

Name \_\_\_\_\_

Date \_\_\_\_\_

Advanced Algebra

Unit 6: Advanced Systems

Assignment #1

For the following problems, make a graph of the parabola and the line give the appropriate x intervals to make the inequality true:

**You should quickly use the formula  $x = \frac{-b}{2a}$  to get the x coordinate of the vertex and then do VARS to get the y coordinate. Then graph the parabola.**

1)  $-x^2 - 4x - 1 < 3x + 11$

2)  $x^2 - 4x + 2 > 2x - 7$

3)  $-x^2 - 6x - 9 > 2x - 6$

4)  $-x^2 + 6x - 4 > 1x + 0$

5)  $x^2 - 12x + 32 > \frac{1}{2}x + \frac{1}{2}$

6)  $-x^2 + 6 > \frac{-1}{2}x + 2$

7)  $-x^2 - 8x - 13 > x + 5$

8)  $x^2 - 8x + 16 < -x + 6$

9)  $x^2 - 4x + 2 > 2x - 7$

Solve the following absolute Value Inequalities:

1)  $4|2x - 4| \leq 28$

2)  $|4x - 16| \geq 32$

3)  $\frac{3}{4}|x + 12| \geq 123$

4)  $\left| \frac{1}{4}x - 18 \right| \leq 215$

5)  $|4x - 16| \geq 552$

6)  $|x - 18| \geq 45$