Worksheet on Vertical Functions (V1)

Equation	Basic Shape	Vertex "vertex"	Value of a	Up or Down	W N S	Final Shape
$Y= 3(x - 4)^2 + 7$						
$Y = -5\|x - 7\| + 6$						
$Y = \frac{1}{2}x^3 - 4$						
$Y = -x^2 - 9$						
$Y = (3 - x)^2$						
$Y = 2 + \|x-2\|$						
$Y = -2x^2 - 4x + 3$						
$Y = x^2 + 2x - 6$						

Worksheet on Vertical Functions (V1)

Equation	Basic Shape	Vertex "vertex"	Value of a	Up or Down	W N S	Final Shape
$y = 3(x-4)^2 + 7$		(4,7)	3	up	N	
$y = -5\|x-7\| + 6$		(7,6)	-5	down	N	
$y = \frac{1}{2}x^3 - 4$		(0,-4)	$\frac{1}{2}$	"up" positive slope	W	
$y = -x^2 - 9$		(0,-9)	-1	down	S	
$y = (3-x)^2$		(3,0)	1	up	S	
$y = 2 + \|x-2\|$		(2,2)	1	up	S	
$y = -2x^2 - 4x + 3$		(-1,5)	-2	down	N	
$y = x^2 + 2x - 6$		(-1,-3)	1	up	S	

$-2x^2 - 4x + 3$

$a = -2$
$b = -4$
$c = 3$

$h = \frac{-b}{2a} = \frac{-(-4)}{2(-2)} = \frac{4}{-4} = -1$

$k = -2(-1)^2 - 4(-1) + 3$
$= -2(1) + 4 + 3 = 5$

$(-1, 5)$

$x^2 + 2x - 6$

$a = 1 \quad b = 2 \quad c = -6$

$h = \frac{-b}{2a} = \frac{-2}{2(1)} = -1$

$k = (1)^2 + 2(1) - 6 = -3$
$= 1 + 2 - 6$

$(-1, -3)$