

Worksheet on Vertical Functions (V2)

Equation	Basic Shape	Vertex "vertex"	Value of a	Up or Down	W N S	Final Shape
$Y = -3(x + 6)^2 + 7$						
$Y = 5 x - 9 + 2$						
$Y = -\frac{1}{2}x^3 + 8$						
$Y = -6x^2 + 9$						
$Y = -2(-5 - x)^2$						
$Y = -5 + x - 9 $						
$Y = -2x^2 + 4x + 5$						
$Y = x^2 - 2x - 9$						

Worksheet on Vertical Functions (V2)

Equation	Basic Shape	Vertex "vertex"	Value of a	Up or Down (U/D)	W N S	Final Shape
$y = -3(x+6)^2 + 7$		$(-6, 7)$	-3	D	N	
$y = 5 x-9 + 2$		$(9, 2)$	5	U	N	
$y = -\frac{1}{2}x^3 + 8$		$(0, 8)$	-1	down \Rightarrow neg. slope	W	
$y = -6x^2 + 9$		$(0, 9)$	-6	D	N	
$y = -2(-5-x)^2$		$(-5, 0)$	-2	D	N	
$y = -5 + x-9 $ $ x-9 - 5$		$(9, -5)$	1	U	S	
$y = -2x^2 + 4x + 5$		$(1, 7)$	-2	D	N	
$y = x^2 - 2x - 9$		$(1, -10)$	1	U	S	

$$a = -2 \quad b = 4 \quad c = 5$$

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

$$k = -2(1)^2 + 4(1) + 5 = -2 + 4 + 5 = 7$$

$$(1, 7)$$

$$a = 1 \quad b = -2 \quad c = -9$$

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

$$k = (1)^2 - 2(1) - 9 = 1 - 2 - 9 = -10$$

$$(1, -10)$$