U2D8 MCR3UI **Inequalities**

Warm Up Solve the following:

a) $3x^2 - 5x + 2 = 0$ **b)** $x^2 - 6x - 8 = 0$ Preamble Is 3 < 6 ?

What about -3 and -6?

Part A: Linear Inequalities

To solve a linear inequality, treat it like an equation but _____ the sign if you _____ or _____ by a _____.

Solve the following linear inequalities and graph your answers on the number line.

$2x - 1 > 5$ $-x - 5 \geq 0$ $2(x + 3) \leq x + 4$

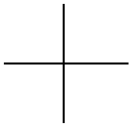
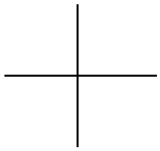
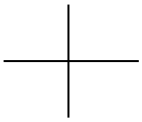
_____ _____ _____

Part B: Quadratic Inequalities

To solve quadratic inequalities, determine the _____ of the quadratic equation. Then sketch a graph using the zeroes and the _____ to determine for what ____-values the parabola is greater than or less than _____ (i.e. above or below the x-axis).

Solve the following quadratic inequalities by graphing.

a) $(x-3)(x+5) \leq 0$ b) $(2x-3)(x+7) \geq 0$ c) $-3(x+1)(x-5) < 0$

d) $5x^2 - 2x - 3 > 0$ e) $9k(k-8) \leq 0$ f) $9k(k-8) \geq 0$