3.8 EXERCISES

HOMEWORK KEY

- = **WORKED-OUT SOLUTIONS** on p. WS1 for Exs. 17 and 33
- = **TAKS PRACTICE AND REASONING** Exs. 23, 29, 36, 38, and 39
- = **MULTIPLE REPRESENTATIONS** Ex. 34

SKILL PRACTICE

1. **VOCABULARY** Copy and complete: When you write the equation $3x + 2 = 8$ as $ax + b = c$, the equation $ax + b = c$ is called a(n) ? because the coefficients and constants have been replaced by letters.

2. **WRITING** *Describe* the steps you would take to solve $I = prt$ for t.

EXAMPLE 1 on p. 184 for Exs. 3–10

LITERAL EQUATIONS **Solve the literal equation for x. Then use the solution to solve the specific equation.**

3. $ax = bx - c$; $8x = 3x - 10$
4. $a(x + b) = c$; $2(x + 1) = 9$
5. $c = \frac{x + a}{b}$; $2 = \frac{x + 5}{7}$
6. $\frac{x}{a} = \frac{b}{c}$; $\frac{x}{8} = \frac{4.5}{12}$
7. $\frac{x}{a} + b = c$; $\frac{x}{4} + 6 = 13$
8. $ax + b = cx - d$; $2x + 9 = 7x - 1$

ERROR ANALYSIS ***Describe*** **and correct the error in solving the equation for x.**

9.
$$ax + b = 0$$
$$ax = b$$
$$x = \frac{b}{a}$$

10.
$$c = ax - bx$$
$$c = (a - b)x$$
$$c(a - b) = x$$

EXAMPLE 2 on p. 185 for Exs. 11–19

REWRITING EQUATIONS **Write the equation so that y is a function of x.**

11. $2x + y = 7$
12. $5x + 4y = 10$
13. $12 = 9x + 3y$
14. $18x - 2y = 26$
15. $14 = 7y - 6x$
16. $8x - 8y = 5$
17. $30 = 9x - 5y$
18. $3 + 6x = 11 - 4y$
19. $2 + 6y = 3x + 4$

EXAMPLE 3 on p. 185 for Exs. 20–23

REWRITING FORMULAS **Solve the formula for the indicated variable.**

20. Volume of a rectangular prism: $V = \ell wh$. Solve for w.
21. Surface area of a prism: $S = 2B + Ph$. Solve for h.
22. Length of movie projected at 24 frames per second: $\ell = 24f$. Solve for f.

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23. **TAKS REASONING** The formula for the area of a trapezoid is $A = \frac{1}{2}(b_1 + b_2)h$. Which equation is *not* equivalent to the formula?

(A) $h = \frac{2A}{b_1 + b_2}$ (B) $b_1 = \frac{2A}{h} - b_2$ (C) $b_2 = \frac{2A}{b_1} - h$ (D) $b_2 = \frac{2A}{h} - b_1$

REWRITING EQUATIONS **Write the equation so that y is a function of x.**

24. $4.2x - 2y = 16.8$
25. $9 - 0.5y = 2.5x$
26. $8x - 5x + 21 = 36 - 6y$