Absolute Value Functions (Graphs)

$+ k$

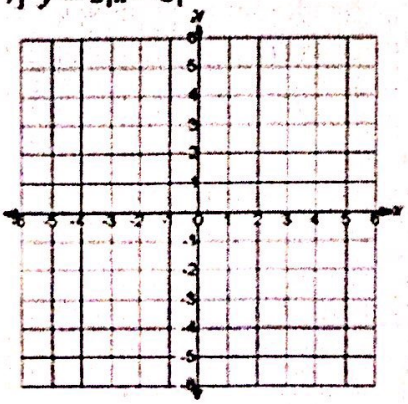
(h , k)

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

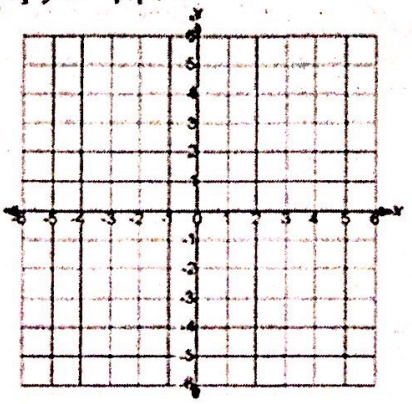
1] $y = -\lvert x + 1 \rvert$ Vertex: (___, ___) Opens: UP / DOWN Slope: ___ MAXIMUM/ MINIMUM NARROWER / WIDER / SAME	2] $y = 7\lvert x - 3 \rvert - 4$ Vertex: (___, ___) Opens: UP / DOWN Slope: ___ MAXIMUM/ MINIMUM NARROWER / WIDER / SAME	3] $y = -\frac{2}{3}\lvert x - 1 \rvert$ Vertex: (___, ___) Opens: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

Part II: Neatly graph each absolute value function on the graph provided. Start with plotting the vertex, then use the slope. You should have at LEAST three points on your graph...feel free to plot 5 to make your graph more accurate!

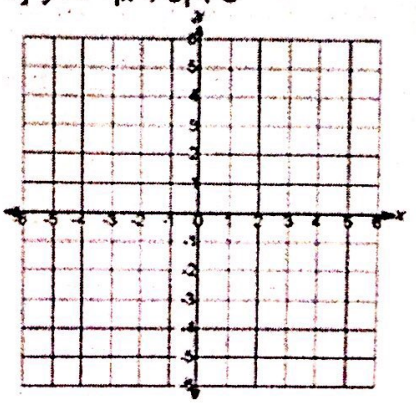
7] $y = 3\lvert x - 3 \rvert$



8] $y = -\lvert x \rvert + 4$



9] $y = -\lvert x + 3 \rvert + 5$



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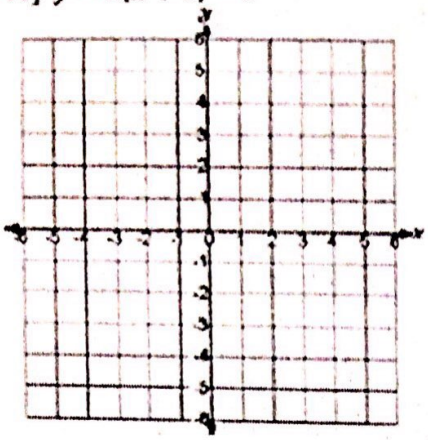
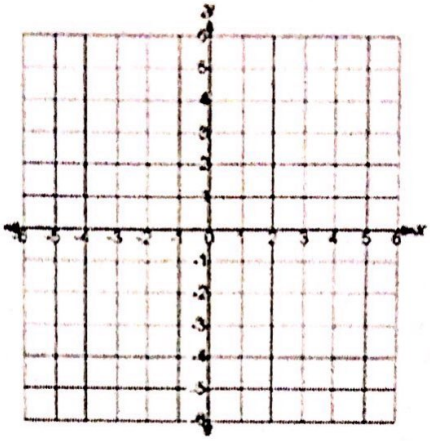
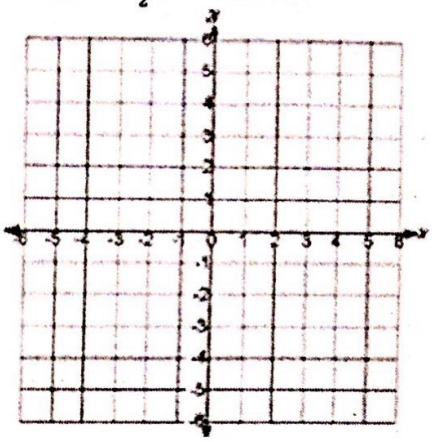
10] $y = 2|x+1| - 1$



11] $y = |x+2| - 5$

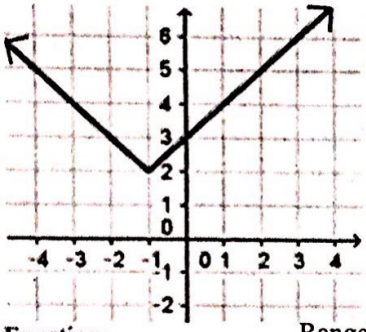


12] $y = -\frac{3}{2}|x-3| + 2$



Part III: Write the absolute value function for each graph. Then provide the range and the intervals of increase and decrease of each function.

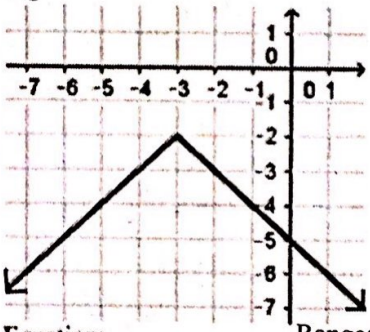
13]



Equation: Range:

Increase: Decrease:

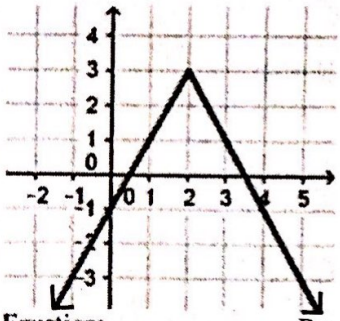
14]



Equation: Range:

Increase: Decrease:

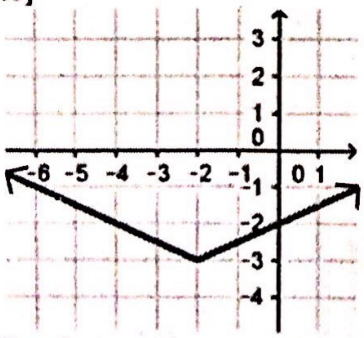
15]



Equation: Range:

Increase: Decrease:

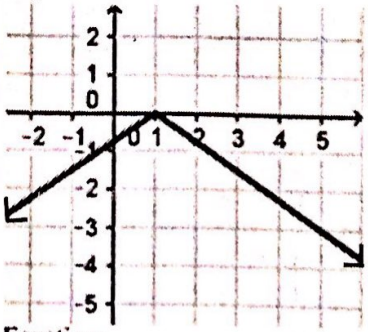
16]



Equation: Range:

Increase: Decrease:

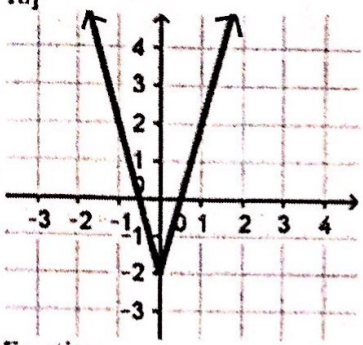
17]



Equation: Range:

Increase: Decrease:

18]



Equation: Range:

Increase: Decrease:

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