

## ALGEBRA: Multiplying Monomials

*Simplify.*

1.  $(x)^2$       2.  $(a)^3$       3.  $(p)^5$   
 4.  $(n^2)^2$       5.  $(-t^3)^2$       6.  $(-y^2)^3$

*Simplify.*

7.  $(x^2)^3$       8.  $(y^3)^2$       9.  $(m^2)^2$   
 10.  $(n^3)^4$       11.  $(x^3)^3$       12.  $(y^2)^3$   
 13.  $(z^4)^3$       14.  $(m^4)^5$       15.  $(p^{18})^2$   
 16.  $(-s^{10})^2$       17.  $(-x)^{31}$       18.  $-(-b^0)^3$

*Simplify.*

19.  $(xy)^2$       20.  $(ab)^3$       21.  $(-xy)^2$   
 22.  $(mn)^4$       23.  $(pq)^3$       24.  $(-2xt)^2$   
 25.  $(4xy)^2$       26.  $(-2ax)^3$       27.  $-(3rs)^3$

*Simplify.*

28.  $(x^2y^2)^3$       29.  $(x^2y^3)^2$       30.  $(a^2b)^3$   
 31.  $(ab^3)^2$       32.  $(mn)^3$       33.  $(-ab^2)^2$   
 34.  $(-j^3k^4)^2$       35.  $(x^2y)^2$       36.  $-(-s^3t^2)^0$

*Simplify.*

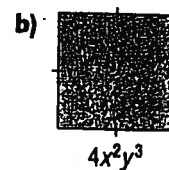
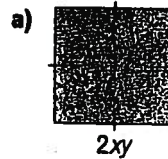
37.  $(2x^2)^3$       38.  $(3y^3)^2$   
 39.  $(4x^4)^2$       40.  $(5y^2)^2$   
 41.  $(-m^2)^2$       42.  $(-n^2)^3$   
 43.  $(-2n^2)^3$       44.  $(-3y^2)^2$   
 45.  $(3pqr)^2$       46.  $(-3yz)^3$   
 47.  $(-4x^2y^3)^3$       48.  $-(3xy^0)^2$

*Simplify.*

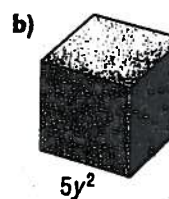
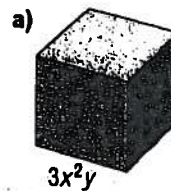
49.  $(2x^2y^3)^2(x^2y)$   
 50.  $(-3xy)(-2xy)^2$   
 51.  $(2xy^2)^3(3x^2y^2)$   
 52.  $(2a^4b^3)(-3ab)^3(10a^2b^2)$   
 53.  $(10abc)^2(-2a^2bc)$

### Problems and Applications

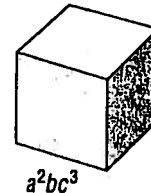
54. Write and simplify an expression for the area of each square.



55. Write and simplify an expression for the volume of each cube.



56. Find the volume of this cube if  $a = 1$ ,  $b = 2$ , and  $c = 3$ .



- Practice** 1.  $x^2$  2.  $a^3$  3.  $p^5$  4.  $n^4$  5.  $t^6$  6.  $-y^6$  7.  $x^6$   
 8.  $y^6$  9.  $m^4$  10.  $n^{12}$  11.  $x^9$  12.  $y^6$  13.  $z^{12}$  14.  $m^{20}$   
 15.  $p^{16}$  16.  $s^{20}$  17.  $-x^{31}$  18.  $-1$  19.  $x^2y^2$  20.  $a^3b^3$   
 21.  $x^1y^2$  22.  $m^4n^4$  23.  $p^1q^1$  24.  $4x^2t^2$  25.  $16x^4y^2$   
 26.  $-8a^3x^3$  27.  $-27r^3s^3$  28.  $x^6y^6$  29.  $x^4y^6$  30.  $a^6b^3$   
 31.  $a^1b^6$  32.  $m^1n^3$  33.  $a^2b^4$  34.  $j^6k^8$  35.  $x^4y^2$  36.  $-1$   
 37.  $8x^6$  38.  $9y^6$  39.  $16x^8$  40.  $25y^4$  41.  $m^4$  42.  $-n^6$   
 43.  $-8n^6$  44.  $9y^4$  45.  $9p^2q^2r^2$  46.  $-27y^3z^3$   
 47.  $-64x^6y^9$  48.  $-9x^2$  49.  $4x^6y^7$  50.  $-12x^1y^1$   
 51.  $24x^2y^8$  52.  $-5a^9b^4$  53.  $-200a^4b^3c^3$  **Problems and Applications** 54. a)  $4x^1y^2$  b)  $16x^4y^6$  55. a)  $27x^6y^1$  b)  $125y^6$  56. 157 464 57. a) no b) yes