Chapter 10 Review

Write the product using exponents.

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

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

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.
$$\frac{-8}{(-8)^3}$$

Write the number in standard form.

11.
$$3 \times 10^7$$

12.
$$9.05 \times 10^{-3}$$

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?