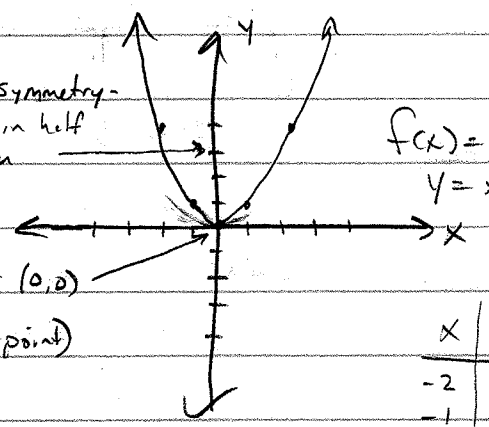
4.1 Graph Quadratic Functions

Standard form: $y = ax^2 + bx + c$

A quadratic function has shape called a parabola.

A curve, not a line.

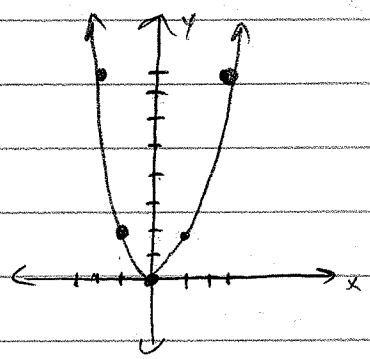


$f(x) = x^2$ or $y = x^2$

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

Graph $y = 2x^2$

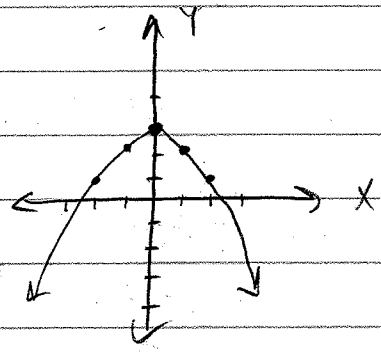
x	y	
-2	8	$2(-2)^2$
-1	2	$2(-1)^2$
0	0	$2(0)^2$
1	2	$2(1)^2$
2	8	$2(2)^2$



* Draw a smooth curve thru the points

Graph $y = -\frac{1}{2}x^2 + 3$

X	y	
-2	1	$-\frac{1}{2}(-2)^2 + 3$
-1	$2\frac{1}{2}$	$-\frac{1}{2}(-1)^2 + 3$
0	3	$-\frac{1}{2}(0)^2 + 3$
1	$2\frac{1}{2}$	$-\frac{1}{2}(1)^2 + 3$
2	1	$-\frac{1}{2}(2)^2 + 3$



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