

Addition and **Subtraction** Properties of Inequalities

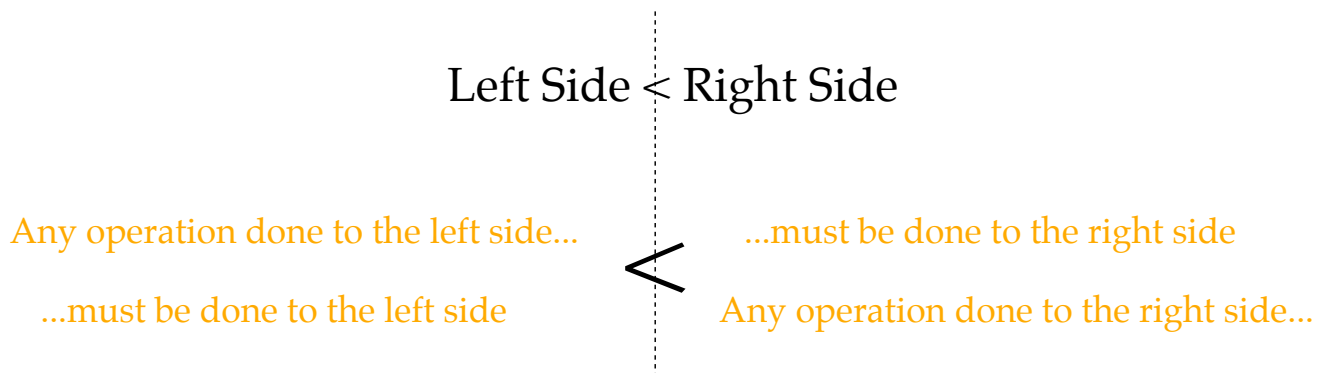
We can **add** and **subtract** the same value from both sides of the inequality and the inequality is still a true statement.

Multiplication and **Division** Properties of Inequalities

We can **multiply** and **divide** by the same positive value on both sides of the inequality and the inequality is still a true statement (keep the same sign).

****If we ever **multiply** or **divide** by a negative number, we must flip the inequality sign.****

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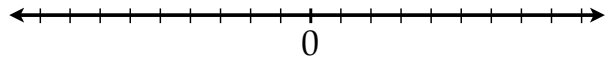
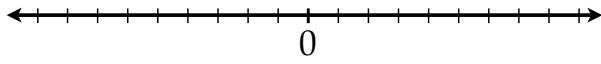


Always “undo” **addition**/**subtraction** before **multiplication**/**division**

****If we ever multiply or divide by a negative number, we must flip the inequality sign.****
Solve and graph the following inequalities.

$$2x + 3x - 8 < 12$$

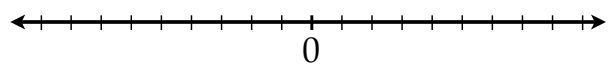
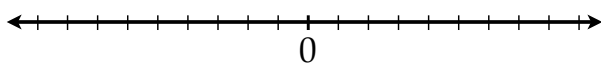
$$6x + 7 - 8x \leq 15$$



****If we ever multiply or divide by a negative number, we must flip the inequality sign.****
Solve and graph the following inequalities.

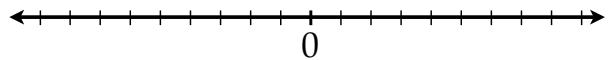
$$2(x - 3) > -4$$

$$x - 4(x - 3) \geq 18$$



****If we ever multiply or divide by a negative number, we must flip the inequality sign.****
Solve and graph the following inequalities.

$$2x - 3(x - 1) \geq 6 + 2(x + 3)$$



Addition and **Subtraction** Properties of Inequalities

Multiplication and **Division** Properties of Inequalities

****If we ever multiply or divide by a negative number, we must flip the inequality sign.****

Any operation done to the left side...

...must be done to the left side



...must be done to the right side

Any operation done to the right side...

Always “undo” **addition**/**subtraction** before **multiplication**/**division**