54. **TAKS REASONING** A byte is a unit used to measure computer memory. Other units are based on the number of bytes they represent. The table shows the number of bytes in certain units. For example, from the table you can calculate that 1 terabyte is equivalent to 2^{10} gigabytes.

a. Calculate How many kilobytes are there in 1 terabyte?

b. Calculate How many megabytes are there in 1 petabyte?

c. CHALLENGE Another unit used to measure computer memory is a bit. There are 8 bits in a byte. *Explain* how you can convert the number of bytes per unit given in the table to the number of bits per unit.

Unit	Number of bytes
Kilobyte	2^{10}
Megabyte	2^{20}
Gigabyte	2^{30}
Terabyte	2^{40}
Petabyte	2^{50}

MIXED REVIEW FOR TAKS

TAKS PRACTICE at classzone.com

55. **TAKS PRACTICE** For a car traveling at a speed of 45 miles per hour, the relationship between the distance traveled, d, and the time traveled, t, is described by the function $d = 45t$. Which statement is true? *TAKS Obj. 1*

Ⓐ The time traveled depends on the distance traveled.

Ⓑ The distance traveled depends on the time traveled.

Ⓒ The speed of the car depends on the distance traveled.

Ⓓ The speed of the car depends on the time traveled.

QUIZ *for Lessons 8.1–8.2*

Simplify the expression. Write your answer using exponents.

1. $3^2 \cdot 3^6$ *(p. 489)*

2. $(5^4)^3$ *(p. 489)*

3. $(32 \cdot 14)^7$ *(p. 489)*

4. $7^2 \cdot 7^6 \cdot 7$ *(p. 489)*

5. $(-4)(-4)^9$ *(p. 489)*

6. $\dfrac{7^{12}}{7^4}$ *(p. 495)*

7. $\dfrac{(-9)^9}{(-9)^7}$ *(p. 495)*

8. $\dfrac{3^7 \cdot 3^4}{3^6}$ *(p. 495)*

9. $\left(\dfrac{5}{4}\right)^4$ *(p. 495)*

Simplify the expression.

10. $x^2 \cdot x^5$ *(p. 489)*

11. $(3x^3)^2$ *(p. 489)*

12. $-(7x)^2$ *(p. 489)*

13. $(6x^5)^3 \cdot x$ *(p. 489)*

14. $(2x^5)^3(7x^7)^2$ *(p. 489)*

15. $\dfrac{1}{x^9} \cdot x^{21}$ *(p. 495)*

16. $\left(-\dfrac{4}{x}\right)^3$ *(p. 495)*

17. $\left(\dfrac{w}{v}\right)^6$ *(p. 495)*

18. $\left(\dfrac{x^3}{4}\right)^2$ *(p. 495)*

19. **MAPLE SYRUP PRODUCTION** In 2001 the order of magnitude of the number of maple syrup taps in Vermont was 10^6. The order of magnitude of the number of gallons of maple syrup produced in Vermont was 10^5. About how many gallons of syrup were produced per tap in Vermont in 2001? *(p. 495)*