

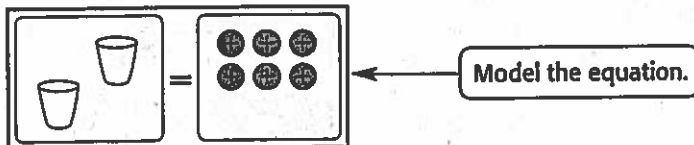
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Study Guide and Intervention

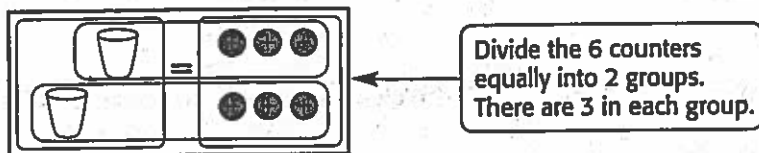
Solving Multiplication Equations

In a multiplication equation, the number by which a variable is multiplied is called the **coefficient**. In the multiplication equation, $2x = 8$, the coefficient is 2.

EXAMPLE 1 Solve $2x = 6$ using models.



$$2x = 6$$



$$\frac{2x}{2} = \frac{6}{2}$$

$$x = 3$$

Check $2x = 6$ Write the original equation.
 $2(3) \stackrel{?}{=} 6$ Replace x with 3.
 $6 = 6$ This sentence is true. ✓

The solution is 3.

EXAMPLE 2 Solve $-4b = 12$.

$-4b = 12$ Write the equation.
 $\frac{-4b}{-4} = \frac{12}{-4}$ Divide each side by -4 to get a single positive variable by itself.
 $1b = -3$ Simplify.
 $b = -3$

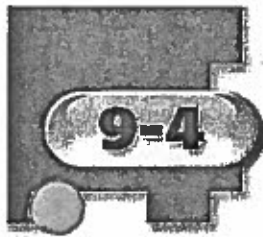
Check $-4b = 12$ Write the original equation.
 $-4(-3) \stackrel{?}{=} 12$ Replace b with -3 .
 $12 = 12$ This sentence is true. ✓

The solution is -3 .

EXERCISES

Solve each equation. Use models if necessary. Check your solution.

- | | | |
|----------------|----------------|----------------|
| 1. $5a = 25$ | 2. $7c = 49$ | 3. $24 = 6d$ |
| 4. $2x = -8$ | 5. $18 = -9y$ | 6. $-8g = -16$ |
| 7. $18 = -3z$ | 8. $-4w = -36$ | 9. $56 = 7v$ |
| 10. $24 = -8f$ | 11. $3u = -27$ | 12. $-42 = 6t$ |

**Practice: Word Problems****Solving Multiplication Equations**

<p>1. BAND SOLO Kai's solo in the next school band performance is 4 times as long as Dena's solo. Kai's solo is 12 minutes long. Write and solve an equation to find the length of Dena's solo.</p>	<p>2. CATS Steve's tabby cat eats 5 times as often as his black cat. The tabby cat ate 10 times yesterday. Write and solve an equation to find how many times the black cat ate.</p>
<p>3. FOOTBALL In last night's football game, the home team earned 3 times as many points as the visiting team. They won the game with 21 points. Write and solve an equation to find how many points the visiting team had.</p>	<p>4. MONEY Paz has 3 times as much money in her wallet as in her pocket. There is \$18 in her wallet. Write and solve an equation to find how much money is in her pocket.</p>
<p>5. MORNINGS It takes Jun 3 times as long as it takes Kendra to get ready in the morning. It takes Jun 45 minutes to get ready. Write and solve an equation to find how long it takes Kendra.</p>	<p>6. FISH In his home aquarium, Enli has 12 times as many guppies as he has goldfish. Enli just counted 72 guppies. Write and solve an equation to find how many goldfish he has.</p>
<p>7. MUSIC Ray's favorite song is 2 times longer than Meli's favorite song. Write and solve an equation to find the length of Meli's favorite song if Ray's lasts 6 minutes.</p>	<p>8. TRAILS The forest trail to Round Lake is 3 times longer than the rocky trail to Round Lake. The forest trail is 15 miles long. Write and solve an equation to find the length of the rocky trail.</p>