Welcome to class!

1. Put your homework on your desk
2. Solve $\frac{8}{5-1} \times (3+6) \times 3$
3. Solve and graph $9|3n-2|+6>51$

Homework Check

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Announcements

- Test corrections due Wednesday
- Unit 3 Test will be on Friday, October 12th

Return graded items

Today we will take a mid-unit quiz

Will cover:

- Solving multi-step inequalities
- Compound inequalities

Should take < 15 minutes

Sets and Set Notation

10/8/2018

Just like English and other languages have grammar and proper ways to write and say things, so does math.

Today we will talk about sets and set notation. Think about it as the grammatically correct way to write answers.

So first of all, what is a set?

Well, it’s really just a group of stuff. It could be people, items, numbers.

Most of the time in math, we deal with sets of numbers.

There are three ways to write sets.

1. Roster Form - list the elements of a set in braces
   a. Example: {1, 2, 3…}
   b. (You cannot write an inequality in roster form - why not?)

There are three ways to write sets.

2. Set-Builder Notation - describes the properties an element must have to be included in a set. It is written using braces and defining a variable with a line

Example: $\{x \mid x < -4\}$

There are three ways to write sets.

3. Interval Notation - uses brackets, parenthesis, and the infinity symbol to write a set

Brackets mean the number is included (closed circle!)

Parenthesis mean the number is not included

Infinity means the set continues in a certain direction - Infinity will always have a () with it (open circle!)

Example: $(-\infty, -4]$

Example: $(4, +\infty)$

So let's break that down

Roster form → lists all of the numbers inside of braces

Example: {1, 2, 3…}

Set builder notation → defines a variable and then sets a rule for that variable

Example: {x | x < - 4} (read that as x, such that x is less than -4)

Interval notation → says that the variable is everything between two numbers

Example: (-∞, -4]

Example: (4, +∞)

So let's break that down - ONE WORD

Roster form $\longrightarrow$

Example: {1, 2, 3…}

Set builder notation $\longrightarrow$

Example: $\{x \mid x < -4\}$ (read that as x, such that x is less than -4)

Interval notation $\longrightarrow$

Example: $(-\infty, -4]$

Example: $(4, +\infty)$

Can we determine which notation each set is currently written in?
Can we write these sets in different notations?

$\{\ldots -2, -1, 0, 1, 2, \ldots\}$

$[3, +\infty)$

$\{x \mid x>5\}$

Classwork/Homework

Complete the worksheet!

Designed to give you practice with EVERYTHING we have learned in this unit AND give you practice with the three notations!