

Page 492 #4-48 Evens

**SIMPLIFYING EXPRESSIONS** Simplify the expression. Write your answer using exponents.

4.  $8^5 \cdot 8^2$

6.  $9 \cdot 9^5$

8.  $(-6)^6(-6)$

10.  $(-3)^2(-3)^{11}(-3)$

12.  $(7^4)^3$

14.  $[(-8)^9]^2$

16.  $(17 \cdot 16)^4$

18.  $((-14) \cdot 22)^5$

**SIMPLIFYING EXPRESSIONS** Simplify the expression.

20.  $y^9 \cdot y$

22.  $a^4 \cdot a^3 \cdot a^{10}$

24.  $(y^4)^6$

26.  $[(d + 9)^7]^3$

28.  $-(5x)^2$

30.  $(5pq)^3$

32.  $(-8m^4)^2 \cdot m^3$

34.  $(-20x^3)^2(-x^7)$

36.  $\left(\frac{1}{2}y^5\right)^3(2y^2)^4$

38.  $(-10n)^2(-4n^3)^3$

40. ★ **MULTIPLE CHOICE** Which expression is equivalent to  $(-9)^6$ ?

Ⓐ  $(-9)^2(-9)^3$

Ⓑ  $(-9)(-9)^5$

Ⓒ  $[(-9)^4]^2$

Ⓓ  $[(-9)^3]^3$

**SIMPLIFYING EXPRESSIONS** Find the missing exponent.

42.  $x^4 \cdot x^? = x^5$

44.  $(2z^?)^3 = 8z^{15}$

46. **POPULATION** The population of New York City in 2000 was 8,008,278. What was the order of magnitude of the population of New York City?

**SIMPLIFYING EXPRESSIONS** Simplify the expression.

48.  $-(-xy^2z^3)^5(x^4yz)^2$