Guided Practice

Solve each equation. Check your solution. (Examples 1, 2, and 4)

1. $2a = 6$

Show your work.

$\frac{2}{2} = \frac{2}{2}$

$a = 3$

2. $20 = 4c$

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

$5 = c$

3. $9.4g = 28.2$

$\frac{9.4g}{9.4} = \frac{28.2}{9.4}$

$g = 3$

$\frac{282}{94} = 3$

4. The length of an object in feet is equal to 3 times its length in yards. The length of a waterslide is 48 feet. Write and solve a multiplication equation to find the length of the waterslide in yards. (Example 3)

$\ell = 16$

$\frac{3\ell}{3} = \frac{48}{3}$

5. The total time to burn a CD is 18 minutes. Last weekend, Demitri spent 90 minutes burning CDs. Write and solve a multiplication equation to find the number of CDs Demitri burned last weekend. Explain how you can check your solution. (Example 3)

$m = 5$

$\frac{18m}{18} = \frac{90}{18}$

$m = 5$

6. **Building on the Essential Question** How can the Division Property of Equality be used to solve multiplication equations? **Sample answer: It can be used to undo multiplication because division is the inverse of multiplication.**

Independent Practice

Go online for Step-by-Step Solutions eHelp

Solve each equation. Check your solution. (Examples 1, 2, and 4)

1. $4g = 24$ **6**

2. $5d = 30$ **6**

3. $36 = 6e$ **6**

Show your work.

4. $1.5x = 3$ **2**

$\frac{1.5}{1.5} \quad \frac{1.5}{1.5} \quad \times 10$

$x = \frac{3}{1.5} = \frac{30}{15}$

$\times 10$

$x = 2$

5. $2.5y = 5$ **2**

$\frac{2.5}{2.5} \quad \frac{2.5}{2.5} \quad \times 10$

$y = \frac{5}{2.5} = \frac{50}{25}$

$\times 10$

$y = 2$

6. $8.1 = 0.9a$ **9**

$\frac{.9}{.9} \quad \frac{.9}{.9}$

$\frac{8.1}{.9} = \frac{81}{9} = 9$

$a = 9$

$4x = 58$

7. A jewelry store is selling a set of 4 pairs of gemstone earrings for $58, including tax. Neva and three of her friends want to buy the set so each could have one pair of earrings. Write and solve a multiplication equation to find how much each person should pay. (Example 3)

$4e = 58$; $14.50

Solve each equation. Check your solution.

8. $39 = 1\frac{3}{10}b$ **30**

9. $\frac{1}{2}e = \frac{1}{4}$ **$\frac{1}{2}$**

10. $\frac{2}{5}g = \frac{3}{5}$ **$1\frac{1}{2}$**

11 CCSS **Use Math Tools** Use the table that shows football data.

a. George Blanda played in the NFL for 26 years. Write and solve an equation to find how many points he averaged each year.

$26p = 2{,}002$; 77 points

b. Norm Johnson played in the NFL for 16 years. Write and solve an equation to find how many points he averaged each year.

$16p = 1{,}736$; 108.5 points

Top NFL Kickers	
Player	**Career Points**
Gary Anderson	2,434
Morten Andersen	2,437
George Blanda	2,002
John Carney	1,749
Norm Johnson	1,736

12. STEM An average person's heart beats about 103,680 times a day. Write and solve an equation to find about how many times the average person's heart beats in one minute.

$1{,}440x = 103{,}680$; 72 beats

13. **Model with Mathematics** Problems involving constant speed can be solved by the formula distance = rate × time. Fernando's family traveled 272 miles on a road trip last weekend. They drove for 4 hours. What was the rate at which Fernando's family traveled? Write and solve a multiplication equation.

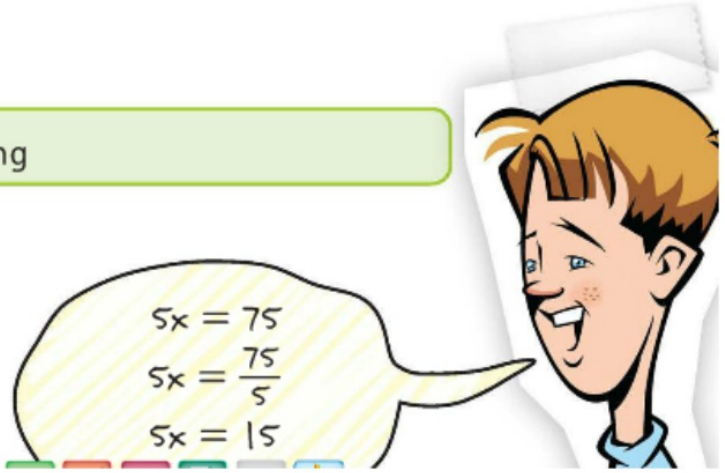
distance	=	rate	×	time
272 miles		r		4 hours

Fernando's family traveled an average rate of 68 miles per hour.

H.O.T. Problems Higher Order Thinking

14. **Find the Error** Noah is solving $5x = 75$. Find his mistake and correct it.

He did not divide each side by 5; $x = 15$.



15. **Which One Doesn't Belong?** Identify the equation that does not belong with the other three. Explain your reasoning.

$5x = 20$	$4b = 7$	$8w = 32$	$12y = 48$

$4b = 7$; The solution for the other equations is 4.

16. **Persevere with Problems** Explain how you know that the equations $\frac{1}{4} = 2x$ and $\frac{1}{4} \div x = 2$ have the same solution. Then, find the solution. **Sample answer: If you divide each side of the equation $\frac{1}{4} = 2x$ by x, you will have the equation $\frac{1}{4} \div x = 2$. Thus, the equations are equivalent, as long as $x \neq 0$. So, they have the same solution $\frac{1}{8}$. Replacing x with $\frac{1}{8}$ into each equation makes each equation true.**

17. **Model with Mathematics** Write a real-world problem that could be represented by the equation $4r = 240$. Then solve the equation and interpret the solution.

Sample answer: The Walkers traveled 240 miles in 4 hours. What was their average speed?; 60 miles per hour; The Walkers traveled an average of 60 miles per hour.