Today's Plan:

Learning Target (standard): I will solve and graph non-linear inequalities.

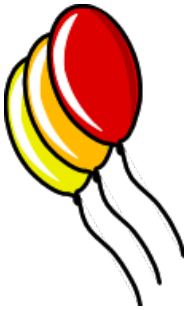
Students will: Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, take notes over new material and complete practice problems over new concepts.

Teacher will: Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide examples of new concepts and assign students assessment problems over new concepts.

Assessment: Board work, homework check and homework assignment

Differentiation: Students will work at the board, go over and correct homework at their seats, actively engage in lecture over new concepts, practice new concepts with the aid of other students and the teacher and complete homework assignment.

Go over your graphs at your tables.
Be sure to ask questions.



Non-Linear Inequalities:

- Polynomial Inequalities
  - solve by factoring and using a +/- factor chart
- Rational Inequalities
  - rewrite the inequality so that 0 appears on the right side of the inequality and one fraction is on the left then use a +/- factor chart

Solve and graph the solution set:

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

$x^2 - x - 2x + 2 \geq 0$

$x(x-1) - 2(x-1) \geq 0$

$(x-1)(x-2) \geq 0$

$x = 1, 2$ (+)

2

$-1 + -2 = -3$

		0		0	
$x-1$	−	0	+	+	+
$x-2$	−	−	0	+	

0 1 1½ 2 3

$\{x \mid x \leq 1, x \geq 2\}$

Solve and graph the solution set:

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

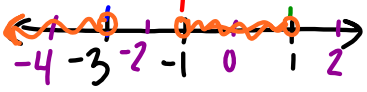
$x^2(x+3) - 1(x+3) < 0$

$(x+3)(x^2-1) < 0$

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

$x = -3, -1, 1$

$x+3$	−	0	+	+	+			
$x+1$	−		−	0	+	+		
$x-1$	−		−		−	0	+	



$\{x \mid x < -3, -1 < x < 1\}$

Assignment:

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