

Solving Multiplication and Division Equations

Example 1 Find the value of y in the following equation.

$$y \times 5 = 40$$

Since y is multiplied by 5 to equal 40, use the opposite operation to find the value of y .

Divide each side of the equation by 5.

$$\begin{aligned} y \times 5 \div \boxed{5} &= 40 \div \boxed{5} \\ \times 5 \div 5 &\text{ cancel each other} \\ &\text{out.} \\ y &= 40 \div 5 \\ y &= 8 \end{aligned}$$

Example 2 Henry had b pairs of socks and separated them into 3 separate drawers. He put 4 pairs of socks into each drawer. How many pairs of socks did Henry have?

You can write an equation for this problem.

$$\begin{aligned} b \div 3 &= 4 \\ \text{(total pairs)} \quad &\text{(drawers)} \quad \text{(pairs per drawer)} \end{aligned}$$

Since b is divided by 3 to equal 4, use the opposite operation to find the value of b .

Multiply each side of the equation by 3.

$$\begin{aligned} b \div 3 \times \boxed{3} &= 4 \times \boxed{3} \\ \div 3 \times 3 &\text{ cancel each other out.} \\ b &= 4 \times 3 \\ b &= 12 \end{aligned}$$

Find the value of the variables in the following problems.

1. $j \div 9 = 2$ _____

2. $u \times 6 = 18$ _____

3. $p \times 5 = 25$ _____

4. $c \div 7 = 4$ _____

5. **Number Sense** What numbers belong in the blanks in the following equation? What is the value of a ?

$$a \div 6 \times \underline{\quad} = 5 \times \underline{\quad}$$