

2.4

Practice B

For use with pages 85–89

Write the verbal sentence as an equation.

- The difference of 11 and y is -9 .
- The sum of 41 and w is 26.
- The quotient of r and 6 is -4 .
- The product of 18 and p is 54.

Tell whether the given value of the variable is a solution of the equation.

- $\frac{v}{-4} = 13$; $v = -52$
- $108 = -36z$; $z = -3$
- $27 = n - 16$; $n = 11$
- $84 = 78 + t$; $t = -6$

Match the equation with the corresponding question. Then solve.

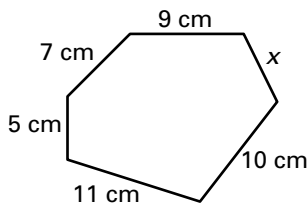
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|-----------------------|--|
| 9. $\frac{a}{2} = 36$ | A. What number minus 36 equals 2? |
| 10. $2a = 36$ | B. What number divided by 2 equals 36? |
| 11. $2 + a = 36$ | C. 2 times what number equals 36? |
| 12. $a - 36 = 2$ | D. 2 plus what number equals 36? |

Solve the equation using mental math.

- | | | |
|-------------------------|--------------------------|-------------------------|
| 13. $12b = -108$ | 14. $96 = -8m$ | 15. $49 = 7d$ |
| 16. $\frac{w}{-3} = 21$ | 17. $\frac{48}{h} = -16$ | 18. $-8 = \frac{k}{-4}$ |
| 19. $39 - f = 15$ | 20. $58 = 27 - \ell$ | 21. $z - 41 = 63$ |
| 22. $y + 43 = 58$ | 23. $-19 + c = 28$ | 24. $g + 26 = -61$ |

In Exercises 25 and 26, use an equation to solve the problem.

- While traveling a long distance, an elephant in a family walks at a rate of about 10 miles per hour. Find the approximate time it takes an elephant to travel 60 miles.
- From 2003 to 2004, the number of students in a school declined by 140 students. In 2004, there were 530 students in the school. Find the number of students in the school in 2003.
- The perimeter of the figure is 48 centimeters.



- Write and simplify an equation that you can use to find x .
- Solve your equation. What is the value of x ?

Lesson 2.3 *continued*

expression: $-11l + 13$ **4.** Terms: $-10v, -26, -17v, 21, -9v$; like terms: $-10v, -17v$, and $-9v$; -26 and 21 ; coefficients: $-10, -17, -9$; constants: -26 and 21 ; simplified expression: $-36v - 5$

5. Terms: $-z, 24, 6z, -31, -15z$; like terms: $-z, 6z$, and $-15z$; 24 and -31 ; coefficients: $-1, 6, -15$; constants: 24 and -31 ; simplified expression: $-10z - 7$ **6.** Terms: $-30, 14, -11h, 8h, -1$; like terms: $-11h$ and $8h$; $-30, 14$, and -1 ; coefficients: $-11, 8$; constants: $-30, 14$, and -1 ; simplified expression: $-17 - 3h$

7. Terms: $27, 6j, -16, -18j, 20$; like terms: $6j$ and $-18j$; $27, -16$, and 20 ; coefficients: 6 and -18 ; constants: $27, -16$, and 20 ; simplified expression: $31 - 12j$ **8.** $9a + 7$

9. $-43 + 17p$ **10.** $-63 - 10i$ **11.** $-5 + 9m$

12. $-49 + 20w^2$ **13.** $-86 + 289x$

14. $30 + 12n$ **15.** $-18b - 81$

16. $-38 - 32k^2$ **17.** $186 - 19r^2$

18. $-2t^2 - 21t + 24$ **19.** $-34d^2 - 77d - 48$

20. **a.** $10 - k - s$ **b.** $5k - 5s + 400$ **c.** $\$385$

21. $(6c - 13)$ units **22.** $(15f + 7)$ units

23. $(6g - 4)$ units

Review for Mastery

1. Terms: $9t^2, -12t, t^2, -1$; like terms: $9t^2$ and t^2 ; coefficients: $9, -12, 1$; constant term: -1

2. Terms: $11m^4, 4m, -5, -15m$; like terms: $4m$ and $-15m$; coefficients: $11, 4, -15$; constant term: -5 **3.** Terms: $5y, -3, 2y$; like terms: $5y$ and $2y$; coefficients: $5, 2$; constant term: -3

4. $-4x - 1$ **5.** $y^5 + 5y + 5$ **6.** $12z^3 - z - 3$

7. $19y + 2$ **8.** $18k - 27$ **9.** $13n + 5$

10. $40m + 500$; 900 words

Challenge Practice

1. $13a - 23$ **2.** $15y + 38$ **3.** $-25t + 74$

4. $-11m + 46$ **5.** $19a + 7b + 22$ **6.** $15y$

7. $4m + 15$ **8.** Perimeter: $(8x + 18)$ units; Area: $(9x + 36)$ square units

9. Perimeter: $24y$ units; Area: $(34y - 8)$ square units

Lesson 2.4

Practice A

1. $x + 5 = 13$ **2.** $10 - x = 4$ **3.** $-3x = 18$

4. $\frac{20}{x} = -5$ **5.** no **6.** yes **7.** yes **8.** no

9. B; $m = 15$ **10.** D; $m = 6$

11. A; $m = -15$ **12.** C; $m = 54$ **13.** 5

14. -8 **15.** 4 **16.** 5 **17.** -9 **18.** 56

19. **a.** $6x$ **b.** 30 pieces **c.** $6x = 30$

d. 5 dishes of lasagna

20. **a.** $20 + x = 28$ **b.** $x = 8$ in.

Practice B

1. $11 - y = -9$ **2.** $41 + w = 26$ **3.** $\frac{r}{6} = -4$

4. $18p = 54$ **5.** yes **6.** yes **7.** no **8.** no

9. B; $a = 72$ **10.** C; $a = 18$ **11.** D; $a = 34$

12. A; $a = 38$ **13.** -9 **14.** -12 **15.** 7

16. -63 **17.** -3 **18.** 32 **19.** 24 **20.** -31

21. 104 **22.** 15 **23.** 47 **24.** -87

25. about 6 hours **26.** 670 students

27. **a.** $x + 42 = 48$ **b.** $x = 6$ cm

Practice C

1. $\frac{x}{-12} = 14$; $x = -168$ **2.** $16d = -176$;

$d = -11$ **3.** $-25 - f = -38$; $f = 13$

4. $s + (-20) = 19$; $s = 39$ **5.** yes **6.** no

7. no **8.** yes **9.** C; $h = 92$ **10.** A; $h = -3.6$

11. D; $h = -3.6$ **12.** B; $h = 52$ **13.** 465

14. -55 **15.** 176 **16.** -7 **17.** 25

18. -65 **19.** 96 **20.** 63 **21.** -85

22. -106 **23.** -102 **24.** 151

25. **a.** $\frac{5,706,000}{t}$ **b.** 3600 theaters

26. **a.** $x + 107 = 112$ **b.** $x = 5$ cm

Review for Mastery

1. $\frac{7x}{3} = 2$ **2.** $3 - 2x = 5$ **3.** solution

4. not a solution **5.** not a solution **6.** solution

7. -12 **8.** 20 **9.** 17 **10.** -4

11. $x + 4 = 19$; 15 years **12.** $6x = 24$; 4 lawns