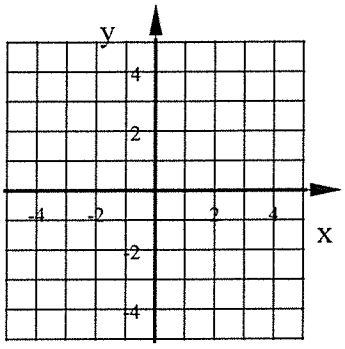
Classwork Alg 2A Tuesday, September 27, 2016

Graph of Absolute Value Equations: The graphs of Absolute Value Equations you will be studying will always be a "V"-shape.

1. Graph of $y = |x|$ using the table below.
This is the graph of the Parent Absolute Value Function

X	Y
−2	
−1	
0	
1	
2	



2. Use this graph to answer the following:
   a) What are the coordinates of the Vertex?
   b) What are the slopes of the two sides of the V?
   c) Which way does the V-shape open?

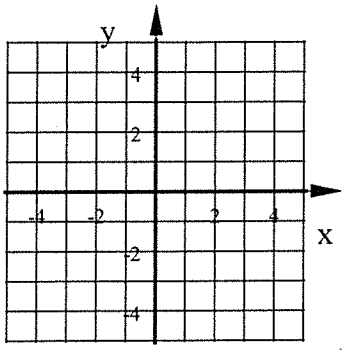
a).

b).

c).

3. Graph $y = -|x|$ using the table below.

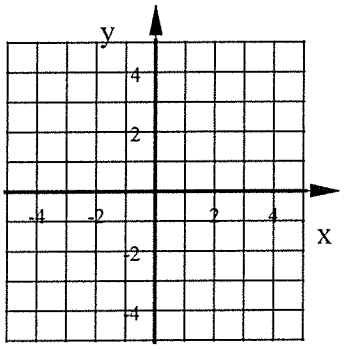
X	Y
−2	
−1	
0	
1	
2	



What does the negative in front of the Absoltue Value do to the graph?

4. Graph $y = 2|x|$ using the table below.

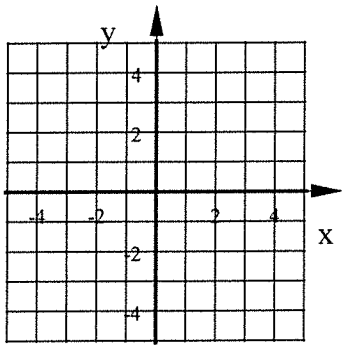
X	Y
−2	
−1	
0	
1	
2	



What does the 2 in front of the Absolute Value do to the graph?

5. Graph $y = |x| - 4$ using the table.

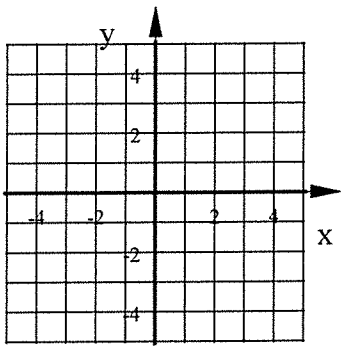
X	Y
−2	
−1	
0	
1	
2	



What did the −4 at the end of the eq do to the graph?

6. Graph $y = |x + 2|$ using the table.
for this graph you may to use additional points to see the whole V-shape.

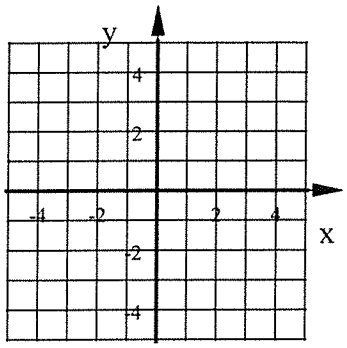
X	Y
−2	
−1	
0	
1	
2	



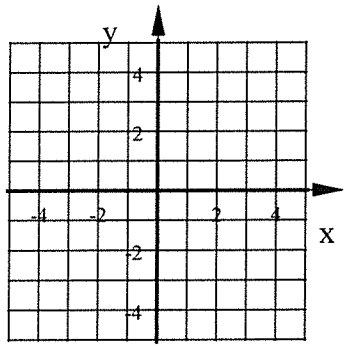
What did the +2 inside of the Abs Value do to the graph?

7. Make up your own table to graph the following equations. Make sure your graph shows the entire V-shape by having the Vertex and at least two points on either side of the vertex..

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



b) $y = -3|x + 1| + 5$



8. Use the work you've done on this sheet to summarize the graphs of the Absolute Value Function.

a. $y = a|x|$ the value of a tells us two things. Name these two characteristics

i. ii.

b. If you see $y = |x + h|$ which way did the graph move?

c. If you see $y = |x - h|$ which way did the graph move?

d. If you see $y = |x| + k$ which way did the graph move?

e. If you see $y = |x| - k$ which way did the graph move?

9. Write an equation that shows the following transformations of the Parent Function $y = |x|$
Shifted 5 units left and 6 units down. Opens down. Graph is four times taller (slope of sides is ± 4).
EQ:

10. Find the coordinates of the vertex and slope of the sides of this graph then write the equation of the graph.

Vertex: Slope of sides: EQ: