Name _____ Date _____

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

1. $3y - 9x = 24$

2. $10 - 2y = 46$

3. $3x + 5 = 9 - 4y$

4. $-5x + 7y = 8x + 7$

5. $3 + \dfrac{1}{5}y = 2x + 4$

6. $10 - \dfrac{1}{3}y = 4 + 6x$

In Exercises 7–14, solve the literal equation for x.

7. $g = 4x + 5xy$

8. $w = 4ax - 9x$

9. $z = 6x + px + 2$

10. $t = 10 + 7x - qx$

11. $ax - bx = k$

12. $p = qx + rx + s$

13. $11 - 4x - 3jx = w$

14. $x - 8 + 3vx = y$

15. Describe and correct the error in solving the equation for x.

$$
\begin{aligned}
k &= ax + bx + d \\
k &= x(a + b + d) \\
x &= \frac{k}{a + b + d}
\end{aligned}
$$

In Exercises 16–18, solve the equation for the indicated variable.

16. Simple interest: $I = prt$; Solve for r.

17. Volume of a box: $V = \ell wh$; Solve for w.

18. Heron's formula: $2S = a + b + c$; Solve for b.

19. Coulomb's Law is given by the formula

$$F = k\frac{q_1 q_2}{d^2}.$$

The force F between two charges q_1 and q_2 in a vacuum is proportional to the product of the charges, and is inversely proportional to the square of the distance d between the two charges. Solve the formula for k.

20. You deposit $800 in an account that earns simple interest at an annual rate of 5%. How long must you leave the money in the account to earn $100 in interest?