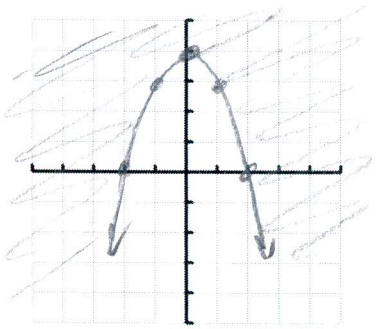
AC Math 1
Quadratic Inequalities WS

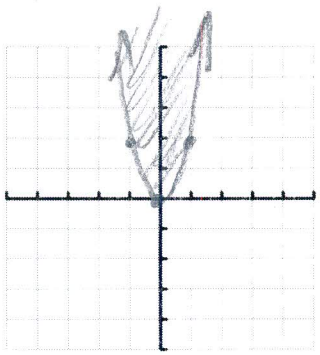
Name Answer Key

Graph each quadratic inequality.

1. $y \geq -x^2 + 4$



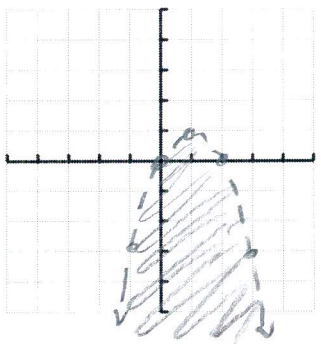
2. $y \geq 2x^2$



3. $y < -x^2 + 2x$

$x = \frac{-2}{-2} = 1$

(1,1)

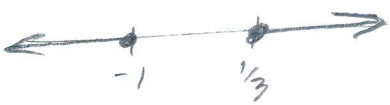


Graph each quadratic inequality algebraically (using a number line). State the solution set in interval notation.

4. $3x^2 + 2x - 1 \geq 0$

$(3x-1)(x+1) = 0$

$x = \frac{1}{3} \quad x = -1$



$(-\infty, -1] \cup [\frac{1}{3}, \infty)$

5. $0 \geq 2x^2 + x - 3$

$(2x+3)(x-1) = 0$

$x = -\frac{3}{2} \quad x = 1$

$[-\frac{3}{2}, 1]$

6. $0 \leq -x^2 + 2x + 8$

$x^2 - 2x - 8 = 0$

$(x-4)(x+2) = 0$

$x = 4 \quad x = -2$

$[-2, 4]$

7. $x^2 < 3x + 10$

$x^2 - 3x - 10 = 0$

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

$x = 5 \quad x = -2$

$(-2, 5)$

8. $2x^2 + 5x \leq 12$

$2x^2 + 5x - 12 = 0$

$(2x-3)(x+4) = 0$

$x = 3/2 \quad x = -4$

$[-4, \frac{3}{2}]$

9. $x^2 + 3x > 18$

$x^2 + 3x - 18 = 0$

$(x+6)(x-3) = 0$

$x = -6 \quad x = 3$

$(-\infty, -6) \cup (3, \infty)$