Lesson 6-2 Multiplication and Division Equations

$5 + \boxed{-5} = 0$

$-3 + \boxed{3} = 0$

$3(5) = 15$

$\frac{15}{5} = 3$

$y + 2 = -6$

$-2 \quad -2$

$y = -8$

$-8 + 2 = -6$

$-6 = -6$

COEFFICIENT

$\frac{2x}{2} = \frac{-10}{2}$

$x = -5$

$2(-5) = -10$

$-10 = -10$ ✓

$\frac{5}{1} \cdot \frac{x}{5} = 4 \cdot 5$

$x = 20$

$\frac{20}{5} = 4$

$4 = 4$ ✓

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Lesson 6-2 Multiplication and Division Equations

Use the Division Property of Equality to solve multiplication equations and the Multiplication Property of Equality to solve division equations.

The **Division Property of Equality** states that if you divide each side of an equation by the same nonzero number, the two sides remain equal.

The **Multiplication Property of Equality** states that if you multiply each side of an equation by the same number, the two sides remain equal.

Example 1

Solve $30 = 6x$.

$30 = 6x$	Write the equation.
$\frac{30}{6} = \frac{6x}{6}$	Divide each side of the equation by 6.
$5 = x$	$30 \div 6 = 5$.

The solution is 5.

Example 2

Solve $\frac{x}{-5} = -2$.

$\frac{x}{-5} = -2$	Write the equation.
$\frac{x}{-5}(-5) = -2(-5)$	Multiply each side of the equation by -5.
$x = 10$	$-2(-5) = 10$.

The solution is 10.

Exercises

Solve each equation. Check your solution.

1. $3x = 12$

2. $9k = -360$

5. $\frac{x}{5} = 12$

8. $-7y = 42$

9. $\frac{m}{6} = -4$

10. $-2 = \frac{b}{-9}$

Lesson 2 Skills Practice

Multiplication and Division Equations

Solve each equation. Check your solution.

1. $7a = 56$

2. $-5b = -20$

5. $\frac{k}{12} = 2$

6. $\frac{m}{6} = -10$

9. $-15 = \frac{z}{-8}$

10. $-3z = 93$

13. $-8 = \frac{t}{9}$

14. $3c = 15$

17. $18 = -9b$

18. $-13c = -52$