

Grade 8 Word Problems: Writing and Solving Linear Equations

Word Problems • Grade 8 • CCSS 8.EE.7

Name: _____

Date: _____

Solve each equation and answer the question. Show the steps that isolate the variable.

-
1. A gym charges a \$25 sign-up fee plus \$15 per month. The equation $15m + 25 = 145$ gives the number of months m for a \$145 total. Solve for m .
 2. A taxi charges \$3.00 plus \$2.50 per mile. The equation $2.5x + 3 = 23$ models a \$23.00 fare. How many miles x was the ride?
 3. Two consecutive integers add to 47. The equation $x + (x + 1) = 47$ models this. What is the smaller integer x ?
 4. A number is decreased by 3, then the result is multiplied by 4 to give 20. Solve $4(x - 3) = 20$.
 5. Two phone plans cost the same at x minutes. Solve $5x + 8 = 3x + 20$ to find x .
 6. A rectangle is 3 cm longer than it is wide, and its perimeter is 26 cm. Solve $2(w + 3) + 2w = 26$ for the width w .
 7. Solve $2(x + 4) = 3x - 1$ to find the number x that makes both expressions equal.
 8. A number tripled and then decreased by 7 equals 26. Solve $3x - 7 = 26$.

9. Two trucks carry equal loads. Solve $6x - 4 = 2x + 16$ to find the load x in tons.
10. Plan A costs \$30 plus \$0.10 per minute; Plan B costs a flat \$50. Solve $0.1x + 30 = 50$ for the number of minutes x where the plans cost the same.
11. The temperature falls at a steady rate. Solve $-3x + 12 = 3$ to find the number of hours x .
12. Solve $7 - 2x = -5$ for x .
13. Two angles measuring x and $2x$ degrees are complementary, so they add to 90. Solve $x + 2x = 90$.
14. A tank holds 6 liters and is filled at half a liter per minute to reach 14 liters. Solve $0.5x + 6 = 14$ for the minutes x .

Answer Key

Grade 8 Word Problems: Writing and Solving Linear Equations — Grade 8

1. $m = 8$

2. $x = 8$

3. $x = 23$

4. $x = 8$

5. $x = 6$

6. $w = 5$

7. $x = 9$

8. $x = 11$

9. $x = 5$

10. $x = 200$

11. $x = 3$

12. $x = 6$

13. $x = 30$

14. $x = 16$