Chapter 10 Review

Write the product using exponents.

1. $(-15) \cdot (-15) \cdot (-15)$

2. $\left(\frac{1}{12}\right) \cdot \left(\frac{1}{12}\right) \cdot \left(\frac{1}{12}\right) \cdot \left(\frac{1}{12}\right) \cdot \left(\frac{1}{12}\right)$

Evaluate the expression.

3. -2^3

4. $10 + 3^3 \div 9$

Simplify the expression. Write your answer as a power.

5. $9^{10} \cdot 9$

6. $(6^6)^5$

7. $(2 \cdot 10)^7$

8. $\frac{(-3.5)^{13}}{(-3.5)^9}$

Evaluate the expression.

9. $5^{-2} \cdot 5^{2}$

10. $\dfrac{-8}{(-8)^{3}}$

Write the number in standard form.

11. 3×10^{7}

12. 9.05×10^{-3}

Evaluate the expression. Write your answer in scientific notation.

13. $(7.8 \times 10^{7}) + (9.9 \times 10^{7})$

14. $(6.4 \times 10^{5}) - (5.4 \times 10^{4})$

Evaluate the expression. Write your answer in scientific notation.

15. $(3.1 \times 10^{6}) \times (2.7 \times 10^{-2})$

16. $(9.6 \times 10^{7}) \div (1.2 \times 10^{-4})$

17. CRITICAL THINKING Is $(xy^2)^3$ the same as $(xy^3)^2$? Explain.

19. TASTE BUDS There are about 10,000 taste buds on a human tongue. Write this number in scientific notation.

20. LEAD From 1978 to 2008, the amount of lead allowed in the air in the United States was 1.5×10^{-6} gram per cubic meter. In 2008, the amount allowed was reduced by 90%. What is the new amount of lead allowed in the air?