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
$y = a(x - h)^2 + k$

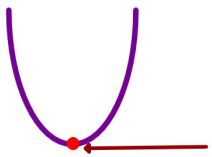
Graph: Parabola

Graphs of Parabolas and V-shapes

Quadratic Functions

$y = a(x-h)^2 + k$

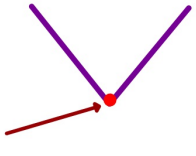
$y = ax^2 + bx + c$



Vertex

Absoltue Value Functions

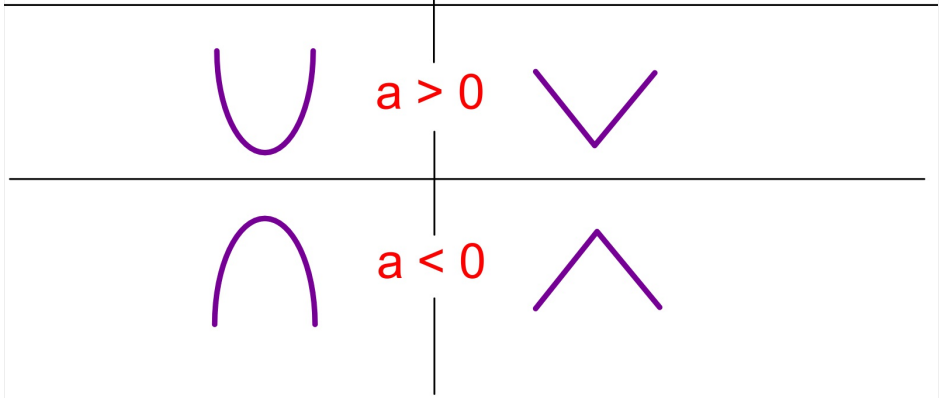
$y = a|x - h| + k$



$y = a(x-h)^2 + k$

$y = ax^2 + bx + c$

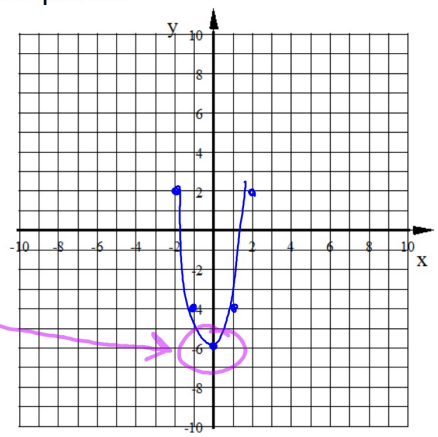
$y = a|x - h| + k$



Graph this function, use at least 5 points.

$y = 2x^2 - 6$

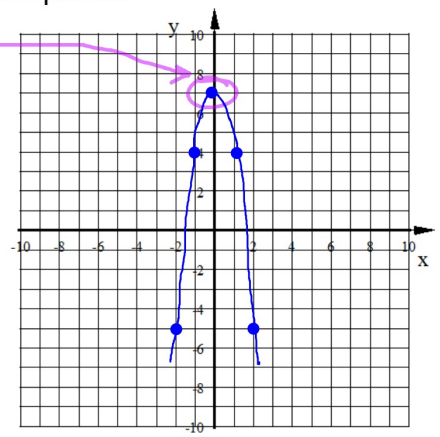
x	y
-2	2
-1	-4
0	-6
1	-4
2	2



Graph this function, use at least 5 points.

$y = -3x^2 + 7$

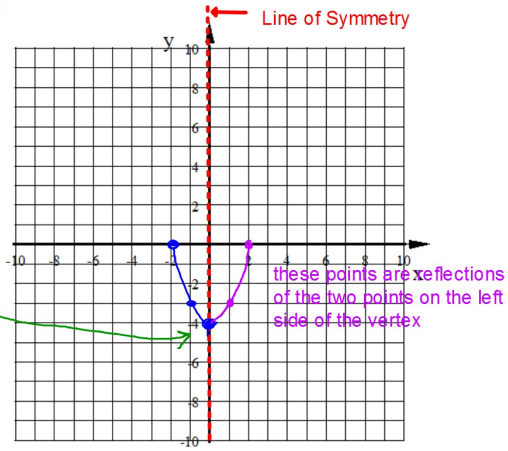
X	Y
-2	-5
-1	4
0	7
1	4
2	-5



whenever the equation of a parabola only has:
$y = ax^2 + c$ the value of c becomes the vertex of the parabola. You can then use a table for two more points and reflect them over the Line of Symmetry.

$y = x^2 - 4$

X	Y
-2	0
-1	-3



Graph this function, use at least 5 points.

$y = 3x^2 + 12x + 4$

this parabola should open up. The only part of the table that can be graphed gives the right side of the parabola

X	Y
-2	-8
-1	-5
0	4
1	19
2	40

These points won't fit on the graph.

To see the rest of the parabola you need the left side so extend the table to include more x values to the left of -2

X	Y
-3	-5
-4	4