Write the parent function f(x) and the translated functions g(x) for the following.

1. A function that has been translated up 3 units and to the left 5 units.

2. A function that has been translated 2 units right and reflected across the x-axis.

3. A function that has been vertically translated 1 unit down, stretched vertically by a factor of 4 and shifted 6 units right.

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Section 2-7
Absolute Value Functions and Graphs

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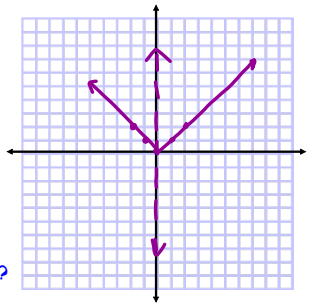
Absolute Value Function: f(x) = |x|

Graph the function:

y = |x|

x	y
-2	2
-1	1
0	0
1	1
2	2



Where is the vertex? (0,0)

Where is the axis of symmetry? x=0

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Graph the function. Then compare it to the parent function.

Seat 1- g(x) = -|x| -2
reflect x-axis, down 2

Seat 2- h(x) = -|x + 3|
reflect x-axis, left 3

Seat 3- j(x) = |x + 1| + 2
left 1, up 2

Seat 4- k(x) = -3 + |x -1|
down 3, right 1

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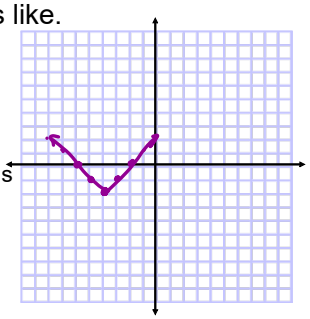
Using what you know about transformations of graphs, show what the function f(x) = |x + 4| -2 looks like.

left 4, down 2

x	y
-6	0
-5	-1
-4	-2
-3	-1
-2	0



Describe the transformations from the parent function.

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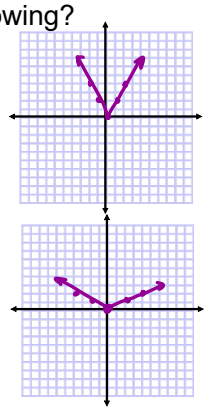
What is the graph of the following?

f(x) = 2|x|

x	y
-2	4
-1	2
0	0
1	2
2	4

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



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General Form of the Absolute Value Function

$y = a|x - h| + k$

Vertex form of abs. value

The stretch or compression factor is $|a|$, the vertex is located at (h, k) and the axis of symmetry is the line $x = h$.

Note: a describes the slope of the right branch.

$y = -2|x + 7| - 3$ $(-7, 3)$ $x = -7$

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Without graphing, state the vertex and the axis of symmetry, and describe the transformation from the parent function.

$y = -2|x - 1| - 3$

v: $(1, -3)$

a of sym: $x = 1$

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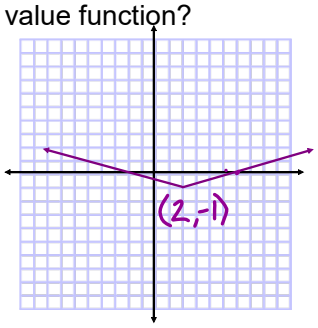
What is the absolute value function?

$y = a|x - h| + k$

$y = \frac{1}{4}|x - 2| - 1$



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From hwk: pg 112

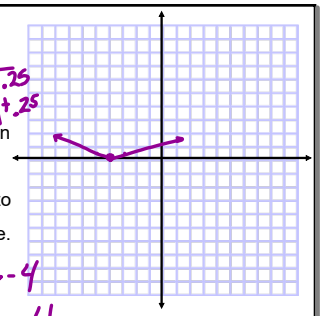
#36. $y = |-\frac{1}{4}x - 1|$

-note, when there is a coefficient on the inside of the absolute value symbols, you set the inside equal to 0 and solve to find the x-coordinate.

$-\frac{1}{4}x - 1 = 0$ $+1 \quad +1$

$-\frac{1}{4}x = 1$ $\cdot -4$

$x = -4$ $h = -4$



Oct 4-11:10 AM

Hwk: pg. 111 - 113

#8 - 28 (4th), 30, 33, 34, 36, 40

52 - 64 evens

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