

Name .....

## Independent Practice

Write each product using an exponent.

2.  $10 \times 10 =$  \_\_\_\_\_

3.  $8 \times 8 \times 8 \times 8 =$  \_\_\_\_\_

4.  $3 \times 3 \times 3 \times 3 \times 3 \times 3 =$  \_\_\_\_\_

5.  $5 \times 5 \times 5 \times 5 \times 5 =$  \_\_\_\_\_

6.  $9 \times 9 \times 9 \times 9 =$  \_\_\_\_\_

7.  $1 \times 1 \times 1 \times 1 \times 1 =$  \_\_\_\_\_

Write each power as a product of the same factor. Then find the value.

8.  $10^4 =$  \_\_\_\_\_

9.  $3^2 =$  \_\_\_\_\_

10.  $9^3 =$  \_\_\_\_\_

11.  $6^5 =$  \_\_\_\_\_

Write the prime factorization of each number using exponents.

12.  $25 =$  \_\_\_\_\_

13.  $56 =$  \_\_\_\_\_

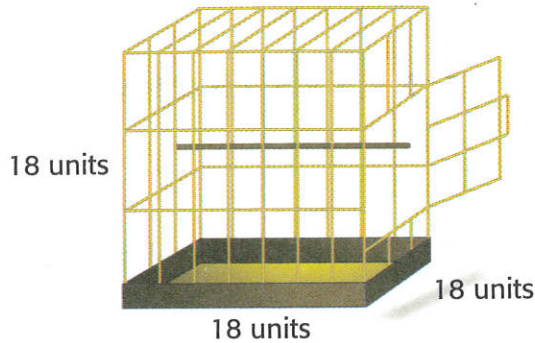
14.  $68 =$  \_\_\_\_\_

15.  $88 =$  \_\_\_\_\_



## Problem Solving

16. To find the amount of space a cube-shaped bird cage occupies, find the *cube* of the measure of one edge of the bird cage. Express the amount of space occupied by the bird cage shown as a power. Then find the amount in cubic units.



17. A single tusk that weighed just over  $2^8$  pounds from an African elephant is the largest tooth ever recorded from any modern animal. About how many pounds did the tusk weigh?

### HOT Problems

18. **Mathematical PRACTICE 2 Reason** Which is greater:  $3^5$  or  $5^3$ ? Explain your reasoning.

19. **Building on the Essential Question** What does it mean for a product of factors to be expressed using exponents?

My Work!

