1-1 Skills Practice
Expressions and Formulas

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

1. $3ab - 2bc$

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

3. $2ac - 12b$

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

5. $\dfrac{ac}{b} + \dfrac{2b}{a}$

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

7. $\dfrac{3ab}{c} + \dfrac{2c}{b}$

8. $\dfrac{b^2}{ac} - c$

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

9. $6r + 2n$

10. $2nt - 4rn$

11. $w(n - r)$

12. $n + 2r - 16v$

13. $(4n)^2$

14. $n^2r - wt$

15. $2(3r + w)$

16. $\dfrac{3v + t}{5n - t}$

17. $-w[t + (t - r)]$

18. $\dfrac{rv^3}{n^2}$

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

20. $7n - 2v + \dfrac{2w}{r}$

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?

22. TEMPERATURE The formula $C = \dfrac{5}{9}(F - 32)$ 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?
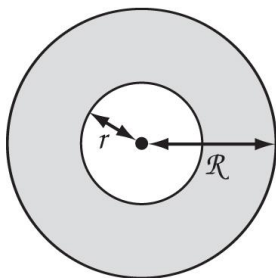
1-1 Word Problem Practice
Expressions and Formulas

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.

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?

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?

$$10 + 3(4 \; \blacksquare \; 6) = 4$$

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 $g = \dfrac{d}{3}$. 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?

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.

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