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.

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. $18(-2x + 3y - 5)$
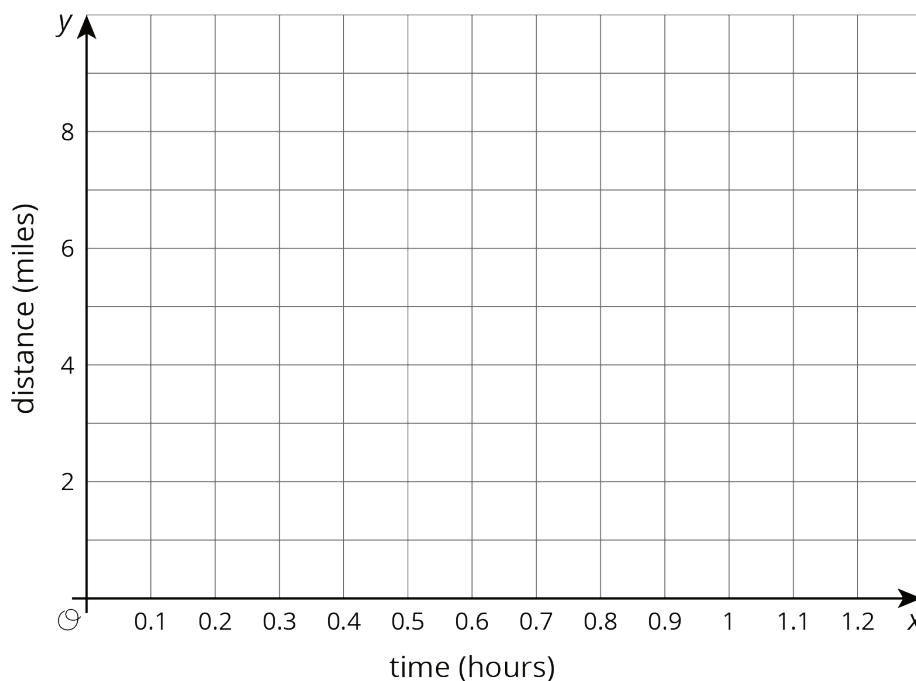
   E. $-2(18x - 27y + 45)$

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

   (From Unit 4, Lesson 8.)

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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.)

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