

Solving Multiplication and Division Equations

To solve an equation, make the two sides of the equation equal with the variable alone on one side. You can use inverse operations and properties of equality.

Remember: **Inverse operations** “undo” each other. **Properties of Equality** say that you can multiply or divide both sides of an equation by the same number and the two sides of the equation remain equal.

Use division to “undo” multiplication.

Use multiplication to “undo” division.

With numbers:

$$3 \times 6 = 18$$

$$3 \times 6 \div 6 = 18 \div 6$$

$$3 = 3$$

With numbers:

$$24 \div 2 = 12$$

$$24 \div 2 \times 2 = 12 \times 2$$

$$24 = 24$$

In algebra:

$$m \times 9 = 54$$

$$m \times 9 \div 9 = 54 \div 9$$

$$m = 6$$

In algebra:

$$p \div 8 = 7$$

$$p \div 8 \times 8 = 7 \times 8$$

$$p = 56$$

For **1** through **3**, name the inverse operation you will use to get the variable alone on one side of the equation. In **2** and **3**, also fill in the blanks.

1. $5p = 50$

$$5p \div 5 = 50 \div 5$$

2. $n \div 16 = 4$

$$n \div 16 \times 16 = 4 \times \underline{\quad}$$

3. $15 = r \times 3$

$$15 \div \underline{\quad} = r \times 3 \div \underline{\quad}$$

For **4** through **6** solve the equation.

4. $w \div 5 = 8$

5. $20y = 100$

6. $3 = s \div 10$

7. Writing to Explain Jason solved the equation $r \div 14 = 19$. He got 266. Is his answer correct? Explain how you know.
