NAME _____ DATE _____ PERIOD ____

8-1 Skills Practice

Multiplying Monomials

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

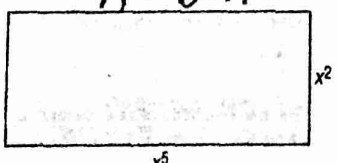
1. 11 Yes - number
2. $a - b$ No - subtracted
3. $\frac{p^2}{q^2}$ No - division w/ variable denominator
4. y Yes - variable
5. j^3k Yes - product
6. $2a + 3b$ No - addition

Simplify.

7. $a^2(a^3)(a^6)$ a^{11}
8. $x(x^2)(x^7)$ x^{10}
9. $(y^2z)(yz^2)$ y^3z^3
10. $(\ell^2k^2)(\ell^3k)$ $k^3\ell^5$
11. $(e^2f^4)(e^2f^2)$ e^4f^6
12. $(cd^2)(c^3d^2)$ c^4d^4
13. $(2x^2)(3x^5)$ $6x^7$
14. $(5a^7)(4a^2)$ $20a^9$
15. $(4xy^3)(3x^3y^5)$ $12x^4y^8$
16. $(7a^5b^2)(a^2b^3)$ $7a^7b^5$
17. $(-5m^3)(3m^8)$ $-15m^{11}$
18. $(-2c^4d)(-4cd)$ $8c^5d^2$
19. $(10^2)^3$ 10^6
20. $(p^3)^{12}$ p^{36}
21. $(-6p)^2$ $-6^2p^2 = 36p^2$
22. $(-3y)^3$ $(-3)^3y^3 = -27y^3$
23. $(3pq^2)^2$ $3^2p^2q^4 = 9p^2q^4$
24. $(2b^3c^4)^2$ $2^2b^6c^8 = 4b^6c^8$

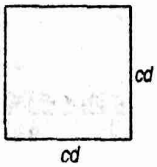
GEOMETRY Express the area of each figure as a monomial.

25. $A = b \cdot h$



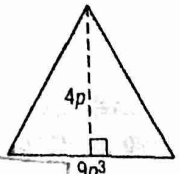
$(x^5)x^2 = x^7$ sq units or x^7 units^2

26.



$(cd)(cd) = c^2d^2$ sq units or c^2d^2 units^2

27. $A = \frac{1}{2}b \cdot h$



$\frac{1}{2}(9p^3)(4p)$

$18p^4$ sq units or $18p^4$ units^2

Lesson 8-1

NAME _____ DATE _____ PERIOD ____

8-1

Practice

Multiplying Monomials

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

1. $\frac{21a^2}{7b}$ no, variable in denominator cannot have quotient

2. $\frac{b^3c^2}{2}$ yes, could be written as product → $\frac{1}{2}b^3c^2$

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

8. $(-xy)^3(xz)$ $(-1)^3x^3y^3xz$ → $-x^4y^3z$

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

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

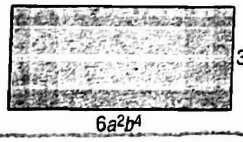
11. $\left(\frac{2}{3}p\right)^2$ $\frac{4}{9}p^2$

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

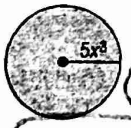
13. $(0.4k^3)^3$ $0.064k^9$

14. $[(4^2)^2]^2$ 4^8 or 65,536

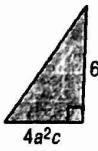
GEOMETRY Express the area of each figure as a monomial.

15. 

bh
$18a^3b^6$ units²

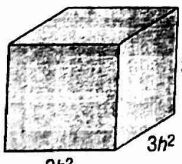
16. 

πr^2
$(5x^3)^2$
$(25x^6)\pi$ units²

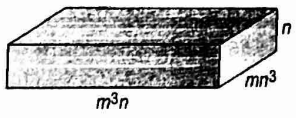
17. 

$\frac{1}{2}bh$
$\frac{1}{2}(24a^3c^4)$
$12a^3c^4$ units²

GEOMETRY Express the volume of each solid as a monomial.

18. 

ℓwh
$27h^6$ units³

19. 

m^4n^5 units³

20. 

πr^2h
$(3g)^2 = 9g^2$
$(63g^4)\pi$ units²

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? $2^4 = 16$ 2^5 or 32 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?

$2^3 = 8$ $8^2 = 64$ 64 rocks