

Quadratics Worksheet 2

I. Put each quadratic in vertex form.

1.  $y = x^2 - 6x + 11$

$\frac{-b}{2a} = \frac{6}{2} = 3$

$f(3) = 2$

$y = (x-3)^2 + 2$

2.  $y = 15 - 4x - 2x^2$

$y = -2x^2 - 4x + 15$

$\frac{-b}{2a} = \frac{4}{-4} = -1 \quad f(-1) = 17$

$y = -2(x+1)^2 + 17$

3.  $y = 3x^2 - 9x + 17$

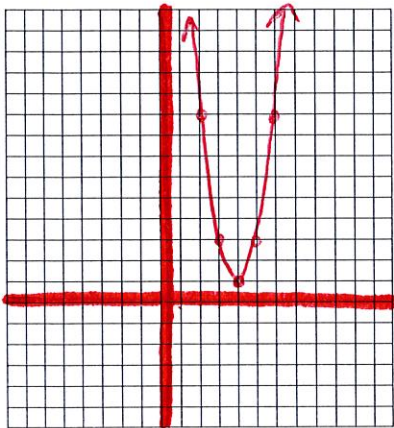
$\frac{-b}{2a} = \frac{9}{6} = \frac{3}{2}$

$f(3/2) = 10.25$

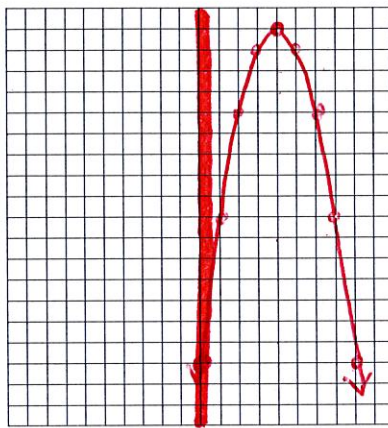
$y = 3(x-1.5)^2 + 10.25$

II. Put each quadratic in vertex form, then sketch the graph.

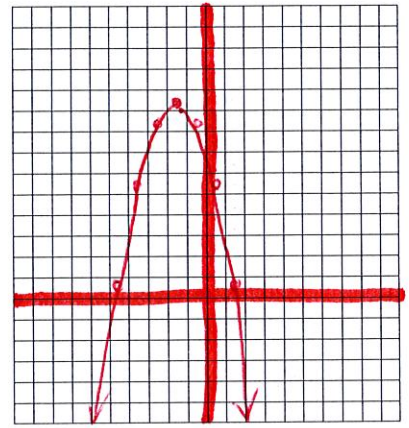
4.  $y = 2x^2 - 16x + 33 \quad (4, 1)$



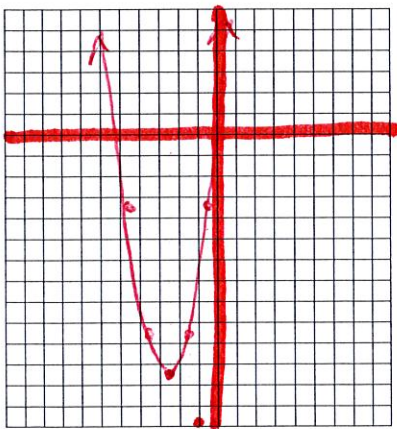
5.  $y = -x^2 + 8x + 13 \quad (4, 29)$



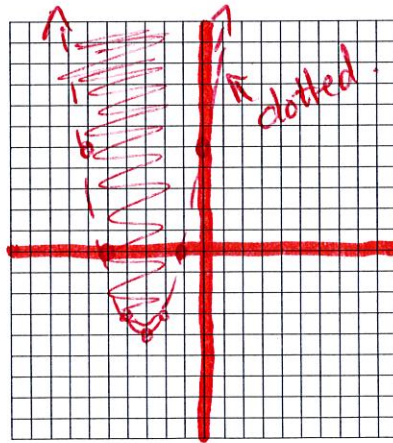
6.  $y = 7 - 3x - x^2 \quad (-1.5, 9.25)$



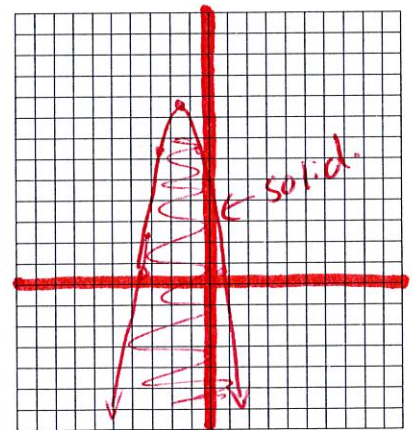
7.  $y = 2x^2 - 10x + 1 \quad (2.5, -11.5)$



8.  $y > x^2 + 6x + 5 \quad (-3, -4)$



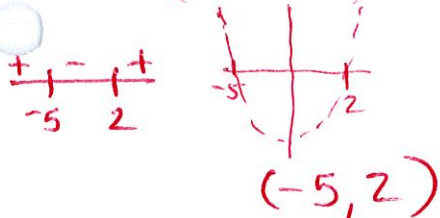
9.  $y \leq 4 - 6x - 2x^2 \quad (-1.5, 8.5)$



Solve each inequality and put in Interval Notation.

10.  $x^2 + 3x - 10 < 0$

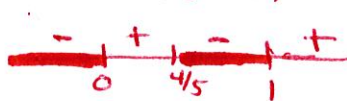
$(x+5)(x-2) < 0$



11.  $5x^3 - 9x^2 \leq -4x$

$5x^3 - 9x^2 + 4x \leq 0$

$x(5x-4)(x-1) \leq 0$



$(-\infty, 0] \cup [4/5, 1]$

12.  $(x+2)^2(x-1)(x-4) < 0$

$x = -2 \quad x = 1 \quad x = 4$



$(1, 4)$