5-1 Practice: Skills, Concepts, and Problem Solving

Exponents

Write each expression using exponents.

1. $3 \cdot 3 \cdot m$

2. $2 \cdot d \cdot 5 \cdot d \cdot d \cdot 5$

3. $p \cdot 9 \cdot 3 \cdot q \cdot p \cdot 9$

4. $g \cdot 7 \cdot 7 \cdot g \cdot h \cdot 7 \cdot h$

5. $2 \cdot 5 \cdot r \cdot 7 \cdot s \cdot r \cdot 5 \cdot r \cdot 7 \cdot r \cdot s$

6. $x \cdot 8 \cdot y \cdot x \cdot 5 \cdot x \cdot 5 \cdot y \cdot 8 \cdot y \cdot y \cdot 5$

Simplify.

7. 2^4

8. 5^3

9. $2^2 \cdot 6^2$

10. $2^3 \cdot 5^2$

11. 3^{-4}

12. 8^{-3}

13. 9^{-2}

14. 5^{-3}

15. $7 \cdot 2^2 \cdot 5^2$

16. $3^2 \cdot 6 \cdot 10^2$

17. $3^{-2} \cdot 2^{-3}$

18. $7 \cdot 3^3 \cdot 5^{-4}$

19. $\frac{a^3}{a^2}$

20. 4^7

21. $\frac{3^4}{3^3}$

22. 20^4

23. 8^2

24. 2^4

25. 6^3

26. 3^5

27. $\frac{18xy^3}{12y^2}$

28. $\frac{14a^3b^2}{2a^2}$

29. $\frac{g^3h^2i}{ghi}$

30. $\frac{34m^3n^4}{17m^3n^4}$

31. **MONEY** Suppose $100 is deposited into an account and the amount doubles every 8 years. How much will be in the account after 40 years?

32. **EPIDEMICS** At the beginning of an epidemic, 50 people are sick. If the number of sick people triples every other day, how many people will be sick at the end of 2 weeks?