Graphing Quadratic Functions; Using a Table

EXAMPLES

Sketch each graph.

1) $y + x^2 = 8x - 4$

$x = \frac{-b}{2a}$

$x = \frac{-8}{-2} = 4$

$y = -(4)^2 + 8(4) - 4$

$y = -16 + 32 - 4$

a) Standard Form: $y = -x^2 + 8x - 4$

b) $a = -1$, $b = 8$, and $c = -4$

c) axis of symmetry: $x = 4$

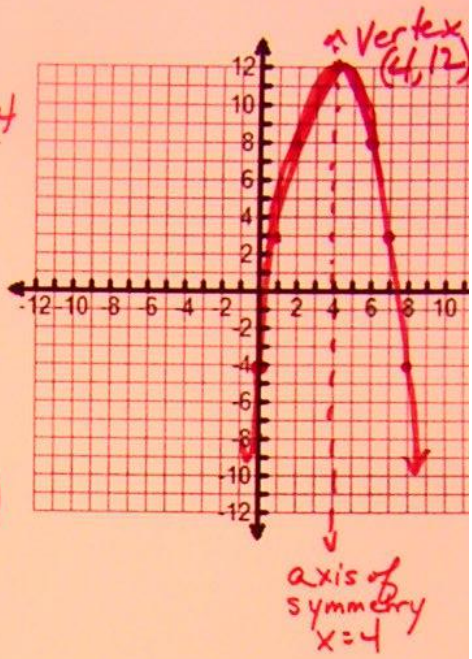
d) upward or downward? a is neg

e) vertex: (4, 12)

f) y-intercept: (0, -4)

g) Complete the table with additional points. (You choose the x-values.)

x	f(x) = $-x^2 + 8x - 4$	f(x)	
2	$-(2)^2 + 8(2) - 4$	8	(2, 8)
	$-4 + 16 - 4$		
1	$-(1)^2 + 8(1) - 4$	3	
	$-1 + 8 - 4$		



2) $-x^2 + y + 2 = -6x$

$x = \frac{-b}{2a}$

$x = \frac{6}{2 \cdot 1} = 3$

a) Standard Form: $y = x^2 - 6x - 2$

b) $a = 1$, $b = -6$, and $c = -2$

c) axis of symmetry: $x = 3$

d) upward or downward?

e) vertex: (3, -11) $y = 3^2 - 6 \cdot 3 - 2$, $y = 9 - 18 - 2$

f) y-intercept: (0, -2)

g) Complete the table with additional points. (You choose the x-values.)

x	f(x) = $y = x^2 - 6x - 2$	f(x)	
2	$2^2 - 6(2) - 2$	-10	(2, -10)
	$4 - 12 - 2$		
1	$1^2 - 6(1) - 2$	-7	
	$1 - 6 - 2$