

## Graphs of Absolute Value Functions

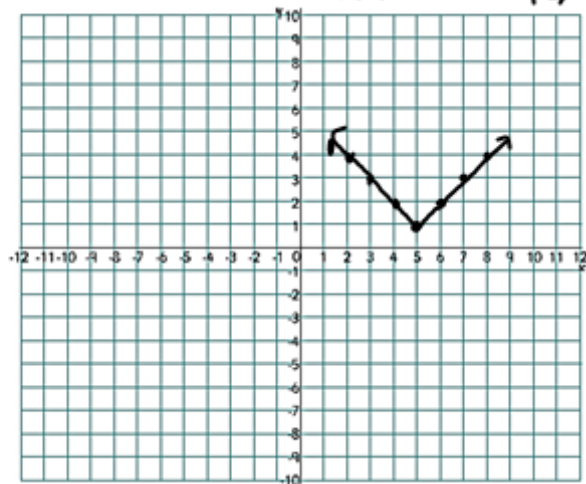
### Advanced Algebra

Name: Key  
 Period: \_\_\_\_\_ Date: \_\_\_\_\_

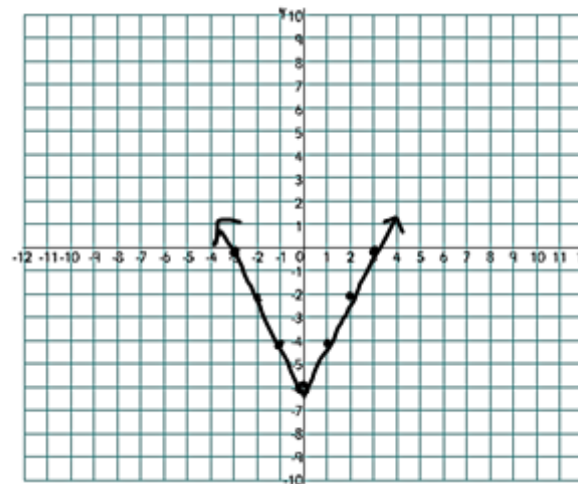
Target 2B. Understand the relationship between an equation and its graph.

Without using a calculator, graph each absolute value function on the coordinate plane.

1.  $f(x) = \frac{1}{4}|x - 5| + 1$   
 Vertex =  $V = (5, 1)$   
 Slope =  $a = \frac{1}{4}$

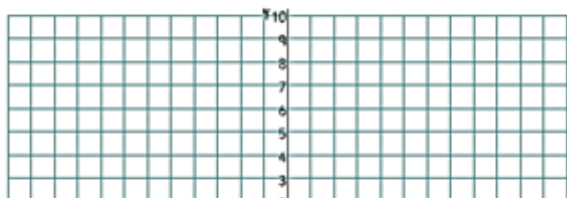


2.  $f(x) = 2|x| - 6$   
 $V = (0, -6)$   
 $a = \frac{2}{1}$

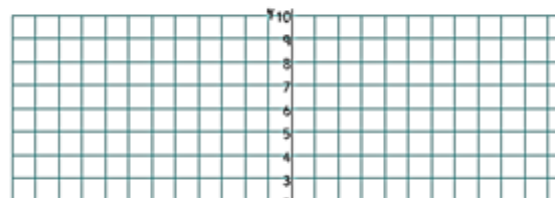


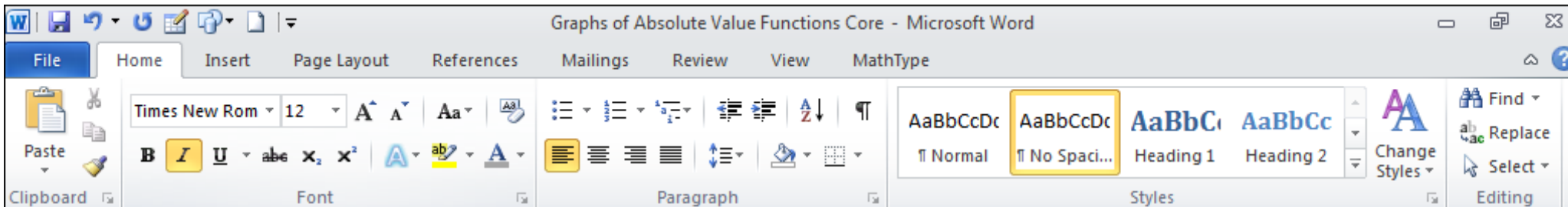
General Pattern  
 $f(x) = a|x - h| + k$   
 slope =  $\frac{a}{1}$   
 vertex =  $(h, k)$

3.  $f(x) = -\frac{1}{3}|x + 1| + 3$



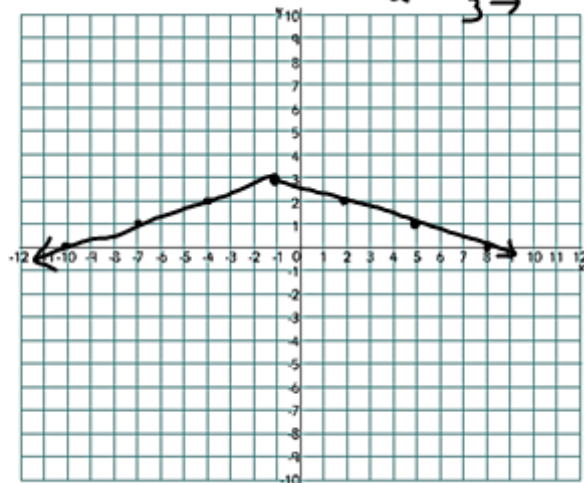
4.  $f(x) = \frac{1}{2}|x|$





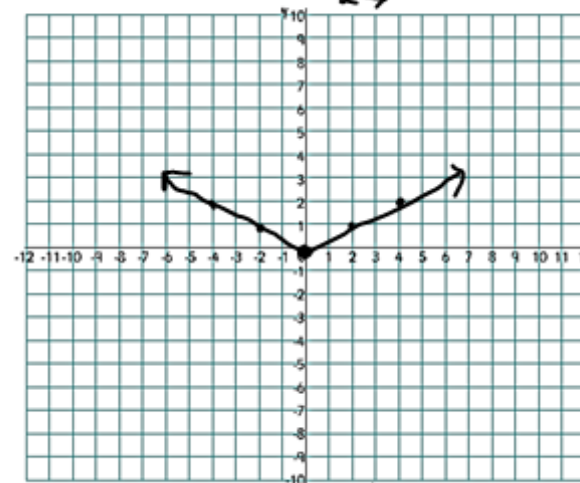
3.  $f(x) = -\frac{1}{3}|x + 1| + 3$

$V = (-1, 3)$   
 $a = -\frac{1}{3}$



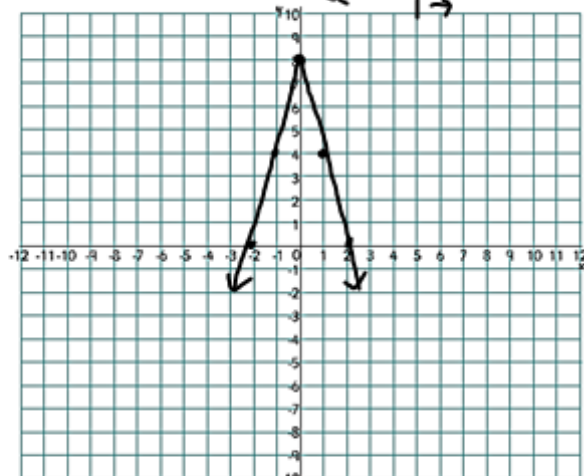
4.  $f(x) = \frac{1}{2}|x|$

$V = (0, 0)$   
 $a = \frac{1}{2}$



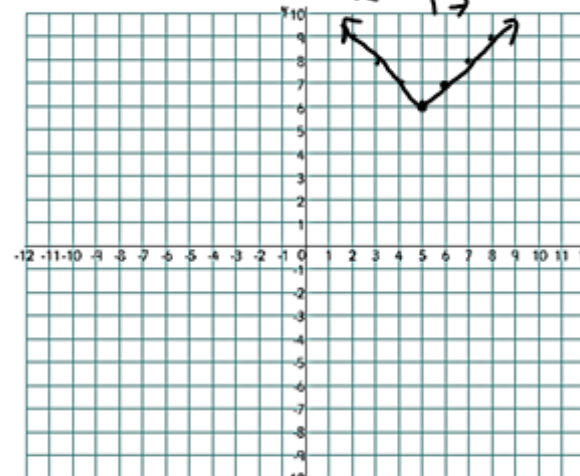
5.  $f(x) = -4|x| + 8$

$V = (0, 8)$   
 $a = -4$



6.  $f(x) = \frac{1}{4}|x - 5| + 6$

$V = (5, 6)$   
 $a = \frac{1}{4}$



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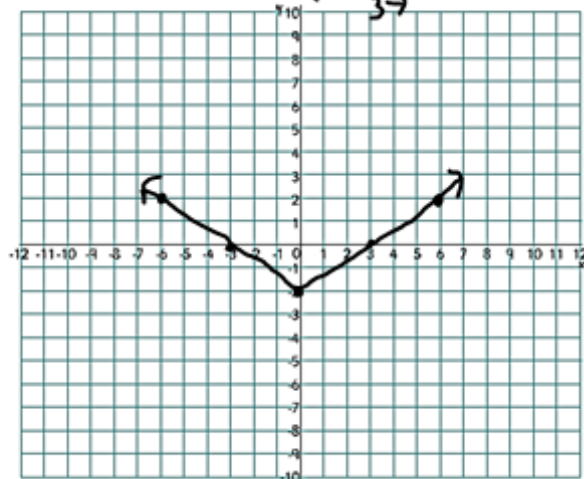
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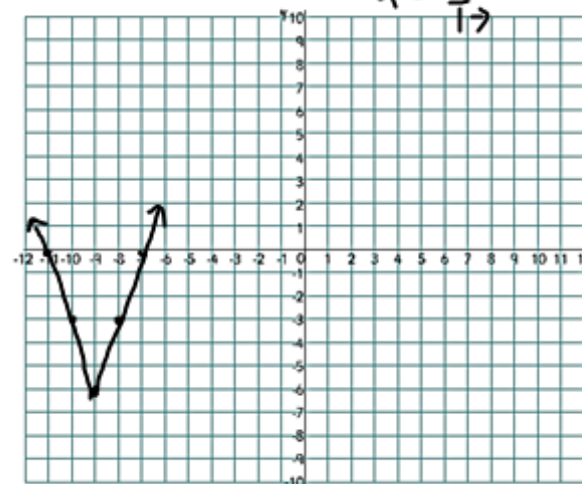
7.  $f(x) = \frac{2}{3}|x| - 2$

$V = (0, -2)$   
 $a = \frac{2}{3} \uparrow$



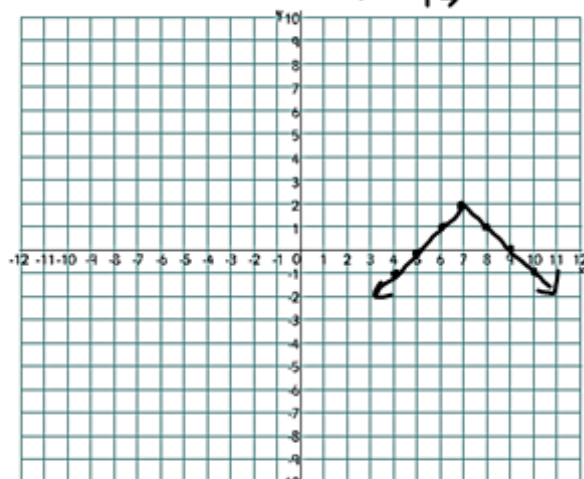
8.  $f(x) = 3|x + 9| - 6$

$V = (-9, -6)$   
 $a = \frac{3}{1} \uparrow$



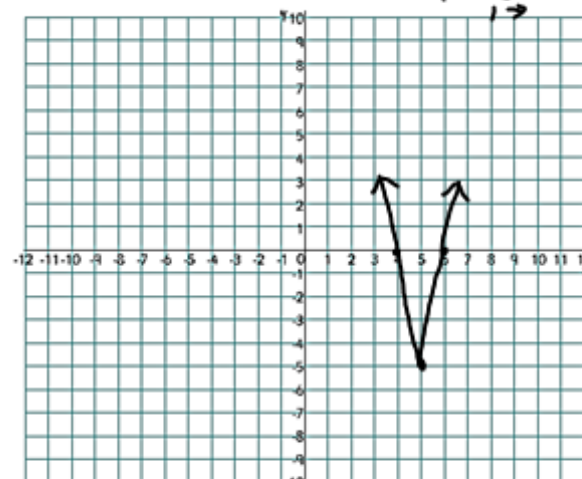
9.  $f(x) = \frac{1}{4}|x - 7| + 2$

$V = (7, 2)$   
 $a = \frac{1}{4} \downarrow$



10.  $f(x) = 5|x - 5| - 5$

$V = (5, -5)$   
 $a = \frac{5}{1} \uparrow$



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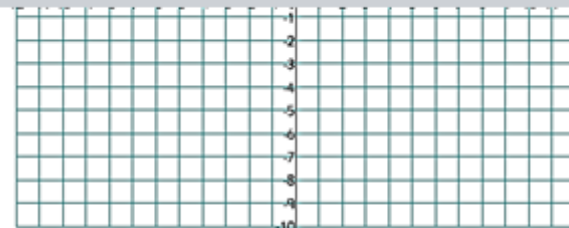
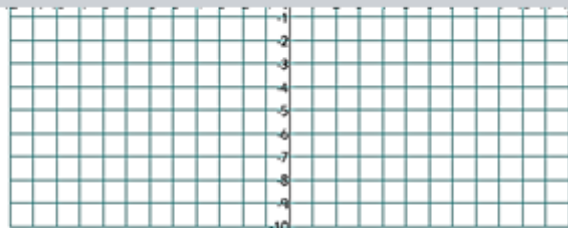
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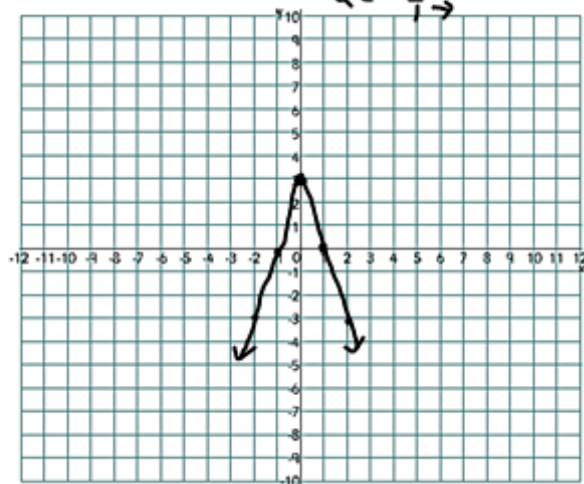
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11.  $f(x) = -3|x| + 3$

$V = (0, 3)$   
 $a = -\frac{3}{1} \rightarrow$



12.  $f(x) = 5|x + 5|$

$V = (-5, 0)$   
 $a = \frac{5}{1} \rightarrow$

