November 14th

Due Today: HW 4.1
Due Next Class: HW 4.2

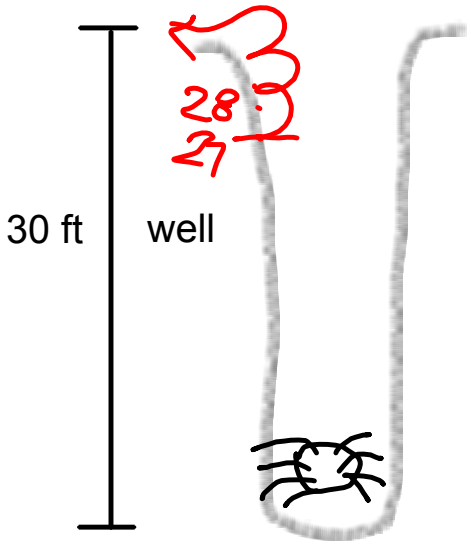
Unit 4: Inequalities
Lesson 4.2: Solving 1 Variable Inequalities

Get Ready:

5 min: Do the mini half-sheet on your desk. We will collect it.

Brain Teaser:

Lesson 4.2 Modeling with Inequalities.



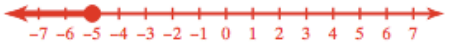
A spider falls down a 30 ft well. Each day she climbs up 3 feet, gets tired, and falls back 2 feet then sleeps until the next morning. How many days does it take her to climb out of the well?

28 days

Be able to justify your answer! (the answer is not as obvious as it first seems).

Draw a graph for each inequality. Make your own number line with at least 4 labeled points.

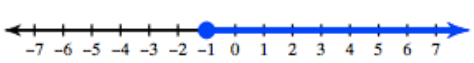
1) $x \leq -5$



2) $p > -3$

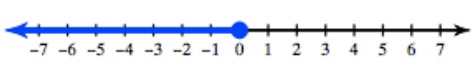
Write an inequality for each graph.

3)



$a \geq -1$

4)



$r \leq 0$

5) $2x + 5 < 10$

$x < \frac{5}{2}$ or 2.5

6) $\frac{x}{3} - 2 < 0$ $x < 6$

7) $3p + 1 < 4p - 6$

$p > 7$

8) $\frac{2n+1}{5} < 5$ $n < 12$

9) How many solutions are there to the inequality $x < 3$?

infinite

10) Which of the following #s are in the solutions set for the inequality statement "n is at least 10 but not more than 13?". Circle those that are in the solution set.

0, 1, 2, 3, 10, -10, 25/2, 12.9, -12.9, 13, 13.1, 13.111, 15, 97, 1056, 10/3

(Stuck? For each # ask yourself: does this # make the statement "n is at least 10 but not more than 13" true? You should notice patterns that will allow you to eliminate many at a time).

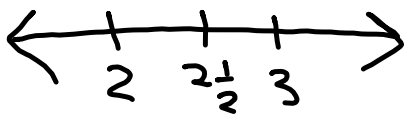
5) $2x + 5 < 10$

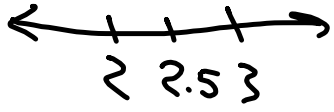
$-5 \quad -5$

$\frac{2x}{2} < \frac{5}{2}$

$x < \frac{5}{2}$

$x < 2.5$





Solving Inequalities

Same rules as for equations:

Goal: get the single variable by itself on one side

You can move a term from one side to the other & combine like terms

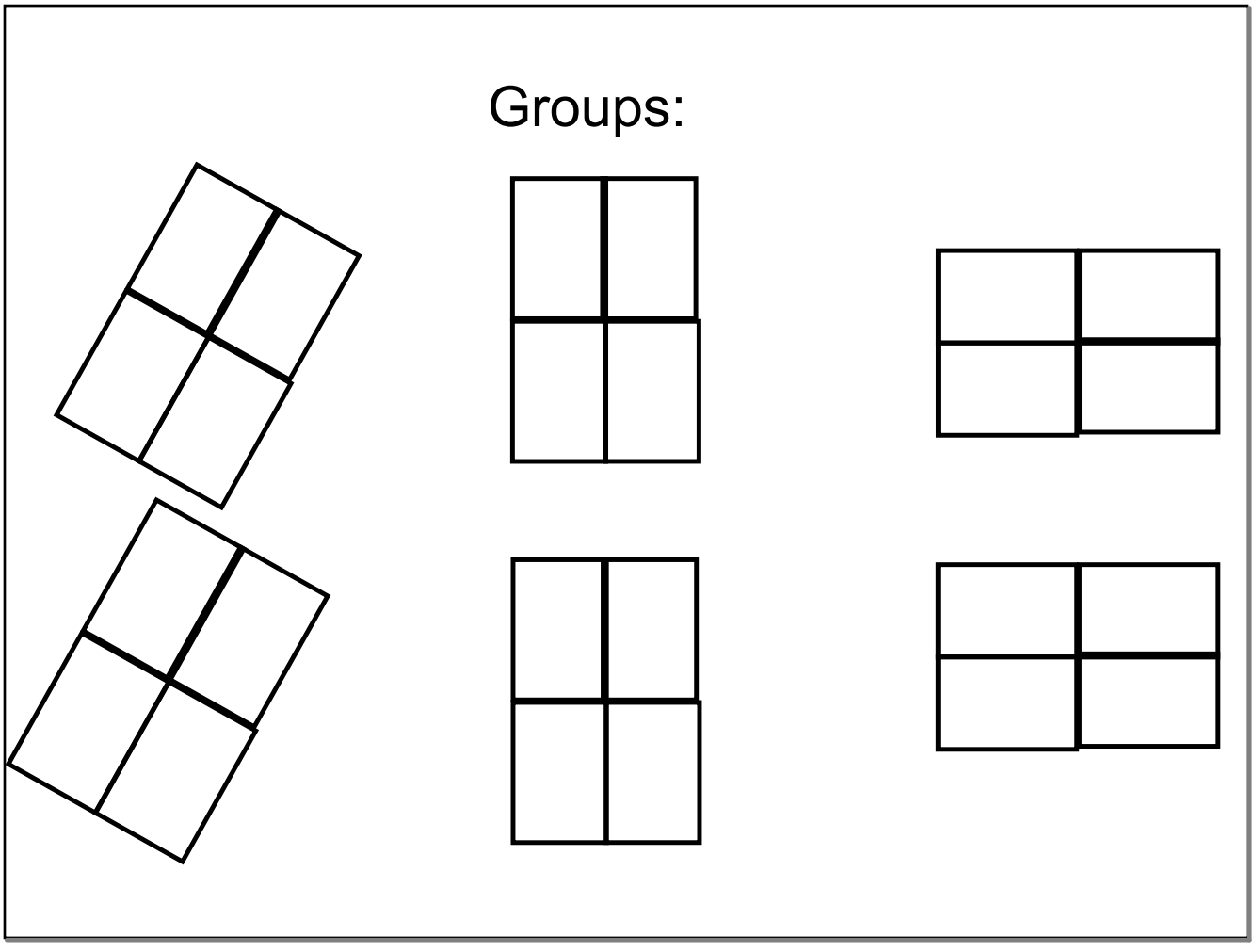
You can add or subtract the same number to both sides

You can multiply or divide both sides by the same number**

BUT remember:

**When you divide or multiply both sides by a negative number you must reverse the direction of the inequality symbol!

Groups:



Instructions:

Work your way through today's worksheets, be a resource to your table-mates while letting each person work through the problems on his or her own to ensure understanding.

Finished early?

Design your own Inequality modeling problem:

- think of a situation, from your life or imaginary
- write out the problem.
- model it and solve it.
- write your answer out as a sentence.

* you can work with a partner if you'd like*

November 14, 2014

Topic: 4.2 Solving Inequalities

Due Next Time: HW 4.2 + worksheet finish it!