

Solving One-Step Equations – Multiplication & Division

- Remember: The **GOAL** of solving equations: to get the variable (x) by itself.

State the INVERSE OPERATIONS

- o Add 23 subtract 23
- o Subtract 18 + 18
- o Multiply by -15 ÷ (-15)
- o Divide by 8 ~~÷ (8)~~ • 8

Example 1: Solve $8x = 56$.

Solution:

$$\begin{array}{r} 8x = 56 \\ \div 8 \quad \div 8 \\ \hline \end{array}$$

OR

$$\begin{array}{r} 8x = 56 \\ \boxed{8} \quad \boxed{8} \\ \hline x = \underline{7} \end{array}$$

Where is the variable?

What is done to it?

How can I undo that?

Apply to both sides.

Solve/Simplify

Example 2: Solve $\frac{a}{5} = 12$

Solution:

$$\frac{a}{5} = 12$$

$$\boxed{5} \cdot \frac{a}{5} = 12 \cdot \boxed{5}$$

$$a = \underline{60}$$

$$\begin{array}{r} a \div 5 = 12 \\ \times 5 \quad \times 5 \\ \hline a = 60 \end{array}$$

Check:

$$8x = 56$$

$$8(\underline{7}) \stackrel{?}{=} 56$$

$$\underline{56} = 56 \checkmark$$

Write original equation.

Substitute for variable.

Is it true?

Check:

$$\frac{a}{5} = 12$$

$$\frac{(60)}{5} = 12$$

$$\underline{12} = 12 \checkmark$$