HW review - 6.3

(26) $9.5j - 6 + 5.5j \geq 3(5j + -2)$

$9.5j - 6 + 5.5j \geq 15j + -6$

$15j + -6 \geq 15j + -6$

$+6 \quad +6$

all real numbers

$15j \geq 15j$

$-15j \quad -15j$

$0 \geq 0$

(14) $8 + \frac{-4}{5}f > -14 + -2f$

$-2 + \frac{4}{5}$

$\frac{5}{5}$

$\frac{-10}{5} + \frac{4}{5} = \frac{-6}{5}$

$+\frac{14}{5}f \qquad +\frac{4}{5}f$

$8 > -14 + \frac{-6}{5}f$

$+14 \qquad +14$

$\frac{-5}{6} \cdot 22 > -\frac{6}{5}f \cdot \frac{-5}{6}$

$-\frac{110}{6} < f$

$-\frac{55}{3} < f$

(38) $46 = supply cost

$8.50 = price per ornament

y = profit

x = # of ornaments

Profit will be total amount we get from our sales − cost

$$y = 8.5x - 46$$

$$8.5x - 46 > 0$$

$$+46 \quad +46$$

$$\frac{8.5x}{8.5} > \frac{46}{8.5}$$

$$x > 6$$

5.41

Compound inequalities:

Two (or more) inequalities joined by "and" or "or":

$x \geq 13$ and $x \leq 19$

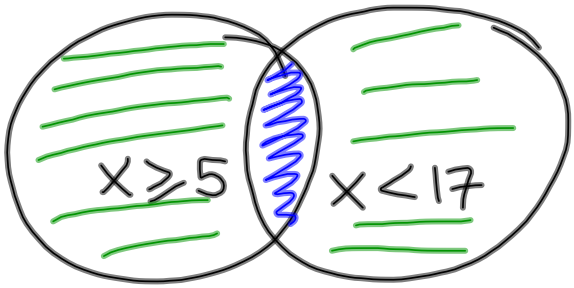
$y > 10$ ft or $y < 1$ ft

$20 \leq x < 30$ (and)

$n > 20$ and $n < 3$ no solution

$z < 5$ or $z < 2$ redundant

Venn Diagram:

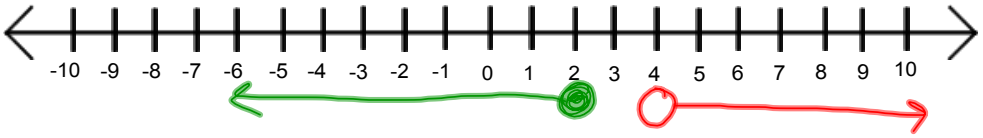


$x \geq 5$ and $x < 17$

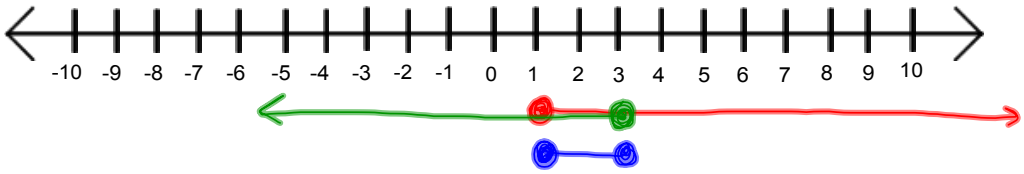
$x \geq 5$ or $x < 17$

Graph on a number line:

$x > 4$ or $x <= 2$



$x >= 1$ and $x <= 3$



Write in mathematical terms:

"All #'s less than 3 or greater than or equal to 7"

$x < 3$ or $x \geq 7$

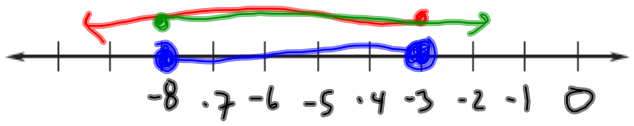
"#'s less than or equal to -2 and greater than -6"

$x \leq -2$ and $x > -6$

Translate the verbal phrase into an inequality. Then graph the inequality.

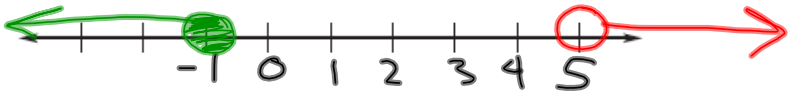
1. All real numbers that are less than or equal to -3 *and* greater than or equal to -8

$x \leq -3$ and $x \geq -8$



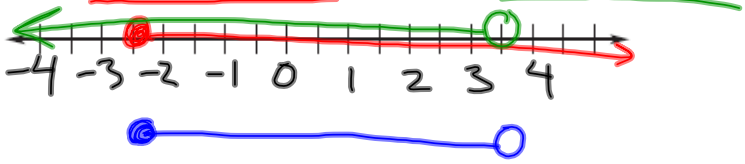
2. All real numbers that are greater than 5 *or* less than or equal to -1

$x > 5$ or $x \leq -1$



3. All real numbers that are greater than or equal to -2.5 *and* less than 3.5

$x \geq -2.5$ and $x < 3.5$



Graphing inequalities...

$x < -3$ $x \geq 6$

Solving compound inequalities:

$2 < x + 5 < 9$

$-5 \quad -5 \quad -5$

$-3 < x < 4$

$-3 < x$ and $x < 4$

$x > -3$

"and"

$3 < 2x + 7 \leq 11$

$-7 \quad -7 \quad -7$

$\frac{-4}{2} < \frac{2x}{2} \leq \frac{4}{2}$

$-2 < x \leq 2$

$-2 < x$ and $x \leq 2$

$x > -2$

$2x+3<9$ or $3x-6>12$

$-3 \quad -3$ $+6 \quad +6$

$\frac{2x}{2} < \frac{6}{2}$ $\frac{3x}{3} > \frac{18}{3}$

$x<3$ or $x>6$

"or"

12. $2x - 1 > 3$ *or* $3x + 5 \geq -4$

13. $2x + 4 \geq 3$ *and* $x + 4 > 9$

16. $2(x + 1) < 0$ *or* $3x - 5 > 4$

17. $3x + 10 > -8$ *and* $-4x + 10 > 2$

Quiz tomorrow over inequalities
(open note - your own notes only!)

Homework:

p. 384 4-26 (even), 27, 38, 44
(include number line graphs if indicated)