from March to December 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	90
5	120
7	90
9	60
11	30
12	15

March
May
July
Sept
Nov
Dec



B] What is the maximum number of sales in one month? 120 boats

In what month is the maximum reached? Month 5, May

C] What is the minimum 15 boats number of sales in one month?

In what month is the minimum reached? December