2-7 Formulas and Literal Equations

Name _____ Date _____

Solve for *h*: $p = \frac{h + 12r}{-3k}$

$(-3k)p = (-3k)\frac{h + 12r}{-3k}$ ← Multiply by $-3k$.

$-3kp = h + 12r$

$-3kp - 12r = h + 12r - 12r$ ← Subtract $12r$.

$-3kp - 12r = h$

Solve for *a*: $G = 9ah + 17b$

$G - 17b = 9ah + 17b - 17b$ ← Subtract $17b$.

$G - 17b = 9ah$

$\frac{G - 17b}{9h} = \frac{9ah}{9h}$ ← Divide by $9h$.

$\frac{G - 17b}{9h} = a$

Solve for each indicated variable.

1. Solve for x: $ax + b = c$

$ax + b = c$

$ax + b - b = c - b$

$ax = c - b$

$\frac{ax}{a} = \frac{c - b}{a}$

$x = \frac{c - b}{a}$

2. Solve for a: $ax + b = c$

3. Solve for d: $4(d + g) = b$

4. Solve for h: $3(h + k) = r$

5. Solve for g: $2(p - g) = 11$

6. Solve for t: $9(y - t) = 15$

7. Solve for d: $5d + 11a = 12p$

8. Solve for w: $9w + 13h = 24f$

9. Solve for u: $\frac{2x - 5u}{y} = 3n$

10. Solve for z: $\frac{11y - 10z}{x} = 6m$

11. Solve for a: $15a - 19b = 20b + 2a$

12. Solve for c: $23c - 12s = 46s - 6c$

13. Solve for a: $\frac{1}{2}a + \frac{2}{3}b = -a + \frac{5}{6}b - 2$

14. Solve for e: $\frac{2}{5}d + \frac{4}{9}e = -2d + \frac{7}{18}e - 1$

Solve for each indicated variable.

15. Solve for v: $h = -16t^2 + vt$

$h + 16t^2 = -16t^2 + 16t^2 + vt$

$h + 16t^2 = vt$

$\frac{h + 16t^2}{t} = \frac{vt}{t}$

$\frac{h + 16t^2}{t} = v$ or $v = \frac{h}{t} + 16t$

16. Solve for a: $z = -12x^2 + ax$

17. Solve for h: $S = 4\pi r^2 h$

18. Solve for r^2: $S = 4\pi r^2 h$

19. Solve for w: $P = 2\ell + 2w$

20. Solve for ℓ: $P = 2\ell + 2w$

21. Solve for a_1: $S = \frac{n}{2}(a_1 + a_n)$

22. Solve for a_n: $S = \frac{n}{2}(a_1 + a_n)$

23. Solve for w: $S = 2\ell w + 2\ell h + 2wh$

24. Solve for j: $10 - \frac{j}{3g} = \frac{j^2}{4g^2} + 10$

25. Solve for r: $20 + \frac{r^3}{7f} = \frac{r^5}{14f^2} + 20$

Solve. Show your work.

26. The formula for the volume of a sphere with radius r is $V = \frac{4}{3}\pi r^3$. What is the radius of a sphere with a volume of $\frac{9}{16}\pi$ ft^3?

27. Physics The formula $h = -16t^2 + 64t$ gives the height, h, at time t, of an object launched from the ground with a speed of 64 feet per second. Find the heights at $t = 0, 1, 2, 3$, and 4 seconds. Explain what happens each second.

SPIRAL REVIEW

Multiply.

28. $\begin{bmatrix} 8 & -3 \\ -4 & 9 \end{bmatrix} \bullet \begin{bmatrix} -2 \\ -8 \end{bmatrix}$

Simplify.

29. $-4\frac{1}{5} - \left(-\frac{9}{10}\right)$

Solve.

30. $6x + 20 = 2x$