Today's Plan:

Learning Target (standard): I will solve combined inequalities. I will write their solutions as sets and intervals. I will graph the solutions on a number line.

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.

NAME _____ #82

BELL RINGER "Slope"

1.) Do x and y show a positive, negative, or no correlation?

x	-2	-1	0	1	2	3
y	5	4	2	1	0	-3

0:00:00

2.) Write the next three terms of the geometric sequence.

81, 27, 9, 3, ...

÷3 ÷3 ÷3

$r = \frac{1}{3}$

$1, \frac{1}{3}, \frac{1}{9}$

3.) Solve $3(x - 1) = 3x - 3$.

$3x - 3 = 3x - 3$

$-3 = -3$ identity

Solve. Write the solution as a set and an interval.

$6x+5<-1$ **or** $1-2x<7$

"union"

① $6x<-6$ $x<-1$ | $-2x<6$ $x>-3$

② 

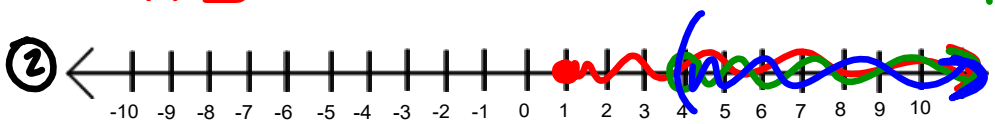
③ $\mathbb{R}$ ④ $(-\infty,\infty)$

Solve. Write the solution as a set and an interval.

$2x+3\geq 5$ **and** $3x-1>11$

"intersection"

① $2x\geq 2$ $x\geq 1$ | $3x>12$ $x>4$

② 

③ $\{x \mid x>4\}$

④ $(4,\infty)$

Solve. Write the solution as a set and interval.

$-2-4x \geq 10$ **or** $3x-3>6$

① $-4x \geq 12$ "union" $3x > 9$

$x \leq -3$ $x > 3$

②

③ $\{x \mid x \leq -3, x > 3\}$

④ $(-\infty, -3] \cup (3, \infty)$

Solve. Write the solution as a set and an interval.

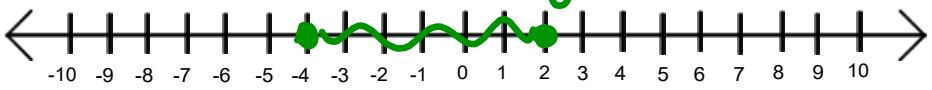
① $-6 \leq 5x+14 \leq 24$

-14 -14 -14

$-20 \leq 5x \leq 10$

$-4 \leq x \leq 2$ "shading"

②



③ $\{x \mid -4 \leq x \leq 2\}$

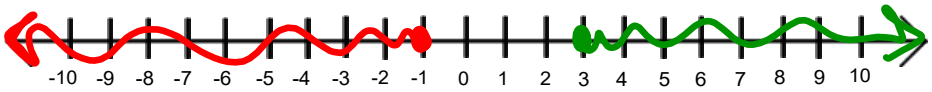
④ $[-4, 2]$

Solve. Write the solution as a set and interval.

$$7-3q \geq 10 \quad \text{and} \quad 3q-7 \geq 2$$

① $-3q \geq 3$ "intersection" $3q \geq 9$

$q \leq -1$ $q \geq 3$

② 

③ $\emptyset$

④ —

Solve. Write the solution as a set interval.

$$6-2(x-4) \leq 2x+10$$

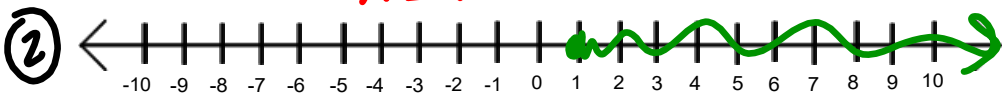
① $6-2x+8 \leq 2x+10$

$-2x+14 \leq 2x+10$

$-4x+14 \leq 10$

$-4x \leq -4$

$x \geq 1$

② 

③ $\{x \mid x \geq 1\}$

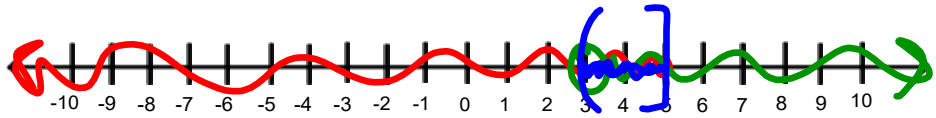
④ $[1, \infty)$

Solve. Write the solution as a set and interval.

$-2-4x \geq -22$ **and** $3x-3>6$

① $-4x \geq -20$ "intersection" $3x > 9$

$x \leq 5$ $x > 3$

② 

③ $\{x \mid 3 < x \leq 5\}$

④ $(3,5]$

Assignment:

Combined Inequalities 2

#1-12

- Solve
- Set notation
- Graph
- Interval notation