

Algebra 2: Unit 0

Lesson 7 - Solving Linear Inequalities Day

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- Solving simple linear inequalities.
- Graphing inequality solutions on a number line

Review of Inequality signs:

Name the following symbols...

$<$
Less
than

$>$
greater
than

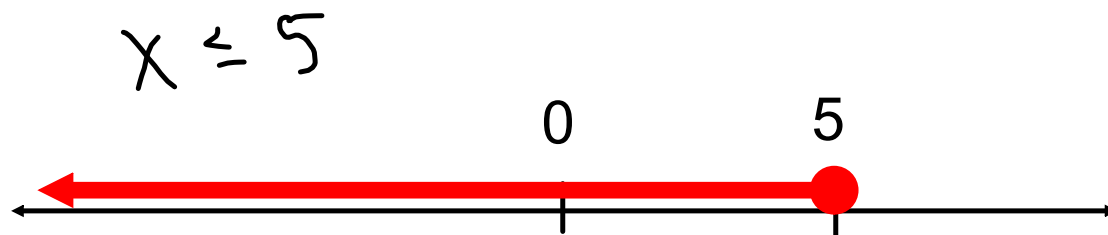
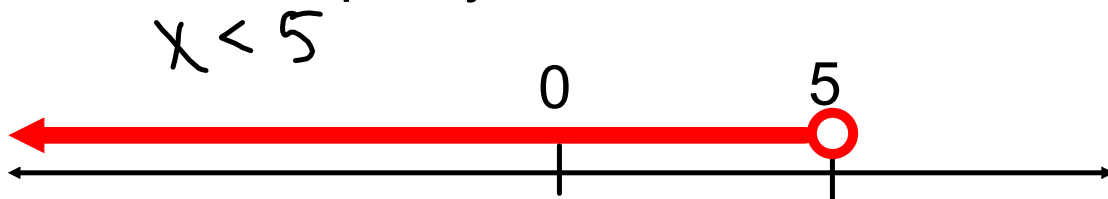
\geq
greater
than or
Equal to

\leq
less than
or equal
to

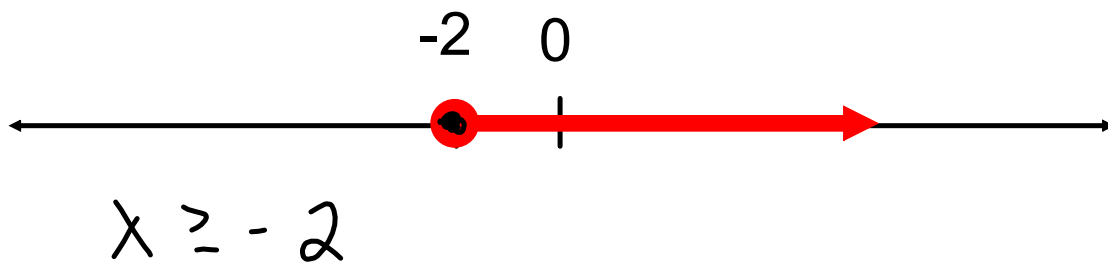
These are read from left to right, for example... $x > 7$ is read as "x is greater than 7"

Graphed solutions:

Write an inequality to match the solutions.

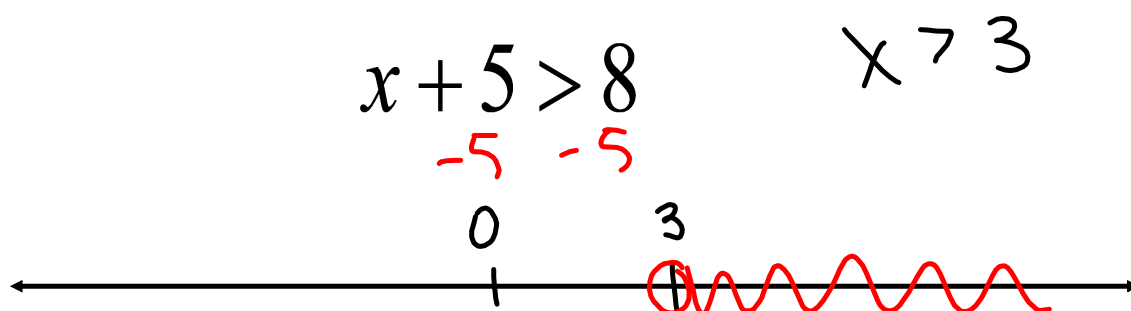


Now you try. Write an inequality to match the solution below.



Solving Basic Inequalities

Method: Treat the inequality like an = sign.
After you solve, graph the solution on a
number line.

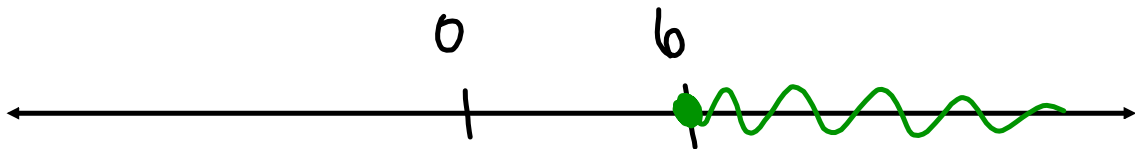


Every time you Multiply/Divide both sides by a Negative number, flip the sign.

$$\text{Ex: } -6x + 7 \leq -29 \quad x \geq 6$$

-7 -7

$$\frac{-6x}{-6} \leq \frac{-36}{-6}$$



More complex inequalities...

This time you need to combine like terms (x's and numbers) before you can solve.

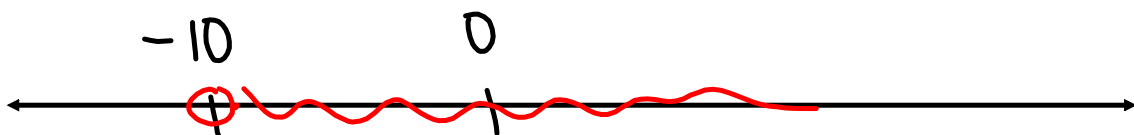
$$\cancel{-x} - 9 < 2\cancel{x} + 1$$

$$-9 < x + 1$$

$$\therefore -10 \leq x$$

$$x > -10$$

Same thing



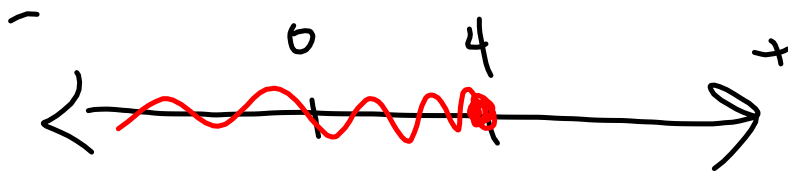
Example: $2(3x - 5) \leq x + 10$

$$6x - 10 \leq \cancel{x} + 10$$

$$5x - 10 \leq 10$$

$$\frac{5x}{5} \leq \frac{20}{5}$$

$$x \leq 4$$



End of Lesson 7.