

PERFORMANCE TASK 

BLOCK PARTY PLANNING:

Proportional Relationship Performance Task

The Milton Community Center is throwing a block party! Ben and some of his friends volunteer to plan the party. Read each description below. Determine if the relationship is proportional, and explain how you know. If the relationship is proportional, include the constant of proportionality and an equation with x and y to represent the relationship.

- 1.** Ben is planning for how many hamburgers they should have at the block party. The table shows the relationship between the amount of hamburger meat and the number of buns needed.

HAMBURGER MEAT (lb.)	NUMBER OF BUNS
10	30
20	60
30	90
40	120

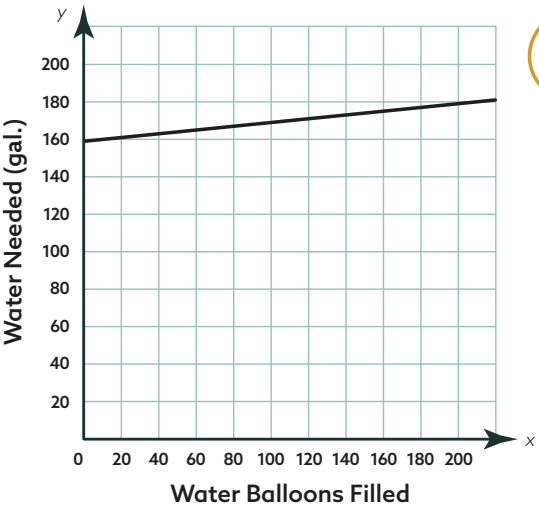


Sample answer: The relationship shown in the table is proportional because the ratio of the number of buns to the amount of hamburger meat is constant. The constant of proportionality is 3. The equation $y = 3x$ represents this relationship.



- 2.** The volunteers plan to set up a splash station with a kiddie pool and water balloons. The graph shows the relationship between the number of water balloons filled and the total amount of water needed to fill the pool and water balloons.

WATER NEEDED TO FILL THE SPLASH STATION



Sample answer: The relationship shown on the graph is not proportional because the graph does not pass through the origin.

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Keep going! Read each description below. Determine if the relationship is proportional, and explain how you know. If the relationship is proportional, include the constant of proportionality and an equation with x and y to represent the relationship.

3. Ben plans to hire a DJ to play music at the block party. The table shows the relationship between the number of hours the DJ works and the total cost.

HOURS WORKED	TOTAL COST
2	\$130
3	\$195
4	\$260
6	\$390

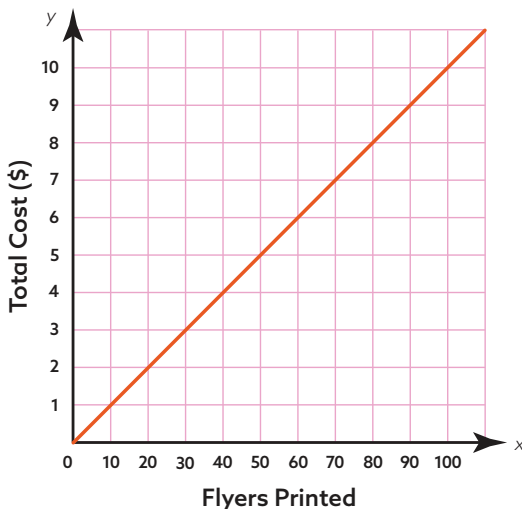


Sample answer: The relationship shown in the table is proportional because the ratio of the total cost to the hours worked is constant. The constant of proportionality is 65. The equation $y = 65x$ represents this relationship.



4. The volunteers want to print and distribute flyers to advertise the block party. The graph shows the relationship between the number of flyers printed and the cost to print them.

FLYER COST



Sample answer: The relationship shown on the graph is proportional because the graph is a straight line that passes through the origin. The constant of proportionality is $\frac{1}{10}$. The equation $y = \frac{1}{10}x$ represents this relationship.

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Keep going! Answer the questions below.

5. The volunteers plan to serve ice cream sundaes at the block party. For every 5 sundaes made, they plan to use 30 ounces of ice cream. The relationship between the number of sundaes made, x , and the ounces of ice cream used, y , is proportional.



a. Write an equation with x and y to represent this relationship.

$y = 6x$

b. Graph the relationship on the coordinate plane.

c. Write the ordered pair of the point on the line that has an x -coordinate of 1:

$(1, 6)$

What does this point mean in terms of the situation?

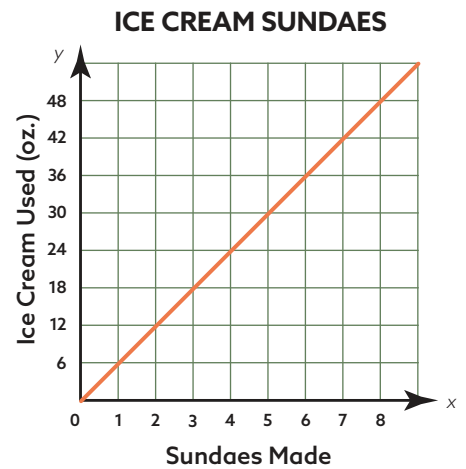
Sample answer: The volunteers will use 6 ounces of ice cream to make 1 sundae.

d. Write the ordered pair of the point on the line that has a y -coordinate of 48:

$(8, 48)$

What does this point mean in terms of the situation?

Sample answer: The volunteers will use 48 ounces of ice cream to make 8 sundaes.



6. The volunteers want to sell raffle tickets. Half of the money raised from raffle ticket sales will go to the winner of the raffle, and the other half will be donated to a local charity. The cost of 8 raffle tickets is \$20. The relationship between the number of raffle tickets purchased, x , and the total cost, y , is proportional.



a. Write an equation with x and y to represent this relationship.

$y = 2.5x$

b. Graph the relationship on the coordinate plane.

c. Write the ordered pair of the point on the line that has a y -coordinate of 5:

$(2, 5)$

What does this point mean in terms of the situation?

Sample answer: The cost of 2 raffle tickets is \$5.

d. Write the ordered pair of the point on the line that has an x -coordinate of 1:

$(1, 2.5)$

What does this point mean in terms of the situation?

Sample answer: The cost of 1 raffle ticket is \$2.50.

