



PRACTICE



TUTORIAL

Name: \_\_\_\_\_

# Practice & Problem Solving

Scan for  
Multimedia

In 17–20, write the exponent for each expression.

17.  $9 \times 9 \times 9 \times 9$

18.  $1.2^9$

19.  $\frac{1}{6} \times \frac{1}{6} \times \frac{1}{6}$

20.  $7$

**Leveled Practice** In 21–26, evaluate each power or expression.

21.  $8^3$

$$\square \times \square \times \square$$

$$8^3 = \square$$

22.  $\left(\frac{1}{5}\right)^4$

$$\square \times \square \times \square \times \square$$

$$\left(\frac{1}{5}\right)^4 = \square$$

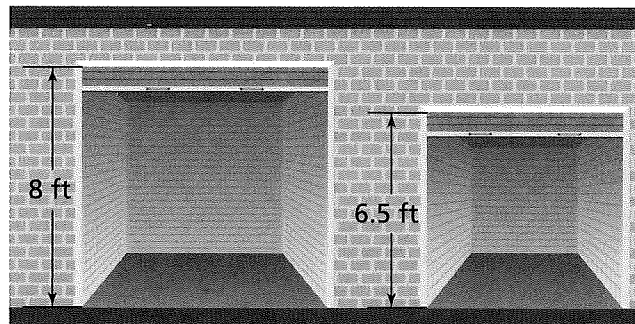
23.  $0.6^2$

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

25.  $58^0$

26.  $6.2 \times 10^3$

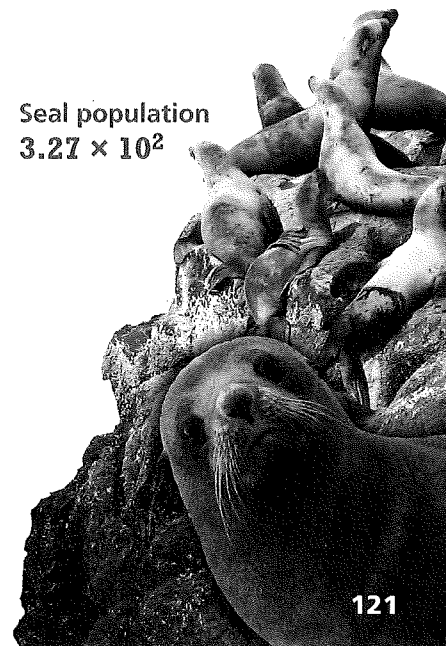
27. A company rents two storage units. Both units are cube-shaped. What is the difference in volume of the two storage units? Note that the volume of a cube is  $s^3$ , where  $s$  is the side length. Explain.



28. Jia is tiling a floor. The floor is a square with side length 12 feet. Jia wants the tiles to be squares with side length 2 feet. How many tiles does Jia need to cover the entire floor? Note that the area of a square is  $s^2$ , where  $s$  is the side length. Explain.

29. A marine biologist studies the population of seals in a research area. How many seals are in the research area?

Seal population  
 $3.27 \times 10^2$



**30. Higher Order Thinking** Zach invested \$50 and tripled his money in two years. Kayla also invested \$50, and after two years the amount was equal to 50 to the third power. Who had more money after two years? Explain.

**31.** Malik read that the land area of Alaska is about  $5.7 \times 10^5$  square miles. About how many square miles is the land area of Alaska?



**32.** Explain why the expressions  $10^0$ ,  $1^4$ , and  $1 \times 1.0^0$  have the same value.

**33.** Solve the equation  $0.3^3 = n$ .

**34. Construct Arguments** The same digits are used for the expressions  $2^5$  and  $5^2$ . Explain how to compare the values of the expressions.

**35. Critique Reasoning** Kristen was asked to write each of the numbers in the expression  $80,000 \times 25$  using exponents. Her response was  $(8 \times 10^3) \times 5^2$ . Was Kristen's response correct? Explain.

**36.** Consider the equation  $1,000,000 = 10^6$ . Why is 10 used as the base to write  $10^6$ ?

**37.** Isabella saved 2 nickels today. If she doubles the number of nickels she saves each day, how many days, including today, will it take her to save more than 500 nickels?

## Assessment Practice

**38.** Which expression is NOT equal to 1,024?

- (A)  $2^{10}$
- (B)  $5 \times 5 \times 5 \times 5$
- (C)  $4^5$
- (D)  $4 \times 4 \times 4 \times 4 \times 4$

**39.** Which expression is equal to  $\frac{1}{36}$ ?

- (A)  $\frac{1}{3} \times \frac{1}{6}$
- (B)  $\frac{1}{4} \times \left(\frac{1}{3}\right)^3$
- (C)  $\left(\frac{1}{2}\right)^2 \times \left(\frac{1}{3}\right)^2$
- (D)  $\frac{1}{2} \times \frac{1}{3} \times \frac{1}{3} \times \frac{1}{3}$

