

1-3 Practice

Solving Equations

Write an algebraic expression to represent each verbal expression.

1. 2 more than the quotient of a number and 5

$$\frac{y}{5} + 2$$

3. 5 times the sum of a number and 1

$$5(m + 1)$$

2. the sum of two consecutive integers

$$n + (n + 1)$$

4. 1 less than twice the square of a number

$$2y^2 - 1$$

Write a verbal sentence to represent each equation.

5. $5 - 2x = 4$

The difference of 5 and twice a number is 4.

7. $3c = 2(c - 1)$

Three times a number is twice the difference of the number and 1.

Name the property illustrated by each statement.

9. If $t - 13 = 52$, then $52 = t - 13$.

Symmetric (=)

11. If $h + 12 = 22$, then $h = 10$.

Subtraction (=)

Solve each equation. Check your solution.

13. $14 = 8 - 6r$ **-1**

15. $\frac{3}{4} - \frac{1}{2}n = \frac{5}{8}$ **$\frac{1}{4}$**

17. $-1.6r + 5 = -7.8$ **8**

19. $5(6 - 4v) = v + 21$ **$\frac{3}{7}$**

5–8. Sample answers are given.

6. $3y = 4y^3$

Three times a number is 4 times the cube of the number.

8. $\frac{m}{5} = 3(2m + 1)$ The quotient of a number and 5 is 3 times the sum of twice the number and 1.

10. If $8(2q + 1) = 4$, then $2(2q + 1) = 1$.

Division (=)

12. If $4m = -15$, then $-12m = 45$.

Multiplication (=)

14. $9 + 4n = -59$ **-17**

16. $\frac{5}{6}c + \frac{3}{4} = \frac{11}{12}$ **$\frac{1}{5}$**

18. $6x - 5 = 7 - 9x$ **$\frac{4}{5}$**

20. $6y - 5 = -3(2y + 1)$ **$\frac{1}{6}$**

Solve each equation or formula for the specified variable.

21. $E = mc^2$, for m **$M = \frac{E}{c^2}$**

22. $c = \frac{2d + 1}{3}$, for d **$d = \frac{3c - 1}{2}$**

23. $h = vt - gt^2$, for v **$v = \frac{h + gt^2}{t}$**

24. $E = \frac{1}{2}Iw^2 + U$, for I **$I = \frac{2(E - U)}{w^2}$**

25. **GEOMETRY** The length of a rectangle is twice the width. Find the width if the perimeter is 60 centimeters. Define a variable, write an equation, and solve the problem.

$w = \text{width}; 2(2w) + 2w = 60; 10 \text{ cm}$

26. **GOLF** Luis and three friends went golfing. Two of the friends rented clubs for \$6 each. The total cost of the rented clubs and the green fees for each person was \$76. What was the cost of the green fees for each person? Define a variable, write an equation, and solve the problem. **$g = \text{green fees per person}; 6(2) + 4g = 76; \16**