

**1-2****Practice*****Powers and Exponents***

Write each power as a product of the same factor.

1.  $5^7$

2.  $2^4$

3.  $7^2$

4.  $10^5$

5.  $3^3$

6.  $6^8$

7. *four to the eighth power*8. *eight cubed*9. *ten squared*

Write each product in exponential form.

10.  $9 \cdot 9 \cdot 9 \cdot 9 \cdot 9 \cdot 9$

11.  $1 \cdot 1 \cdot 1 \cdot 1 \cdot 1$

12.  $2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$

13.  $6 \cdot 6 \cdot 6 \cdot 6 \cdot 6 \cdot 6 \cdot 6 \cdot 6 \cdot 6$

14.  $5 \cdot 5$

15.  $4 \cdot 4 \cdot 3 \cdot 3 \cdot 3 \cdot 3 \cdot 3$

Evaluate each expression.

16.  $4^3$

17.  $1^{11}$

18.  $2^5$

19.  $10^3$

20.  $9^3$

21.  $8^1$

22. *five to fourth power*23. *7 squared*24. *zero to the sixth power*

Use a calculator to determine whether each sentence is *true* or *false*.

25.  $2^8 = 8^2$

26.  $17^2 < 172$

27.  $3^2 > 1^{19}$

Order the following powers from least to greatest.

28.  $7^2, 5^3, 3^4, 2^5$

29.  $4^3, 1^{13}, 12^2, 8^3$

30.  $3^9, 5^7, 7^5, 9^3$

31. **INTERACTIVE MAPS** Mansi is using an interactive map on her computer that allows her to zoom in or zoom out. Each time she zooms out the scale of the map increases by a power of ten. If she zooms out four times the scale is  $10^4$  times greater. Write this number in standard form.

32. **BACTERIA** A lab technician observed 5 bacteria growing in a lab dish. One hour later he observed 25 bacteria. Every hour he notices about 5 times as many as the hour before. After several hours of observation, he determined the lab dish had  $5^9$  bacteria. Use a calculator to find the number in standard form that represents the bacteria in the lab dish.