2-1 Reteaching

Solving One-Step Equations

You can use the properties of equality to solve equations. Subtraction is the inverse of addition.

Problem

What is the solution of $x + 5 = 33$?

In the equation, $x + 5 = 33$, 5 is added to the variable. To solve the equation, you need to isolate the variable, or get it alone on one side of the equal sign. Undo adding 5 by subtracting 5 from each side of the equation.

Drawing a diagram can help you write an equation to solve the problem.

Whole	
Part	Part

33	
x	5

Solve $x + 5 = 33$

$x + 5 - 5 = 33 - 5$ Undo adding 5 by subtracting 5.

$x = 28$ Simplify. This isolates x.

Check $x + 5 = 33$ Check your solution in the original equation.

$28 + 5 \stackrel{?}{=} 33$ Substitute 28 for x.

$33 = 33$ ✓

The solution to $x + 5 = 33$ is 28.

Division is the inverse of multiplication.

Problem

What is the solution of $\frac{x}{5} = 12$?

In the equation, $\frac{x}{5} = 12$, the variable is divided by 5. Undo dividing by 5 by multiplying by 5 on each side of the equation.

x				
12	12	12	12	12

Solve	$\frac{x}{5} = 12$	
	$\frac{x}{5}(5) = 12(5)$	Undo dividing by 5 by multiplying by 5.
	$x = 60$	Simplify. This isolates x.

The solution to $\frac{x}{5} = 12$ is 60.

2-1 Reteaching (continued)

Solving One-Step Equations

Exercises

Solve each equation using addition or subtraction. Check your answer.

1. $-3 = n + 9$ **2.** $f + 6 = -6$ **3.** $m + 12 = 22$

4. $r + 2 = 7$ **5.** $b + 1.1 = -11$ **6.** $t + 9 = 4$

Define a variable and write an equation for each situation. Then solve.

7. A student is taking a test. He has 37 questions left. If the test has 78 questions, how many questions has he finished?

8. A friend bought a bouquet of flowers. The bouquet had nine daisies and some roses. There were a total of 15 flowers in the bouquet. How many roses were in the bouquet?

Solve each equation using multiplication or division. Check your answer.

9. $\frac{z}{8} = 2$ **10.** $-26 = \frac{c}{3}$ **11.** $\frac{q}{11} = -6$

12. $-\frac{a}{3} = 18$ **13** $-25 = \frac{g}{5}$ **14.** $20.4 = \frac{s}{2.5}$

15. A student has been typing for 22 minutes and has typed a total of 1496 words. Write and solve an equation to determine the average number of words she can type per minute.

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2-2 Reteaching

Solving Two-Step Equations

Properties of equality and inverse operations can be used to solve equations that involve more than one step to solve. To solve a two-step equation, identify the operations and undo them using inverse operations. Undo the operations in the reverse order of the order of operations.

Problem

What is the solution of $5x - 8 = 32$?

$5x - 8 + 8 = 32 + 8$	To get the variable term alone on the left side, add 8 to each side.
$5x = 40$	Simplify.
$\frac{5x}{5} = \frac{40}{5}$	Divide each side by 5 since *x* is being multiplied by 5 on the left side. This isolates *x*.
$x = 8$	Simplify.
Check $5x - 8 = 32$	Check your solution in the original equation.
$5(8) - 8 = 32$	Substitute 8 for *x*.
$32 = 32$ ✓	Simplify.

To solve $-16 = \frac{x}{3} + 5$ you can use subtraction first to undo the addition, and then use multiplication to undo the division.

Problem

What is the solution of $-16 = \frac{x}{3} + 5$?

$-16 - 5 = \frac{x}{3} + 5 - 5$	To get the variable term alone on the right, subtract 5 from each side.
$-21 = \frac{x}{3}$	Simplify.
$3(-21) = 3\left(\frac{x}{3}\right)$	Since *x* is being divided by 3, multiply each side by 3 to undo the division. This isolates *x*.
$-63 = x$	Simplify.

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2-2 Reteaching (continued)

Solving Two-Step Equations

Solve each equation. Check your answer.

1. $4f - 8 = 20$

2. $25 - 6b = 55$

3. $-z + 7 = -8$

4. $\frac{w}{-9} + 7 = 10$

5. $25 = 8 + \frac{n}{2}$

6. $\frac{y - 8}{3} = -7$

Solve each equation. Justify each step.

7. $6d - 5 = 31$

8. $\frac{p - 7}{-2} = 5$

Define a variable and write an equation for each situation. Then solve.

9. Ray's birthday is 8 more than four times the number of days away from today than Jane's birthday. If Ray's birthday is 24 days from today, how many days until Jane's birthday?

10. Jerud weighs 15 pounds less than twice Kate's weight. How much does Kate weigh if Jerud weighs 205 pounds?

11. A phone company charges a flat fee of \$17 per month, which includes free local calling plus \$0.08 per minute for long distance calls. The Taylor's phone bill for the month is \$31.80. How many minutes of long distance calling did they use during the month?

12. A delivery company charges a flat rate of \$3 for a large envelope plus an additional \$0.25 per ounce for every ounce over a pound the package weighs. The postage for the package is \$5.50. How much does the package weigh? (Hint: remember the first pound is included in the \$3.)

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2-3 Reteaching

Solving Multi-Step Equations

To solve multi-step equations, use properties of equality, inverse operations, the Distributive Property, and properties of real numbers to isolate the variable. Like terms on either side of the equation should be combined first.

Problem

a) What is the solution of $-3y + 8 + 13y = -52$?

$-3y + 13y + 8 = -52$	Group the terms with *y* together so that the like terms are grouped together.
$10y + 8 = -52$	Add the coefficients to combine like terms.
$10y + 8 - 8 = -52 - 8$	To get the variable term by itself on the left side, subtract 8 from each side.
$10y = -60$	Simplify.
$\frac{10y}{10} = \frac{-60}{10}$	Divide each side by 10 since *y* is being multiplied by 10 on the left side. This isolates *y*.
$y = -6$	Simplify.

b) What is the solution of $-2(3n - 4) = -10$?

$26n + 8 = -10$	Distribute the –2 into the parentheses by multiplying each term inside by –2.
$-6n + 8 - 8 = -10 - 8$	To get the variable term by itself on the left side, subtract 8 from each side.
$-6n = -18$	Simplify.
$\frac{-6n}{-6} = \frac{-18}{-6}$	Divide each side by –6 since *n* is being multiplied by –6 on the left side. This isolates *n*.
$n = 3$	Simplify.

Solve each equation. Check your answer.

1. $4 - 6h - 8h = 60$

2. $-32 = -7n - 12 + 3n$

3. $14 + 12 = -15x + 2x$

4. $8(-3d + 2) = 88$

5. $-22 = -(x - 4)$

6. $35 = -5(2k + 5)$

7. $3m + 6 - 2m = -22$

8. $4(3r + 2) - 3r = -10$

9. $-18 = 15 - 3(6t + 5)$

10. $-5 + 2(10b - 2) = 31$

11. $7 = 5x + 3(x - 2) + 5$

12. $-18 = 3(-z + 6) + 2z$

13. Reasoning Solve the equation $14 = 7(2x - 4)$ using two different methods. Show your work. Which method do you prefer? Explain.

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2-3 Reteaching (continued)

Solving Multi-Step Equations

Equations with fractions can be solved by using a common denominator or by eliminating the fractions altogether.

Problem

What is the solution of $\frac{x}{4} - \frac{2}{3} = \frac{7}{12}$?

Method 1

Get a common denominator first.

Method 2

Multiply by the common denominator first.

Method 1	Method 2
$\frac{3}{3}\left(\frac{x}{4}\right) - \frac{4}{4}\left(\frac{2}{3}\right) = \frac{7}{12}$	$12\left(\frac{x}{4} - \frac{2}{3}\right) = 12\left(\frac{7}{12}\right)$
$\frac{3x}{12} - \frac{8}{12} = \frac{7}{12}$	${}^{3}\cancel{12}\left(\frac{x}{\cancel{4}}\right) - {}^{4}\cancel{12}\left(\frac{2}{\cancel{3}}\right) = \cancel{12}\left(\frac{7}{\cancel{12}}\right)$
$\frac{3x}{12} = \frac{15}{12}$	$3x - 8 = 7$
$\frac{3x}{12} \cdot = \frac{12}{3} = \frac{15}{12} \cdot \frac{12}{3}$	$3x = 15$
$x=5$	$x = 5$

Decimals can be cleared from the equation by multiplying by a power of ten with the same number of zeros as the number of digits to the right of the decimal. For instance, if the greatest number of digits after the decimal is 3, like 4.586, you multiply by 1000.

Problem

What is the solution of $2.8x - 4.25 = 5.55$?

$100(2.8x - 4.25 = 5.55)$	Multiply by 100 because the most number of digits after the decimal is two.
$280x - 425 = 555$	Simplify by moving the decimal point to the right 2 places in each term.
$280x = 980$	Add 425 to each side to get the term with the variable by itself on the left side.
$x = 3.5$	Divide each side by 280 to isolate the variable.

Solve each equation. Check your answer.

14. $\frac{x}{16} - \frac{1}{2} = \frac{3}{8}$ **15.** $\frac{2a}{3} + \frac{8}{9} = 4$ **16** $\frac{3n}{7} - 1 = \frac{1}{8}$

17. $-1.68j + 1.24 = 13$ **18.** $4.6 = 3.5w - 6.6$ **19.** $5.23y + 3.02 = -2.21$

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2-4 Reteaching

Solving Equations With Variables on Both Sides

To solve equations with variables on both sides, you can use the properties of equality and inverse operations to write a series of simpler equivalent equations.

Problem

What is the solution of $2m - 4 + 5m = 13 - 6m - 4$?

$7m - 4 = -6m + 9$	Add the terms with variables together on the left side and the constants on the right side to combine like terms.
$7m - 4 + 6m = -6m + 9 + 6m$	To move the variables to the left side, add $6m$ to each side.
$13m - 4 = 9$	Simplify.
$13m - 4 + 4 = 9 + 4$	To get the variable term alone on the left, add 4 to each side.
$13m = 13$	Simplify.
$\frac{13m}{13} = \frac{13}{13}$	Divide each side by 13 since x is being multiplied by 13 on the left side. This isolates x.
$m = 1$	Simplify.

Problem

What is the solution of $3(5x - 2) = -3(x + 6)$?

$15x - 6 = -3x - 18$	Distribute 3 on the left side and −3 on the right side into the parentheses by multiplying them by each term inside.
$15x - 6 + 6 = -3x - 18 + 6$	To move all of the terms without a variable to the right side, add 6 to each side.
$15x = -3x - 12$	Simplify.
$15x + 3x = -3x - 12 + 3x$	To get the variable terms to the left side, add $3x$ to each side.
$18x = -12$	Simplify.
$\frac{18x}{18} = -\frac{12}{18}$	Divide each side by 18 since x is being multiplied by 18 on the left side. This isolates x.
$x = -\frac{2}{3}$	Simplify and reduce the fraction.

Solve each equation. Check your answer.

1. $-5x + 9 = -3x + 1$ **2.** $14 + 7n = 14n + 28$ **3.** $22(g - 1) = 2g + 8$

4. $-d + 12 - 3d = 5d - 6$ **5.** $4(m - 2) = -2(3m + 3)$ **6.** $-(4y - 8) = 2(y + 4)$

7. $5a - 2(4a + 5) = 7a$ **8.** $11w + 2(3w - 1) = 15w$ **9.** $4(3 - 5p) = -5(3p + 3)$

2-4 Reteaching (continued)

Solving Equations With Variables on Both Sides

An equation that is true for every value of the variable for which the equation is defined is an identity. For example, $x - 5 = x - 5$ is an identity because the equation is true for any value of x. An equation has no solution if there is no value of the variable that makes the equation true. The equation $x + 6 = x + 3$ has no solution.

Problem

What is the solution of each equation?

a) $3(4x - 2) = -2(-6x + 3)$

$12x - 6 = 12x - 6$ — Distribute 3 on the left side and –2 on the right side into the parentheses by multiplying them by each term inside.

$12x - 6 - 12x = 12x - 6 - 12x$ — To get the variable terms to the left side, subtract 12*x* from each side.

$-6 = -6$ — Simplify.

Because $-6 = -6$ is always true, there are infinitely many solutions of the original equation. The equation is an identity.

b) $2n + 4(n - 2) = 8 + 6n$

$2n + 4n - 8 = 8 + 6n$ — Distribute 4 into the parentheses by multiplying it by each term inside.

$6n - 8 = 8 + 6n$ — Add the variable terms on the left side to combine like terms.

$6n - 8 - 6n = 8 + 6n - 6n$ — To get the variable terms to the left side, subtract 6*n* from each side.

$-8 = 8$ — Simplify.

Since $-8 \neq 8$, the equation has no solution.

Determine whether each equation is an *identity* or whether it has *no solution*.

10. $-3(2x + 1) = 2(-3x - 1)$　**11.** $4(-3x + 4) = -2(6x - 8)$　**12.** $3n + 3(-n + 3) = 3$

Solve each equation. If the equation is an identity, write *identity*. If it has no solution, write *no solution*.

13. $-(4n + 2) = -2(2n - 1)$　**14.** $2(-d + 4) = 2d + 8$　**15.** $-k - 18 = -5 - k - 13$

16. Open-Ended Write three equations with variables on both sides of the equal sign with one having no solution, one having exactly one solution, and one being an identity.

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2-5 Reteaching

Literal Equations and Formulas

A literal equation is an equation that involves two or more variables. When you work with literal equations, you can use the methods you have learned in this chapter to isolate any particular variable. To solve for specific values of a variable, simply substitute the values into your equation and simplify.

Problem

What is the solution of $4x - 5y = 3$ for y? What is the value of y when $x = 10$?

$4x - 5y - 4x = 3 - 4x$	To get the *y*-term by itself on the left side, subtract 4*x* from each side.
$-5y = -4x + 3$	Simplify.
$\frac{-5y}{-5} = \frac{-4x+3}{-5}$	Divide each side by -5 since *y* is being multiplied by -5 on the left side. This isolates *y*.
$y = \frac{4}{5}x - \frac{3}{5}$	Simplify by dividing each term by -5. Notice, this changes the sign of each term.
$y = \frac{4}{5}(10) - \frac{3}{5}$	To find the value of y when $x = 10$, substitute 10 in for *x*.
$y = 7\frac{2}{5}$	Simplify by multiplying first, then subtracting.

When you rewrite literal equations, you may have to divide by a variable or variable expression. When you do so in this lesson, assume that the variable or variable expression is not equal to zero because division by zero is not defined.

Problem

Solve the equation $ab - bc = cd$ for b.

$b(a - c) = cd$	Since *b* is a factor of each term on the left side, it can be factored out using the Distributive Property.
$\frac{b(a-c)}{a-c} = \frac{cd}{a-c}$	To get b by itself, divide each side by *a* – *c* since *b* is being multiplied by *a* – *c*. Remember $a - c \neq 0$.
$b = \frac{cd}{a-c}$	Simplify.

Solve each equation for *y*. Then find the value of *y* for each value of *x*.

1. $y + 5x = 2; -1, 0, 1$

2. $6x = 2y - 4; 1, 2, 4$

3. $6x - 3y = -9; -2, 0, 2$

4. $4y = 5x - 8; -2, -1, 0$

5. $3y + 2x = -5; 0, 2, 3$

6. $5x = 8y - 6; -1, 0, 1$

7. $3(y - 2) + x = 1; -1, 0, 1$

8. $\frac{x+2}{y-3} = 1; -1, 0, 1$

9. $\frac{y+4}{x-5} = -3; -2, 2, 4$

2-5 Reteaching (continued)

Literal Equations and Formulas

A formula is an equation that states a relationship among quantities. Formulas are special types of literal equations. Some common formulas are shown below. Notice that some of the formulas use the same variables, but the definitions of the variables are different. For instance, r is the radius in the area and circumference of a circle and the rate in the distance formula.

Formula Name	**Formula**
Perimeter of a rectangle	$P = 2l + 2w$
Circumference of a circle	$C = 2\pi r$
Area of a rectangle	$A = lw$
Area of a triangle	$A = \frac{1}{2}bh$
Area of a circle	$A = \pi r^2$
Distance traveled	$d = rt$

Each of the formulas can be solved for any of the other unknowns in the equation to produce a new formula. For example, $r = \frac{C}{2\pi}$ is a formula for the radius of a circle in terms of its circumference.

Problem

What is the length of a rectangle with width 24 cm and area 624 cm^2?

$A = lw$	Formula for the area of a rectangle.
$\frac{A}{w} = \frac{lw}{w}$	Since you are trying to get *l* by itself, divide each side by *w*.
$l = \frac{A}{w}$	Simplify.
$l = \frac{624}{24}$	Substitute 624 for *A* and 24 for *w*.
$l = 26$ cm	Simplify.

Solve each problem. Round to the nearest tenth, if necessary. Use 3.14 for π.

10. A triangle has base 6 cm and area 42 cm^2. What is the height of the triangle?

11. What is the radius of a circle with circumference 56 in.?

12. A rectangle has perimeter 80 m and length 27 m. What is the width?

13. What is the length of a rectangle with area 402 ft^2 and width 12 ft?

14. What is the radius of a circle with circumference 27 in.?

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2-7 Reteaching

Solving Proportions

A proportion is an equation that states that two ratios are equal. If a quantity in a proportion is unknown, you can solve a proportion to find the unknown quantity as shown below.

Problem

What is the solution of $\frac{3}{4} = \frac{x}{14}$?

There are two methods for solving proportions—using the Multiplication Property of Equality and the Cross Products Property.

1) The Multiplication Property of Equality says that you can multiply both sides of an equation by the same number without changing the value.

$$\frac{3}{4} = \frac{x}{14}$$

$14\left(\frac{3}{4}\right) = \left(\frac{x}{14}\right)14$	To isolate x, multiply each side by 14.
$\frac{42}{4} = x$	Simplify.
$10.5 = x$	Divide 42 by 4.

2) The Cross Products Property says that you can multiply diagonally across the proportion and these products are equal.

$$\frac{3}{4} = \frac{x}{14}$$

$(4)(x) = (3)(14)$	Multiply diagonally across the proportion.
$4x = 42$	Multiply.
$\frac{4x}{4} = \frac{42}{4}$	To isolate x, divide each side by 4.
$x = 10.5$	Simplify.

Real world situations can be modeled using proportions.

Problem

A bakery can make 6 dozen donuts every 21 minutes. How many donuts can the bakery make in 2 hours?

A proportion can be used to answer this question. It is key for you to set up the proportion with matching units in both numerators and both denominators.

For this problem, you know that 2 hours is 120 minutes and 6 dozen is 72 donuts.

<u>Correct:</u>

$$\frac{72 \text{ donuts}}{21 \text{ min}} = \frac{x \text{ donuts}}{120 \text{ min}}$$

<u>Incorrect:</u>

$$\frac{72 \text{ donuts}}{21 \text{ min}} = \frac{120 \text{ min}}{x \text{ donuts}}$$

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2-7 Reteaching (continued)

Solving Proportions

This proportion can be solved using the Multiplication Property of Equality or the Cross Products Property.

Problem

Solve this proportion using the cross products.

$$\frac{72\ \text{donuts}}{21\ \text{min}} = \frac{x\ \text{donuts}}{120\ \text{min}}$$

$21x = (72)(120)$	Cross Products Property
$21x = 8640$	Multiply.
$\frac{21x}{21} = \frac{8640}{21}$	Divide each side by 21.
$x = 411.43$	Simplify.

Since you cannot make 0.43 donuts, the correct answer is 411 donuts.

Exercises

Solve each proportion using the Multiplication Property of Equality.

1. $\frac{3}{4} = \frac{n}{7}$ **2.** $\frac{1}{3} = \frac{t}{10}$ **3.** $\frac{n}{5} = \frac{8}{20}$

4. $\frac{z}{6} = \frac{9}{8}$ **5.** $\frac{15}{5} = \frac{a}{11}$ **6.** $\frac{7}{2} = \frac{d}{8}$

Solve each proportion using the Cross Products Property.

7. $\frac{3}{5} = \frac{b}{8}$ **8.** $\frac{12}{m} = \frac{8}{3}$ **9.** $\frac{z}{2} = \frac{9}{6}$

10. $\frac{14}{v} = \frac{7}{3}$ **11.** $\frac{-4}{-9} = \frac{f}{-12}$ **12.** $\frac{13}{h} = \frac{2}{-6}$

13. A cookie recipe calls for a half cup of chocolate chips per 3 dozen cookies. How many cups of chocolate chips should be used for 10 dozen cookies?

Solve each proportion using any method.

14. $\frac{x-3}{-2} = \frac{4}{5}$ **15.** $\frac{12}{10} = \frac{y+6}{13}$ **16.** $\frac{5}{x-3} = \frac{2}{-6}$

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Extra Practice

Chapter 2

Lessons 2-1 to 2-4

Solve each equation.

1. $8p - 3 = 13$

2. $8j - 5 + j = 67$

3. $-n + 8.5 = 14.2$

4. $6(t + 5) = -36$

5. $m - 9 = 11$

6. $\frac{1}{2}(s + 5) = 7.5$

7. $7h + 2h - 3 = 15$

8. $\frac{7}{12}x = \frac{3}{14}$

9. $3r - 8 = -32$

10. $8g - 10g = 4$

11. $-3(5 - t) = 18$

12. $3(c - 4) = -9$

Define a variable and write an equation for each situation. Then solve.

13. Your test scores for the semester are 87, 84, and 85. Can you raise your test average to 90 with your next test?

14. You spend $\frac{1}{2}$ of your allowance each week on school lunches. Each lunch costs $1.25. How much is your weekly allowance?

Solve each equation. If the equation is an identity, write *identity*. If it has no solution, write *no solution*.

15. $4h + 5 = 9h$

16. $2(3x - 6) = 3(2x - 4)$

17. $7t = 80 + 9t$

18. $m + 3m = 4$

19. $-b + 4b = 8b - b$

20. $6p + 1 = 3(2p + 1)$

21. $10z - 5 + 3z = 8 - z$

22. $3(g - 1) + 7 = 3g + 4$

23. $17 - 20q = (-13 - 5q)4$

Write an equation to model each situation. Then solve.

24. A DVD club charges a monthly membership fee of $4.95 and $11.95 for each DVD purchased. If a customer's bill for the month was $64.70, how many DVDs did the customer purchase?

25. A lawyer charges $100 per month to be put on retainer for a client. The lawyer also charges an hourly rate of $75 for work done. How many hours does the lawyer have to work for a client, in one month, to charge $625?

26. A rectangular pool is twice as long as it is wide. What are the dimensions of the pool if the perimeter is 42 yd?

27. Two friends rent an apartment together. They agree that one person will pay 1.5 times what the other person pays. If the rent is $850, how much will each friend pay?

28. A shopper's discount club charges a monthly fee of $15 and sells gasoline for $2.05 per gallon. The gas station across the street sells gasoline for $2.35 per gallon and charges no fee. How many gallons of gasoline would you have to buy in one month to spend the same amount at either store?

Extra Practice (continued)

Chapter 2

29. Michael and Kevin are running. Kevin gets a 3-mile head start and runs at a rate of 5.5 mi/h. Michael runs at a rate of 7 mi/h. How many hours will it take Michael to catch up with Kevin?

Lesson 2-5

Solve each equation for *y*. Then find the value of *y* for each value of *x*.

30. $y + 3x = 8$; $x = -2, 0, 2$

31. $4x - 2y = 15$; $x = 2, 4, 6$

32. $x = 9 - 3y$; $x = -3, 6, 12$

Solve each equation for *x*.

33. $px + qx = r$

34. $c = b - bx$

35. $\frac{x-3}{y} = x$

Solve each problem. Round to the nearest tenth, if necessary. Use 3.14 for *π*.

36. What is the radius of a circle with a circumference of 15 cm?

37. What is the height of a triangle that has a base of 8 in. and an area of 28 in.^{2} ?

38. How long does it take to travel 150 miles at a rate of 60 mi/h?

Lesson 2-7

Solve each proportion.

48. $\frac{3}{4} = \frac{-6}{m}$

49. $\frac{t}{7} = \frac{3}{21}$

50. $\frac{9}{j} = \frac{3}{16}$

51. $\frac{2}{5} = \frac{w}{65}$

52. $\frac{s}{15} = \frac{4}{45}$

53. $\frac{9}{4} = \frac{x}{10}$

54. $\frac{10}{q} = \frac{8}{62}$

55. $\frac{3}{2} = \frac{18}{y}$

56. $\frac{x-3}{15} = \frac{2}{5}$

57. $\frac{y+8}{6} = \frac{y}{2}$

58. $\frac{5-a}{8} = \frac{4}{7}$

59. $\frac{9}{b-4} = \frac{12}{5}$

60. If 3 pizzas serve 12 people, how many pizzas are needed for a pizza party with 68 people?

61. You are planting a vegetable garden with 10 rows. If it took 24 minutes to plant the first 3 rows, how long will it take to plant all 10 rows of the garden?

62. Approximately 8 out of every 25 families in the United States own dogs. If you asked 90 families, about how many of them would you expect to own dogs?