

1 Chapter Review

Review Key Vocabulary

numerical expression, p. 4
algebraic expression, p. 4
evaluate, p. 4

equivalent expressions, p. 16
formula, p. 30
solve a formula, p. 30

Review Examples and Exercises

1.1 Evaluating Algebraic Expressions (pp. 2–7)

- a. Evaluate $a \div b$ when $a = 48$ and $b = 8$.

Substitute 48 for a .

$$a \div b = 48 \div 8$$

$$= 6$$

Substitute 8 for b .

Divide 48 by 8.

- b. Evaluate $2x + 21$ when $x = 6$.

$$\begin{aligned} 2x + 21 &= 2(6) + 21 \\ &= 12 + 21 \\ &= 33 \end{aligned}$$

Substitute 6 for x .

Using order of operations, multiply 2 and 6.

Add 12 and 21.

- c. Evaluate $y^2 - 14$ when $y = 5$.

$$\begin{aligned} y^2 - 14 &= (5)^2 - 14 \\ &= 25 - 14 \\ &= 11 \end{aligned}$$

Substitute 5 for y .

Using order of operations, evaluate 5^2 .

Subtract 14 from 25.

Exercises

Evaluate the expression when $x = 20$ and $y = 4$.

1. $x \div 5$

2. $36 \div y$

3. $5x$

4. $8 \cdot y$

5. $x - y$

6. $y + x$

7. $x \cdot y$

8. $\frac{x}{y}$

9. $8y - x$

10. **GAMING** In a video game, you score p game points and b triple bonus points. An expression for your score is $p + 3b$. What is your score when you earn 245 game points and 20 triple bonus points?

1.2 Writing Expressions (pp. 8–13)

Write the phrase as an expression.

- a. a number z decreased by 18

$$z - 18 \quad \text{The phrase "decreased by" means subtraction.}$$

- b. the sum of 7 and the product of a number x and 12

$$7 + 12x \quad \text{The phrase "sum of" means addition. The phrase "product of" means multiplication.}$$

Exercises

Write the phrase as an expression.

11. 11 fewer than a number b 12. the product of a number d and 32
13. 18 added to a number n 14. a number t decreased by 17
15. **BASKETBALL** Your basketball team scored 4 fewer than twice as many points as the other team.
a. Write an expression for the number of points your team scored.
b. The other team scored 24 points. How many points did your team score?

1.3 Properties of Addition and Multiplication (pp. 14–19)

- a. Simplify the expression $(x + 18) + 4$.

$$\begin{aligned} (x + 18) + 4 &= x + (18 + 4) && \text{Associative Property of Addition} \\ &= x + 22 && \text{Add 18 and 4.} \end{aligned}$$

- b. Simplify the expression $(5.2 + a) + 0$.

$$\begin{aligned} (5.2 + a) + 0 &= 5.2 + (a + 0) && \text{Associative Property of Addition} \\ &= 5.2 + a && \text{Addition Property of Zero} \end{aligned}$$

- c. Simplify the expression $36 \cdot r \cdot 1$.

$$\begin{aligned} 36 \cdot r \cdot 1 &= 36 \cdot (r \cdot 1) && \text{Associative Property of Multiplication} \\ &= 36 \cdot r && \text{Multiplication Property of One} \\ &= 36r \end{aligned}$$

Exercises

Simplify the expression. Explain each step.

16. $10 + (2 + y)$ 17. $(21 + b) + 1$ 18. $3(7x)$
19. $1(3.2w)$ 20. $5.3 + (w + 1.2)$ 21. $(0 + t) + 9$

1.4 The Distributive Property (pp. 22–27)

Use the Distributive Property to simplify $3(n + 9)$.

$$\begin{aligned}3(n + 9) &= 3(n) + 3(9) && \text{Distributive Property} \\ &= 3n + 27 && \text{Multiply.}\end{aligned}$$

Exercises

Use the Distributive Property to simplify the expression.

22. $2(x + 12)$

23. $11(b - 3)$

24. $8(s - 1)$

25. $6(6 + y)$

26. $25(z - 4)$

27. $35(w - 2)$

28. **HAIRCUT** A family of four goes to a salon for haircuts. The cost of each haircut is \$13. Use the Distributive Property and mental math to find the product 4×13 for the total cost.

1.5 Using Formulas to Solve Problems (pp. 28–33)

Find the area of the triangular sail.

The sail is a triangle, so use the formula for the area of a triangle.

$$A = \frac{b \cdot h}{2}$$

Write the formula.

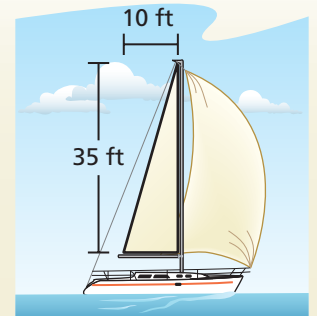
$$= \frac{10 \cdot 35}{2}$$

Substitute 10 for b and 35 for h .

$$= 175$$

Simplify.

∴ The area of the sail is 175 square feet.



Exercises

Use a formula to find the area of the figure.

