

Name: _____



New York State Testing Program

2016 Common Core Mathematics Test Book 3

Grade 8

April 13–15, 2016

Released Questions

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Jude incorrectly simplified the expression $\left(\frac{1}{2}\right)^2 \times \frac{1}{2} \times \left(\frac{1}{2}\right)^3$, as shown below.

$$\left(\frac{1}{2}\right)^2 \times \frac{1}{2} \times \left(\frac{1}{2}\right)^3 = \left(\frac{1}{8}\right)^5 = \frac{1}{262,144}$$

Describe the mistake that Jude made.

Answer:

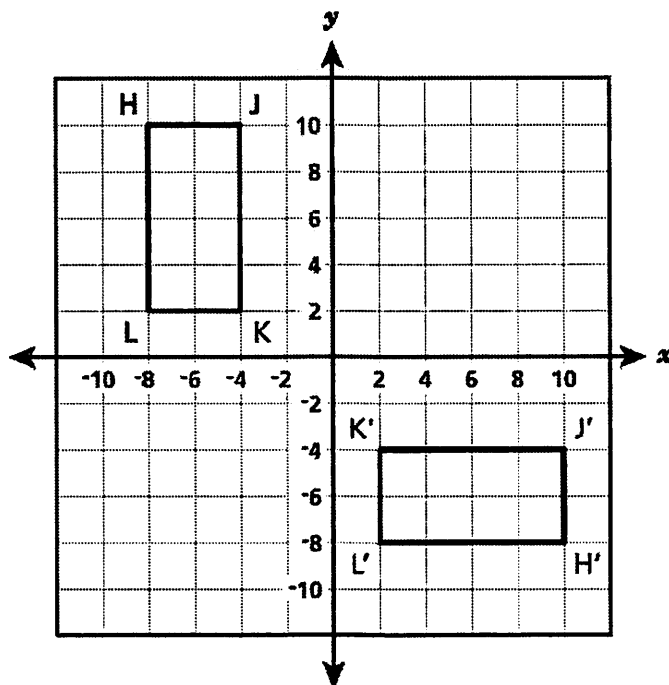
Correctly simplify the expression.

$$\left(\frac{1}{2}\right)^2 \times \frac{1}{2} \times \left(\frac{1}{2}\right)^3$$

Answer _____

GO ON

Congruent rectangles $HJKL$ and $H'J'K'L'$ are shown on the coordinate grid below.



Describe a sequence of transformations on rectangle $HJKL$ that would result in rectangle $H'J'K'L'$.

Answer

54 Write an equation of a function that is not linear.

Answer _____

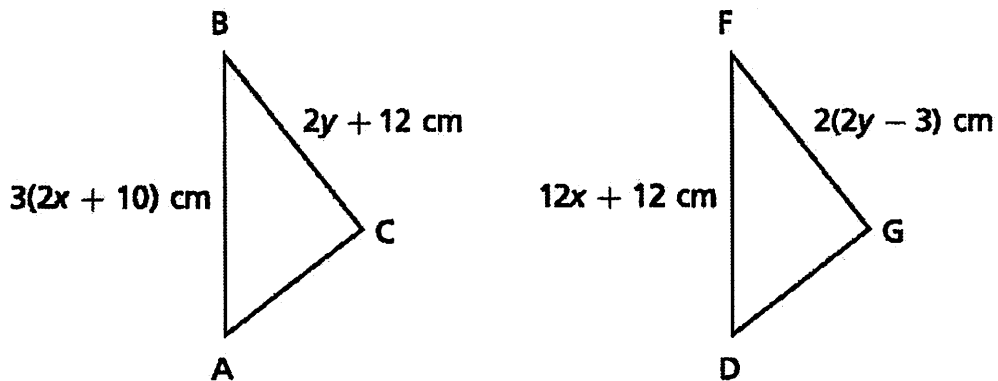
Use your equation to explain why your function is not linear.

Answer

GO ON

55

Triangle ABC is translated to create triangle DFG, as shown below.



In these triangles, side AB is congruent to side DF, and side BC is congruent to side FG. Determine the values of x and y .

Show your work.

Answer $x =$ _____ and $y =$ _____

GO ON

56

A reporter collected data on y , the current market value, in dollars, of a certain car for various years, x , after it had been purchased new. The equation below was fit to the data.

$$y = 16,500 - 1,500x$$

What does the slope of the graph of this equation represent?

Answer

What does the y -intercept of the graph of this equation represent?

Answer

GO ON

57

A triangle with vertices at $A(-1, 1)$, $B(-2, 1)$, and $C(-1, 4)$ is translated. The image of vertex A has coordinates at $(3, -1)$.

Determine the coordinates of either the image of vertex B or the image of vertex C.

Show your work.

Answer _____

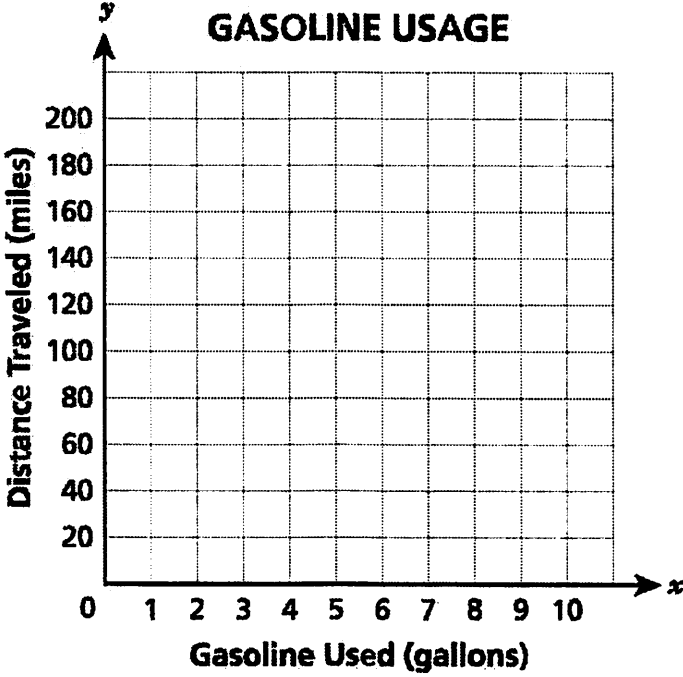
GO ON

58

Stanley drove his car on a business trip. When he left, the mileage was 840 miles, and when he returned, the mileage was 1,200 miles. The car used 12 gallons of gasoline for this trip.

Draw a graph on the grid below to show the relationship between gasoline used, x , and the distance traveled, y , during Stanley's trip.

Carla made the same trip as Stanley, but her car used only 10 gallons of gasoline. Graph the gasoline usage of Carla's car on the same grid as Stanley's car.



How do the slopes for Stanley's and Carla's cars compare?

Explain your answer in terms of the unit rate.

Answer

GO ON

59

Tim is selling tickets to a school sporting event to raise money for his club. He put some extra money in his box before he began. As he sells tickets, he records the number of tickets he has sold and the total amount of money in the box. Some of his data are shown below.

**TOTAL AMOUNT OF MONEY
FROM TICKET SALES**

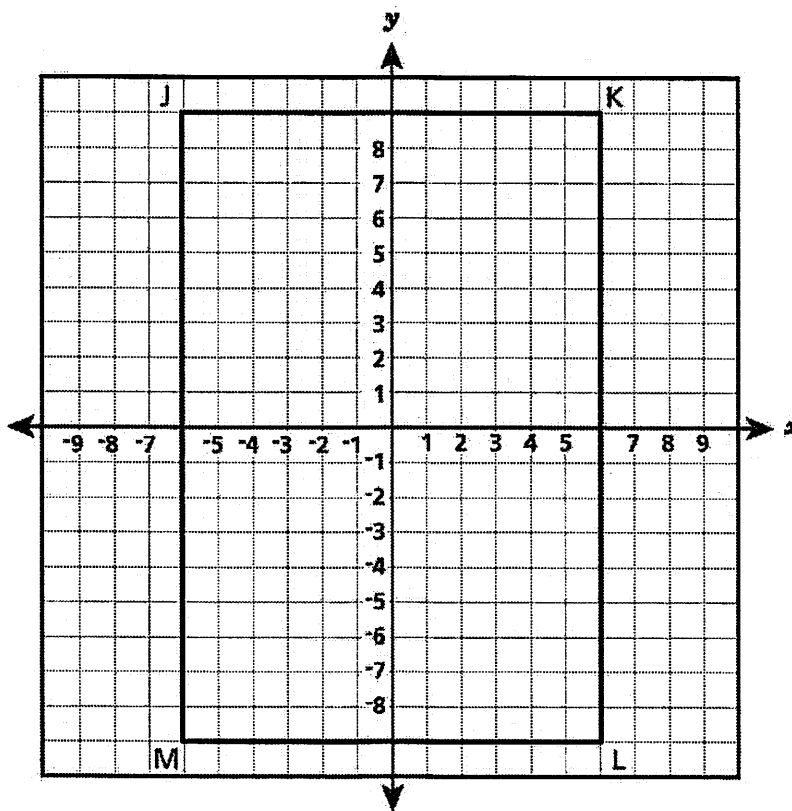
Number of Tickets Sold	Total Money in Box (dollars)
7	108.75
13	146.25
18	177.50

Assuming all the tickets are the same price, write an equation that represents the situation in the table. Explain how to use your equation to determine the amount of money originally in the box before any tickets were sold and the price of each ticket.

Show your work.

Answer

Rectangle JKLM is shown on the coordinate grid below.



GO ON

Rectangle JKLM undergoes a sequence of transformations, resulting in rectangle J'K'L'M'.

The length of side K'L' is 6 units. The coordinates of vertex K' are $(-3, 2)$, and the coordinates of vertex M' are $(3, -2)$.

Describe a sequence of transformations to rectangle JKLM that would result in rectangle J'K'L'M'.

Show your work.

Answer

61

Oliver works at a bookstore. He packed 20 identical paperbacks and 9 identical textbooks in a box. The total mass of the books was 44.4 pounds. After he put 1 more textbook and 5 more paperbacks in the box, the total mass of the books was 51 pounds.

Write a system of equations that can be used to determine p , the mass, in pounds, of one paperback, and t , the mass, in pounds, of one textbook.

Answer

Solve the system of equations to find the two masses.

Show your work.

Mass of one paperback _____ pound(s)

Mass of one textbook _____ pound(s)

STOP