Algebra 1 5.2 Solve inequalities

Solve inequalities by multiplication and division Write and solve inequalities

opposite trichotomy

These examples demonstrate the **Multiplication Property of Inequalities**.

✓ KeyConcept Multiplication Multiplicat	ion Property of Inequalities	
Words	Symbols	Examples
If both side of an inequality that is true are multiplied by a positive number, the resulting inequality is also true.	For any real numbers a and b and any positive real number c , if $a > b$, then $ac > bc$. And, if $a < b$, then $ac < bc$.	6 > 3.5 6(2) > 3.5(2) 12 > 7 and 2.1 < 5 2.1(0.5) < 5(0.5) 1.05 < 2.5
If both sides of an inequality that is true are multiplied by a negative number, the direction of the inequality sign is reversed to make the resulting inequality also true.	For any real numbers a and b and any negative real number c , if $a > b$, then $ac < bc$. And, if $a < b$, then $c > bc$.	7 > 4.5 $7(-3) < 4.5(-3)$ $-21 < -13.5$ and $3.1 < 5.2$ $3.1(-4) > 5.2(-4)$ $-12.4 > -20.8$

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Example 2 Solve by Multiplying

Solve $-\frac{3}{7}r < 21$. Graph the solution on a number line.

r number

Example 3 Divide to Solve an Inequality

Solve each inequality. Graph the solution on a number line.

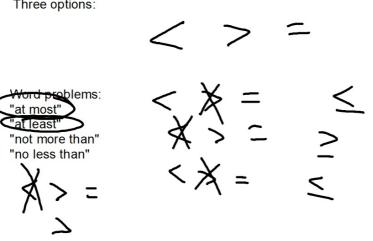
$$a. \frac{60t}{60} > 8$$

$$t > \frac{2}{15}$$





Three options:



×>=

Three times a number is at least 108.

The opposite of four times a number is less than 16.

$$-4n < 16$$

Negative 3 times a number is at most 99.