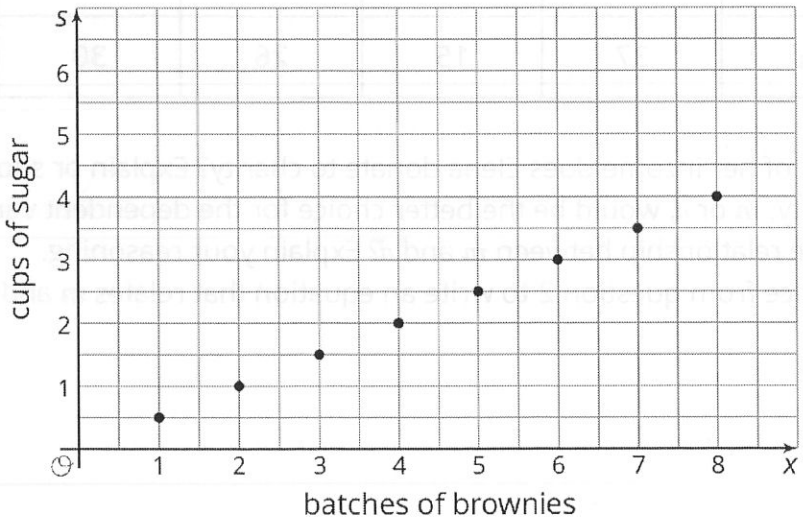
NAME DATE PERIOD

Lesson 10: Ratio Relationships

1. Consider a square of side length s.

   a. Write an equation for the perimeter, P, of the square in terms of s.
   b. List several combinations of s and P for squares of different sizes. Organize your work in a table.
   c. Create a graph that shows P on the vertical axis and plot the combinations for s and P from your table.
   d. Create another graph that shows s on the vertical axis and plot the combinations from your table.
   e. Compare the two graphs. How are they alike? How are they different?

2. The following graph shows some values for the number of cups of sugar, s required to make x batches of brownies.



   a. Complete the table where each column represents the coordinates of a point on the graph.

x	1	2	3	4	5	6	7
s							

   b. Interpret the point $(8,4)$ in terms of the amount of sugar and number of batches of brownies.
   c. Write an equation that shows the amount of sugar in terms of the number of batches.

3. Look back at the problem Painting the Set in the lesson Ratio Relationships.

a. Write an equation that describes the relationship between t and y where t is the independent variable.
b. Write an equation that describes the relationship between t and y where y is the independent variable.
c. Compare the two equations. How are they alike? How are they different?
d. When would the first equation be more useful? When would the second?
e. Lin made a graph for the equation $t = \frac{5}{2}r$. The graph contains the point $(10.5, 26.25)$. Interpret this point in terms of the amounts of paint she will use for the set.

4. Elena donates some money to charity whenever she earns money as a babysitter. The table shows how much money, d, she donates for different amounts of money, m, that she earns.

d	4.44	1.80	3.12	3.60	2.16
m	37	15	26	30	18

a. What percent of her income does Elena donate to charity? Explain or show your work.
b. Which quantity, m or d, would be the better choice for the dependent variable in an equation describing the relationship between m and d? Explain your reasoning.
c. Use your choice from question 2 to write an equation that relates m and d.