Functions in Algebra 1:

Linear Functions:

EQ: $y = mx + b$

Graph: Line

Absolute Value Functions:

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

Graph: V-Shape

Quadratic Functions:

EQ: $y = ax^2 + bx + c$
or
$y = a(x - h)^2 + k$

Graph: Parabola

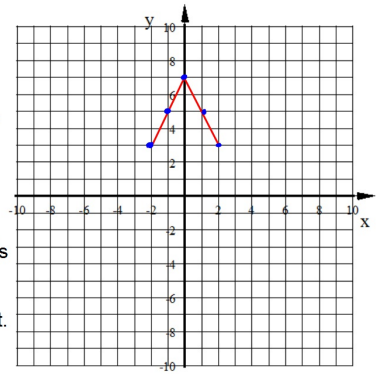
Graph this function, use at least 5 points.

$$f(x) = -2|x| + 7$$

X	Y
-2	3
-1	5
0	7
1	5
2	3

The equation indicates that the graph should be a V-shape that opens down.

Since this is what the graph looked like when I plotted the points I got from the table I have confindence that my graph is correct.



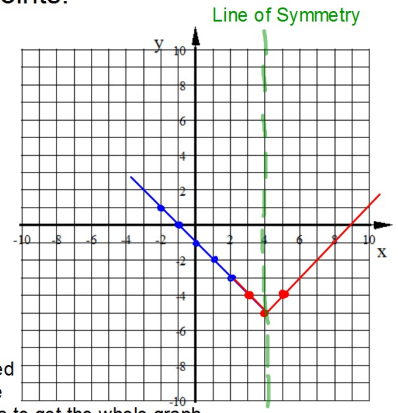
Graph this function, use at least 5 points.

$$y = |x - 4| - 5$$

X	Y
-2	1
-1	0
0	-1
1	-2
2	-3

X	Y
3	-4
4	-5
5	-4

Sometimes you need to extend your table to get enough points to get the whole graph.



Graph this function, use at least 5 points.

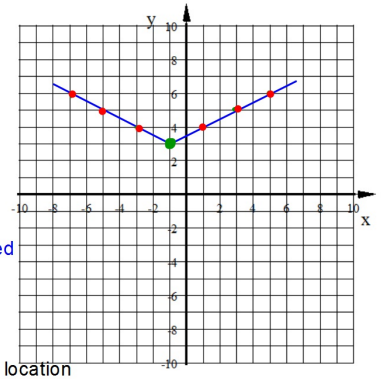
$$y = \frac{1}{2}|x + 1| + 3$$

This coefficient turns out to be the slope of the sides of the V

+3 at the end indicates the graph moved 3 units up

x + 1 indicates that the graph has moved 1 unit left

These two give the location of the vertex. Then you can use the slope to find the remaining points.



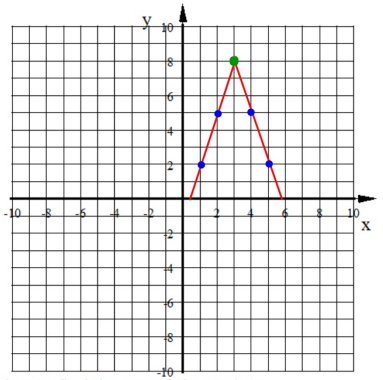
Graph this function, use at least 5 points.

$y = -3|x - 3| + 8$

Neg means it opens down.

Slope of the sides is 3

This shows the graph moved 3 right and 8 up. The vertex will be (3,8)



Plot the vertex then use the slope of the sides to find the remaining points.

You can now finish Hwk #20

Sec 5-3

Use the Sheet I've printed for you

Pages 249-250

Problems 6, 7, 18, 19, 21, 23, 27, 37