Tuesday, October 15, 2019 7:37 AM

Active Vocabulary

Review Vocabulary Write a word description for each inequality symbol and write a true mathematical sentence using the symbol. *(Prerequisite Skill)*

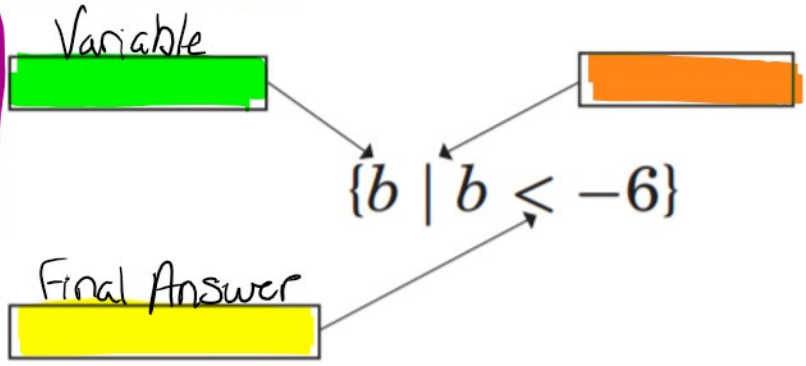
1. > greater than $x > 3$
2. < less than $x < 3$
3. ≥ greater or equal $x \geq 3$
4. ≤ less or equal $x \leq 3$

New Vocabulary Label the parts of the *set builder notation* below using the phrases given at the left. Show the set on the number line.

such that

all numbers b

b is less than −6



Main Idea

One-Step Inequalities

$6x + 12 = 8x - 8$

* x on one side
* Values on the other

Details

Identify the reason for each step in solving the inequality. Graph the solution set on a number line.

$6x + 12 < 8x - 8$ given

$6x + 12 - 12 < 8x - 8 - 12$ eliminated the number from one side

$6x < 8x - 20$ Combined like terms

$6x - 8x < 8x - 8x - 20$ eliminated the variable from one

$6x - 8x \leq 8x - 8x - 20$ eliminated the variable from one side

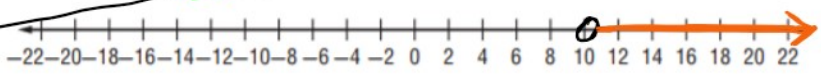
$-2x < -20$ Combined like terms

See builder Notation

$\frac{-2x}{-2} \leq \frac{-20}{-2}$ eliminate the Coefficient

$x \geq 10$ Combined like terms

$\{x \mid x > 10\}$



< or > ○ open point

≤ or ≥ ● closed Point

Multi-Step Inequalities

Describe the similarities and differences between solving an equation and solving an inequality.

Similarities	Differences
- Steps are the same	- Signs are different "=" or inequality sign - = only one solution - inequality have many Solutions (<, >, ≤, ≥)

$7 \cdot (m + 3) \geq 49$ Pemdas $-3(x-5) < 9$

option 1

$m + 3 \geq 7$

$-3 \quad -3$

$m \geq 4$

option 2

$7m + 21 \geq 49$

$-21 \quad -21$

$\frac{7m}{7} \geq \frac{28}{7}$

$m \geq 4$