Lesson 4 Practice Problems

1. Evaluate:

   a. 10^0

   b. $\frac{10^3}{10^3}$

   c. $10^2 + 10^1 + 10^0$

2. Write each expression as a single power of 10.

   a. $\frac{10^3 \cdot 10^4}{10^5}$

   b. $(10^4) \cdot \frac{10^{12}}{10^7}$

   c. $\left(\frac{10^5}{10^3}\right)^4$

   d. $\frac{10^4 \cdot 10^5 \cdot 10^6}{10^3 \cdot 10^7}$

   e. $\frac{(10^5)^2}{(10^2)^3}$

3. The Sun is roughly 10^2 times as wide as Earth. The star KW Sagittarii is roughly 10^5 times as wide as Earth. About how many times as wide as the Sun is KW Sagittarii? Explain how you know.

CC BY Open Up Resources. Adaptations CC BY IM.

4. Jada has a scale map of Kansas that fits on a page in her book. The page is 5 inches by 8 inches. Kansas is about 210 miles by 410 miles. Select **all** scales that could be a scale of the map. (There are 2.54 centimeters in an inch.)

   A. 1 in to 1 mi

   B. 1 cm to 1 km

   C. 1 in to 10 mi

   D. 1 ft to 100 mi

   E. 1 cm to 200 km

   F. 1 in to 100 mi

   G. 1 cm to 1000 km

   (From Unit 2, Lesson 7.)

5. Select **all** the expressions that are equivalent to $-36x + 54y - 90$.

   A. $-9(4x - 6y - 10)$

   B. $-18(2x - 3y + 5)$

   C. $-6(6x + 9y - 15)$

   D. $18(-2x + 3y - 5)$

   E. $-2(18x - 27y + 45)$

   F. $2(-18x + 54y - 90)$

   (From Unit 4, Lesson 8.)

CC BY Open Up Resources. Adaptations CC BY IM.

6. Bananas cost \$1.50 per pound, and guavas cost \$3.00 per pound. Kiran spends \$12 on fruit for a breakfast his family is hosting. Let b be the number of pounds of bananas Kiran buys and g be the number of pounds of guavas he buys.

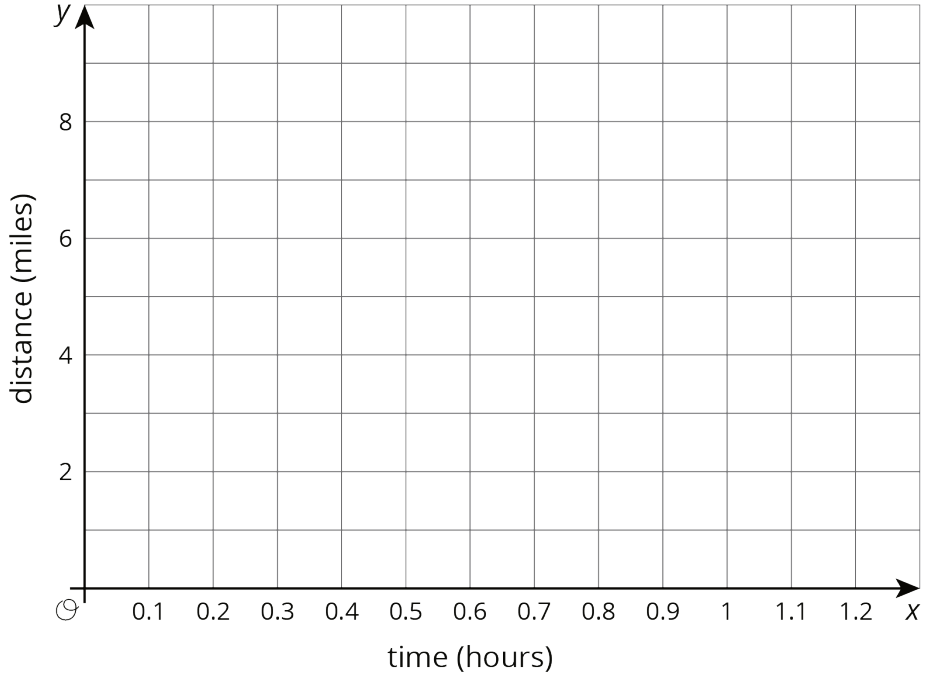
   a. Write an equation relating the two variables.

   b. Rearrange the equation so b is the independent variable.

   c. Rearrange the equation so g is the independent variable.

(From Unit 6, Lesson 3.)

7. Lin's mom bikes at a constant speed of 12 miles per hour. Lin walks at a constant speed $\frac{1}{3}$ of the speed her mom bikes. Sketch a graph of both of these relationships.



(From Unit 5, Lesson 1.)

CC BY Open Up Resources. Adaptations CC BY IM.