

In This Chapter, You Have Learned

- To recognize an equation and its solution
- To solve equations mentally
- To solve and check equations of the form $x + a = b$
- To solve and check equations of the form $x - a = b$
- To solve and check equations of the form $ax = b$
- To solve and check equations of the form $\frac{x}{a} = b$
- To recognize that a formula is a type of equation
- To solve equations containing fractions and mixed numbers

Words You Know

From the lists of "Words to Learn," choose the word or phrase that best completes each statement.

1. A sentence that contains an equal sign is a(n) _____.
2. An equation that contains a variable is called a(n) _____.
3. A number times its _____ equals 1.
4. A(n) _____ is an expression that states that two _____ are equal.
5. A value of a variable that makes an open sentence true is a(n) _____.

More Practice

* State whether each equation is *true*, *false*, or *open*.

6. $14 = \frac{4}{5}y$ _____
7. $6 + 8 \div 2 = 7$ _____
8. $8 - (7 - 6) = 7$ _____
9. $3\frac{2}{3} + v = 5\frac{1}{6}$ _____

Which of the given values is the solution to each equation?

10. $\frac{n}{2} = 8$; 8, 10, 6, 4, 16 _____
11. $20 = x - 4$; 16, 24, 5, 80 _____

Solve each equation by using mental math. Then check.

12. $p \div 5 = 7$

13. $15 = x + 7$

Substitute the values of the variables into the formula. Then solve the equation for the remaining variable.

14. $d = rt; d = 448, t = 7$ _____

15. $A = lw; A = 8, w = \frac{4}{3}$ _____

16. $s = r - d; s = 18, d = 3.75$ _____

Name the operation you can use to solve each equation.

17. $5 + h = 12$ _____

18. $\frac{7}{8} = 4t$ _____

Give the multiplicative inverse of each number.

19. $\frac{3}{8}$ _____

20. 24 _____

Solve each equation.

21. $p - 25 = 35$

22. $\frac{8}{9}k = 136$

23. $5\frac{4}{5} = 1\frac{3}{10} + x$

Problems You Can Solve

24. John uses $1\frac{1}{2}$ cups of milk and 3 cups of flour for his favorite cookie recipe. This makes 5 dozen cookies. Write and solve two proportions to see how much milk and flour he would need to make half as many cookies.

25. **For Your Portfolio** For the next week, think about which of your activities could be described by an equation. Tripling the ingredients in a recipe would be one such activity. Finding your overtime income if you earn "time-and-a-half" for each hour worked overtime would be another. Write an equation for each activity. Exchange equations with a classmate. Then, solve each other's equations.
