Name _____ Date _____

1.4 Practice A

In Exercises 1–4, simplify the expression.

1. $-|-2|$
2. $|-7|-|7|$
3. $|-3 \cdot 2|$
4. $\left|\frac{-15}{5}\right|$

In Exercises 5–12, solve the equation. Graph the solution(s), if possible.

5. $|r| = 5$
6. $|q| = -7$
7. $|b - 2| = 5$
8. $|k + 6| = 9$
9. $|-5p| = 35$
10. $\left|\frac{a}{3}\right| = 4$
11. $|8y - 3| = 13$
12. $|x + 4| + 7 = 3$
13. The minimum distance between two fence posts is 4 feet. The maximum distance is 10 feet.
    a. Represent these two distances on a number line.
    b. Write an absolute value equation that represents the minimum and maximum distances.

In Exercises 14–19, solve the equation. Check your solutions.

14. $|j| = |2j + 3|$
15. $|3f - 6| = |9f|$
16. $|b + 3| = |2b - 2|$
17. $|4h - 2| = 2|h + 3|$
18. $3|w - 5| = |2w + 10|$
19. $|2y + 5| = 3y$
20. Your friend says the absolute value equation $|2x + 9| + 7 = 3$ has two solutions because the constant on the right side of the equation is positive. Is your friend correct? Explain.
21. Describe a real-life situation that can be modeled by an absolute-value equation with the solutions $x = 5$ and $x = 10$.

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1.5 Practice A

In Exercises 1–6, solve the literal equation for *y*.

1. $4x + y = 7$

2. $y - 5x = 9$

3. $3y - 15x = 12$

4. $8x + 2y = 18$

5. $7x - y = 35$

6. $4x + 1 = 9 + 4y$

In Exercises 7–12, solve the literal equation for *x*.

7. $y = 5x - 2x$

8. $r = x + 9x$

9. $b = 3x + 9xy$

10. $w = 2hx - 11x$

11. $p = 4x + qx - 5$

12. $m = 9 + 3x - dx$

13. The total cost C (in dollars) to participate in a triathlon series is given by the literal equation $C = 90x + 35$, where x is the number of triathlons in which you participate.

a. Solve the equation for x.

b. In how many triathlons do you participate if you spend a total of \$305? \$665?

c. If your maximum annual triathlon cost is \$1000, what is the maximum number of triathlons in which you could participate?

In Exercises 14–16, solve the formula for the indicated variable.

14. Force: $f = ma$; Solve for m.

15. Volume of a cylinder: $V = \pi r^2 h$; Solve for h.

16. Perimeter of a triangle: $P = a + b + c$; Solve for b.

17. You deposit \$1500 in an account that earns simple interest at an annual rate of 3%.

a. How long must you leave the money in the account to earn \$900 in interest?

b. The total amount (principle plus interest) in an account earning simple interest after t years is given by the formula $A = p + prt$. How much is in the account after 5 years?

c. Solve the equation in part (b) for p.