Lesson 1 Extra Practice

Powers and Exponents

Write each expression using exponents.

1. $8 \cdot 8 \cdot 8 \cdot 8$

2. 9

3. $(-6)(-6)(-6)(-6)(-6)$

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

5. $(-0.4)(-0.4)(-0.4)$

6. $s \cdot s \cdot s \cdot s \cdot s$

7. $(y \cdot y \cdot y) \cdot (y \cdot y \cdot y \cdot y)$

8. $a \cdot b \cdot b$

9. $4 \cdot 4 \cdot 4 \cdot 4 \cdot x \cdot x \cdot x \cdot y$

10. $3q \cdot 3q \cdot 3q \cdot 3q \cdot 3q \cdot 3q$

11. $\underbrace{n \cdot n \cdot n \cdot \ldots \cdot n}_{\text{17 factors}}$

12. $(x + y)(x + y)$

Evaluate each expression if $m = 3$, $n = 2$, and $p = -4$.

13. $3m^2$

14. $n^2 + m$

15. $7n^4$

16. $-5(n + p)^3$

17. p^3

18. $2(m - p)^2$

19. $-2n^3 + m$

20. $m - p^2$

21. $(m + n + p)^3$

22. $5p - m^2$

23. $(n + p)^4$

24. $(m - n)^8$

Lesson 2 Extra Practice

Negative Exponents

Write each expression using a positive exponent.

1. y^{-9} **2.** m^{-4} **3.** 5^{-3}

4. 2^{-7} **5.** 6^{-3} **6.** a^{-11}

Write each fraction as an expression using a negative exponent other than −1.

7. $\frac{1}{121}$ **8.** $\frac{1}{3^9}$ **9.** $\frac{1}{5^3}$

10. $\frac{1}{7^4}$ **11.** $\frac{1}{15^2}$ **12.** $\frac{1}{25}$

13. $\frac{1}{343}$ **14.** $\frac{1}{64}$ **15.** $\frac{1}{14^4}$

Evaluate each expression if $x = 3$ and $y = -2$.

16. x^{-2} **17.** 9^y **18.** y^{-3}

19. x^{-3} **20.** y^{-4} **21.** $(xy)^{-2}$