

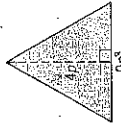
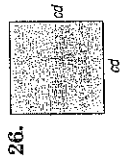
## 7-1 Skills Practice

### Multiplying Monomials

Determine whether each expression is a monomial. Write *yes* or *no*. Explain.

- $1. 11$
- $2. a - b$
- $3. \frac{p^2}{r^2}$
- $4. y$
- $5. j^2k$
- $6. 2a + 3b$
- Simplify.**
  - $7. a^2(a^3)(a^6)$
  - $8. x(x^2)(x^7)$
  - $9. (y^2z)(yz^2)$
  - $10. (l^2k^3)(l^2k)$
  - $11. (a^2b^4)(a^2b^2)$
  - $12. (cd^2)(c^2d^3)$
  - $13. (2x^2)(3x^5)$
  - $14. (5a^7)(4a^2)$
  - $15. (4xy^3)(3x^3y^6)$
  - $16. (7a^5b^2)(a^2b^3)$
  - $17. (-5m^3)(3m^8)$
  - $19. (10^2)^3$
  - $20. (p^3)^{12}$
  - $21. (-6p)^2$
  - $22. (-3y)^3$
  - $23. (3pr^2)^2$
  - $24. (2b^3c^4)^2$
  - $25. (-2c^4d)(-4cd)$

**GEOMETRY** Express the area of each figure as a monomial.



## 7-2 Skills Practice

### Dividing Monomials

Simplify each expression. Assume that no denominator equals zero.

- $1. \frac{6^4}{6^4}$
- $2. \frac{9^{12}}{9^8}$
- $3. \frac{t^4}{t^2}$
- $4. \frac{r^2t^2}{r^2t^4}$
- $5. \frac{m}{m^5}$
- $6. \frac{9d^7}{3d^6}$
- $7. \frac{12z^5}{86z}$
- $8. \frac{w^4x^3}{w^3x}$
- $9. \frac{a^5b^5}{ab^2}$
- $10. \frac{m^7p^2}{m^3p^2}$
- $11. \frac{-21w^5x^2}{7w^4x^5}$
- $12. \frac{82x^3y^2z^5}{-8xy^2z^5}$
- $13. \left(\frac{4p^7}{7r^3}\right)^2$
- $14. 4^{-4}$
- $15. 8^{-2}$
- $16. \left(\frac{5}{3}\right)^{-2}$
- $17. \left(\frac{9}{11}\right)^{-1}$
- $18. \frac{h^3}{h^{-6}}$
- $19. k^3(k^4)(k^{-6})$
- $20. k^{-1}(l^{-6})(m^8)$
- $21. \frac{f^{-1}}{f^4}$
- $22. \left(\frac{16p^5w^2}{2p^3w^3}\right)^0$
- $23. \frac{f^{-3}g^4}{h^{-2}}$
- $24. \frac{15x^6y^{-9}}{5xy^{-11}}$
- $25. \frac{-15t^0u^{-1}}{5t^8}$
- $26. \frac{48x^6y^7z^6}{-6xy^6z^6}$

**7-3 Skills Practice****Scientific Notation**

Express each number in scientific notation.

1. 3,400,000,000
2. 0.000000312
3. 2,091,000
4. 980,200,000,000,000
5. 0.00000000008
6. 0.00142
7.  $2.1 \times 10^5$
8.  $8.023 \times 10^{-7}$
9.  $3.63 \times 10^{-6}$
10.  $7.15 \times 10^8$
11.  $1.86 \times 10^{-4}$
12.  $4.9 \times 10^5$

Express each number in standard form.

13.  $(6.1 \times 10^5)(2 \times 10^5)$
14.  $(4.4 \times 10^6)(1.6 \times 10^{-9})$
15.  $(8.8 \times 10^8)(3.5 \times 10^{-13})$
16.  $(1.35 \times 10^5)(7.2 \times 10^{-4})$
17.  $(2.2 \times 10^{-12})(8 \times 10^6)$
18.  $(3.4 \times 10^{-5})(5.4 \times 10^{-4})$

Evaluate each product. Express the results in both scientific notation and standard form.

19.  $\frac{(9.2 \times 10^{-5})}{(2 \times 10^{-6})}$
20.  $\frac{(4.8 \times 10^4)}{(3 \times 10^{-5})}$
21.  $\frac{(1.161 \times 10^{-9})}{(4.3 \times 10^{-5})}$
22.  $\frac{(4.625 \times 10^{10})}{(1.25 \times 10^4)}$

**7-4 Skills Practice****Polynomials**Determine whether each expression is a polynomial. If so, identify the polynomial as a *monomial*, *binomial*, or *trinomial*.

1.  $5mt + t^2$
2.  $4by + 2b - by$
3.  $-32$
4.  $\frac{3x}{7}$
5.  $5x^2 - 3x^{-4}$
6.  $2c^2 + 8c + 9 - 3$

Find the degree of each polynomial.

7. 12
8.  $3r^4$
9.  $b + 6$
10.  $4a^3 - 2a$
11.  $5abc - 2b^2 + 1$
12.  $8x^5y^4 - 2x^3$

Write each polynomial in standard form. Identify the leading coefficient.

13.  $3x + 1 + 2x^2$
14.  $5x - 6 + 3x^2$
15.  $9x^2 + 2 + x^3 + x$
16.  $-3 + 3x^3 - x^2 + 4x$
17.  $x^2 + 3x^3 + 27 - x$
18.  $25 - x^3 + x$