Graphing Quadratic Equations Worksheet 1

$y = ax^2 + bx + c$

$a>0$ min
$a<0$ max

Identify the following for each equation: $x = \frac{-b}{2a}$

Equation	y-intercept if $x=0$	axis of symmetry	vertex plug -b/2a into the equation & calculate y	maximum or minimum
1. $y = 3x^2$ $y=3(0)^2$ $y=0$	$y=0$ (0,0)	$x=\frac{-0}{2(3)}$ $x=0$	(0,0)	min
2. $y = x^2 - 4x$	$y=0$	$x=\frac{4}{2(1)}=2$	(2,-4)	min
3. $y = -x^2 -3x +4$	$y=4$	$x=\frac{3}{2(-1)}=\frac{-3}{2}$	$(\frac{-3}{2}, 6.25)$	$a<0$ max
4. $y = 4x^2 -6x -3$	$y=-3$	$x=\frac{6}{2(4)}=\frac{6}{8}$	$(\frac{3}{4}, -5.25)$	$a>0 \rightarrow$ up min
5. $y = -2x^2 + 8x - 5$	$y=-5$	$x=\frac{-8}{2(-2)}=2$	(2,3)	$a<0 \rightarrow$ down max

$a=-2$
$b=8$
$c=-5$

$y=-2(2)^2+8(2)-5$
$y=-8+16-5$
$-13+16$
3

Name _____

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Graph the equations from the table on page 1

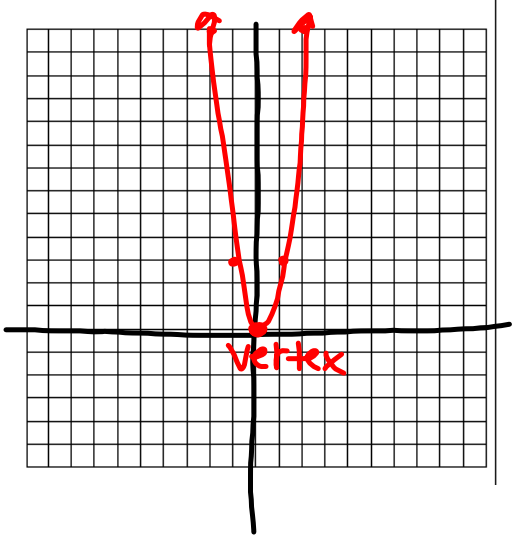
1. $y = 3x^2$

x	y
-2	12
-1	3
Vertex 0	0
1	3
2	12

$y = 3(-2)^2 = 12$

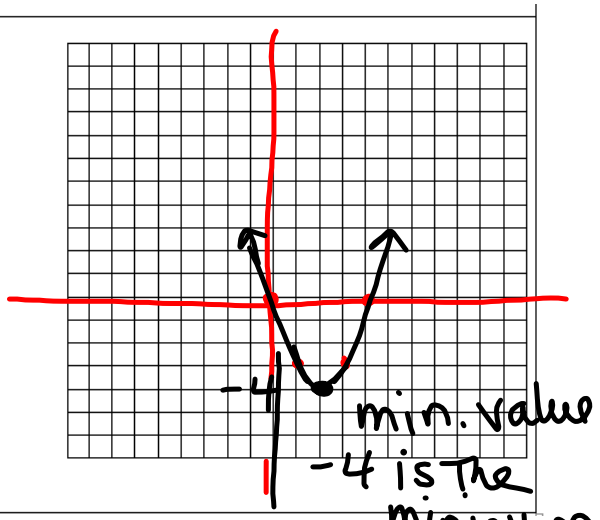
$y = 3(-1)^2 = 3$

$y = 3(1)^2 = 3$



2. $y = x^2 - 4x$

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



3. $y = -x^2 - 3x + 4$

x	y
-4	0
-3	4
$-\frac{3}{2}$	6.25
0	4
1	0