6.7 Solving Inequalities: Multiply & Divide

Dec 8/14

Note Title 12/8/2014

We will follow the same strategies to solve an inequality as we do for solving an equation.

However, when we multiply or divide by a negative number we must reverse the inequality sign.

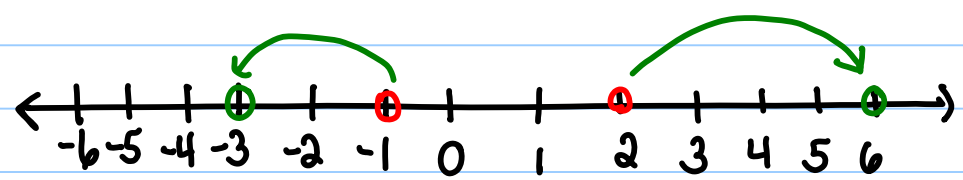
Let's see why. Consider the inequality.

$-1 < 2$

Multiply each side by 3.

$3 \times -1 < 2 \times 3$

$-3 < 6$



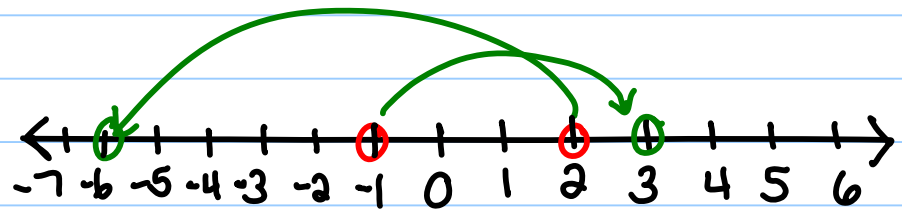
The inequality is still true.

$-1 < 2$

Multiply each side by -3.

$-3 \times -1 < 2 \times -3$

$3 < -6$



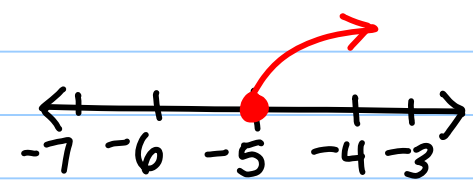
The inequality is no longer true.

To make the inequality true, we must reverse the inequality sign.

$3 > -6$

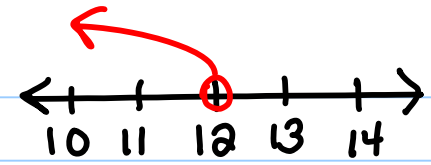
Examples: Solve and graph:

1) $\frac{-5s}{-5} \leq \frac{25}{-5}$ $\quad s \geq -5$



2) $\frac{y}{-4}(-4) > -3(-4)$

$y < 12$

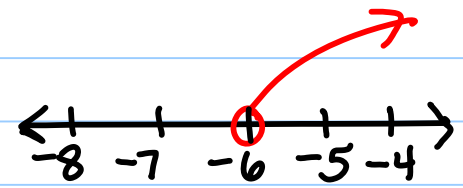


3) $3x < 5x + 12$

$-5x \quad -5x$

$\frac{-2x}{-2} < \frac{12}{-2}$

$x > -6$

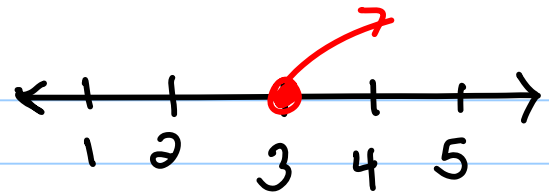


4) $3y + 8 \geq 17$

$\quad\;\; -8 \quad -8$

$\frac{3y}{3} \geq \frac{9}{3}$

$y \geq 3$



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6.6/6.7 worksheet.