

Key

7-1

Practice

Multiplying Monomials

Evens.

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

1. $\frac{21a^2}{7b}$

no, variable in denominator.

2. $\frac{b^3c^2}{2}$

yes, can be written as $\frac{1}{2}b^3c^2$

Simplify each expression.

3. $(-5x^2y)(3x^4)$

$-15x^6y$

4. $(2ab^2f^2)(4a^3b^2f^2)$

$8a^4b^4f^4$

5. $(3ad^4)(-2a^2)$

$-6a^3d^4$

6. $(4g^3h)(-2g^5)$

$-8g^8h$

7. $(-15xy^4)(-\frac{1}{3}xy^3)$

$5x^2y^7$

8. $(-xy)^3(xz)$

$-x^4y^3z$

9. $(-18m^2n)^2(-\frac{1}{6}mn^2)$

$324m^4n^2 \cdot -\frac{1}{6}mn^2$

10. $(0.2a^2b^3)^2$

$.04a^4b^6$

11. $(\frac{2}{3}p)^2$

$\frac{4}{9}p^2$

12. $(\frac{1}{4}ad^3)^2$

$\frac{1}{16}a^2d^6$

13. $(0.4k^3)^3$

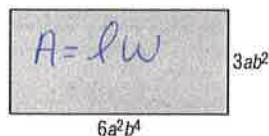
$.064k^9$

14. $[(4^2)^2]^2$

$(4^4)^2 = 4^8 = 65,536$

GEOMETRY Express the area of each figure as a monomial.

15.



$18a^3b^6$

16.



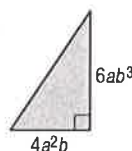
$$A = \pi r^2$$

$$\pi (5x^3)^2$$

$$3.14 \cdot 25x^6$$

$$\approx 78.5x^6$$

17.

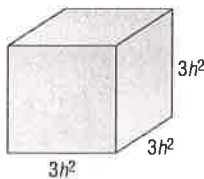


$$A = \frac{1}{2}bh$$

$$12a^3b^4$$

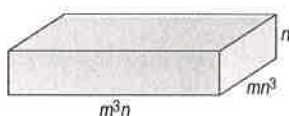
GEOMETRY Express the volume of each solid as a monomial.

18.



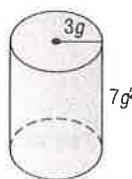
$27h^6$

19.



m^4n^5

20.



$$V = \pi r^2 h$$

$$3.14 (3g)^2 (7g^2)$$

$$3.14 \cdot 9g^2 \cdot 7g^2$$

$$\approx 197.82g^4$$

21. **COUNTING** A panel of four light switches can be set in 2^4 ways. A panel of five light switches can set in twice this many ways. In how many ways can five light switches be set?

$$2(2^4) = 2(16) = 32 \text{ ways}$$

22. **HOBBIES** Tawa wants to increase her rock collection by a power of three this year and then increase it again by a power of two next year. If she has 2 rocks now, how many rocks will she have after the second year?

$$(2^3)^2$$

$$2^6$$

$$64 \text{ rocks}$$