## 8-1 Practice (Average)

Multiplying Monomials

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

1. $\dfrac{21a^2}{7b}$ **No; this involves the quotient, not the product, of variables.**

2. $\dfrac{b^3c^2}{2}$ **Yes; this is the product of a number, $\dfrac{1}{2}$, and two variables.**

Simplify.

3. $(-5x^2y)(3x^4)$ **$-15x^6y$**

4. $(2ab^2c^2)(4a^3b^2c^2)$ **$8a^4b^4c^4$**

5. $(3cd^4)(-2c^2)$ **$-6c^3d^4$**

6. $(4g^3h)(-2g^5)$ **$-8g^8h$**

7. $(-15xy^4)\left(-\dfrac{1}{3}xy^3\right)$ **$5x^2y^7$**

8. $(-xy)^3(xz)$ **$-x^4y^3z$**

9. $(-18m^2n)^2\left(-\dfrac{1}{6}mn^2\right)$ **$-54m^5n^4$**

10. $(0.2a^2b^3)^2$ **$0.04a^4b^6$**

11. $\left(\dfrac{2}{3}p\right)^2$ **$\dfrac{4}{9}p^2$**

12. $\left(\dfrac{1}{4}cd^3\right)^2$ **$\dfrac{1}{16}c^2d^6$**

13. $(0.4k^3)^3$ **$0.064k^9$**
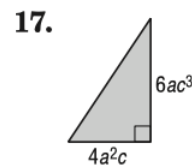
14. $[(4^2)^2]^2$ **4^8 or 65,536**

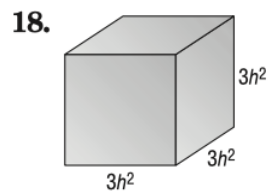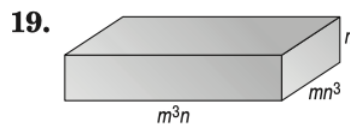**GEOMETRY Express the area of each figure as a monomial.**

15.

$3ab^2$

$6a^2b^4$

$18a^3b^6$

16.

$5x^3$

$(25x^6)\pi$

17.

$6ac^3$

$4a^2c$
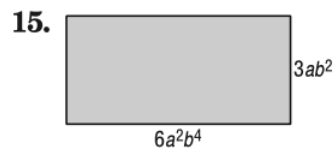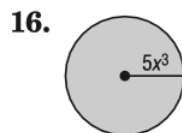
$12a^3c^4$

GEOMETRY Express the volume of each solid as a monomial.

18.

$3h^2$

$3h^2$

$3h^2$

$27h^6$

19.

n

mn^3

m^3n

m^4n^5

20.

$3g$

$7g^2$
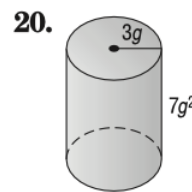
$(63g^4)\pi$

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? **2^5 or 32**

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? **2^6 or 64**