4.6 Solving Inequalities Using Multiplication or Division

Solving an Inequality Using Multiplication

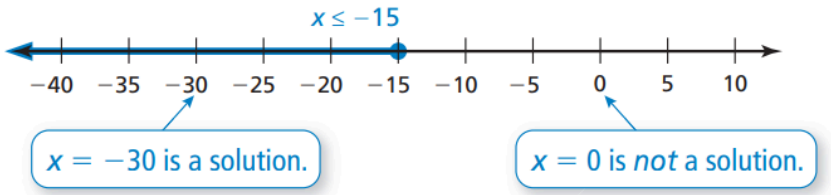
Solve $\frac{x}{5} \leq -3$. Graph the solution.

$\frac{x}{5} \leq -3$ — Write the inequality.

Undo the division. → $5 \cdot \frac{x}{5} \leq 5 \cdot (-3)$ — Multiplication Property of Inequality

$x \leq -15$ — Simplify.

The solution is $x \leq -15$.



$x = -30$ is a solution.

$x = 0$ is *not* a solution.

Try these for practice!

1. $\frac{n}{3} < 1$

2. $-0.5 \leq \frac{m}{10}$

3. $-3 > \frac{2}{3}p$

Solving an Inequality Using Division

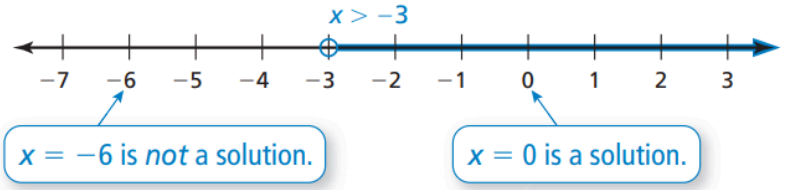
Solve $6x > -18$. Graph the solution.

$6x > -18$ — Write the inequality.

Undo the multiplication. → $\frac{6x}{6} > \frac{-18}{6}$ — Division Property of Inequality

$x > -3$ — Simplify.

The solution is $x > -3$.



Try these for practice!

4. $4b \geq 2$

5. $12k \leq -24$

6. $-15 < 2.5x$