

1-1 Skills Practice

Expressions and Formulas

Evaluate each expression if $a = -4$, $b = 6$, and $c = -9$.

1. $3ab - 2bc$ **36**

2. $a^3 + c^2 - 3b$ **-1**

3. $2ac - 12b$ **0**

4. $b(a - c) - 2b$ **18**

5. $\frac{ac}{b} + \frac{2b}{a}$ **3**

6. $\frac{3b - 4c}{2b - (c - b)}$ **2**

7. $\frac{3ab}{c} + \frac{2c}{b}$ **5**

8. $\frac{b^2}{ac} - c$ **10**

Evaluate each expression if $r = -1$, $n = 3$, $t = 12$, $v = 0$, and $w = -\frac{1}{2}$.

9. $6r + 2n$ **0**

10. $2nt - 4rn$ **84**

11. $w(n - r)$ **-2**

12. $n + 2r - 16v$ **1**

13. $(4n)^2$ **144**

14. $n^2r - wt$ **-3**

15. $2(3r + w)$ **-7**

16. $\frac{3v + t}{5n - t}$ **4**

17. $-w[t + (t - r)]$ **$\frac{25}{2}$**

18. $\frac{rv^3}{n^2}$ **0**

19. $9r^2 + (n^2 - 1)t$ **105**

20. $7n - 2v + \frac{2w}{r}$ **22**

21. TEMPERATURE The formula $K = C + 273$ gives the temperature in kelvins (K) for a given temperature in degrees Celsius. What is the temperature in kelvins when the temperature is 55 degrees Celsius? **328 K**

22. TEMPERATURE The formula $C = \frac{5}{9}(F - 32)$ gives the temperature in degrees Celsius for a given temperature in degrees Fahrenheit. What is the temperature in degrees Celsius when the temperature is 68 degrees Fahrenheit? **20°C**

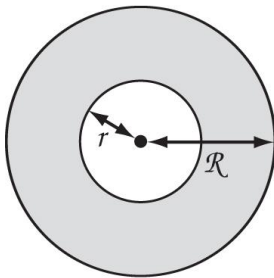
1-1 Word Problem Practice

Expressions and Formulas

- 1. ARRANGEMENTS** The chairs in an auditorium are arranged into two rectangles. Both rectangles are 10 rows deep. One rectangle has 6 chairs per row and the other has 12 chairs per row. Write an expression for the total number of chairs in the auditorium.

$$10 \times 6 + 10 \times 12 \text{ or } 10(6 + 12)$$

- 2. GEOMETRY** The formula for the area of a ring-shaped object is given by $A = \pi(R^2 - r^2)$, where R is the radius of the outer circle and r is the radius of the inner circle. If $R = 10$ inches and $r = 5$ inches, what is the area rounded to the nearest square inch?



$$236 \text{ in}^2$$

- 3. GUESS AND CHECK** Amanda received a worksheet from her teacher. Unfortunately, one of the operations in an equation was covered by a blot. What operation is hidden by the blot?

$$10 + 3(4 \text{ } 6) = 4$$

subtraction

- 4. GAS MILEAGE** Rick has d dollars. The formula for the number of gallons of gasoline that Rick can buy with d dollars is given by $g = \frac{d}{3}$. The formula for the number of miles that Rick can drive on g gallons of gasoline is given by $m = 21g$. How many miles can Rick drive on \$8 worth of gasoline?

$$56 \text{ mi}$$

- 5. COOKING** A steak has thickness w inches. Let T be the time it takes to broil the steak. It takes 12 minutes to broil a one-inch-thick steak. For every additional inch of thickness, the steak should be broiled for 5 more minutes.

- a. Write a formula for T in terms of w .

$$\text{Sample Answer: } T = 5(w - 1) + 12 \text{ or } T = 5w + 7$$

- b. Use your formula to compute the number of minutes it would take to broil a 2-inch-thick steak.

$$17 \text{ min}$$