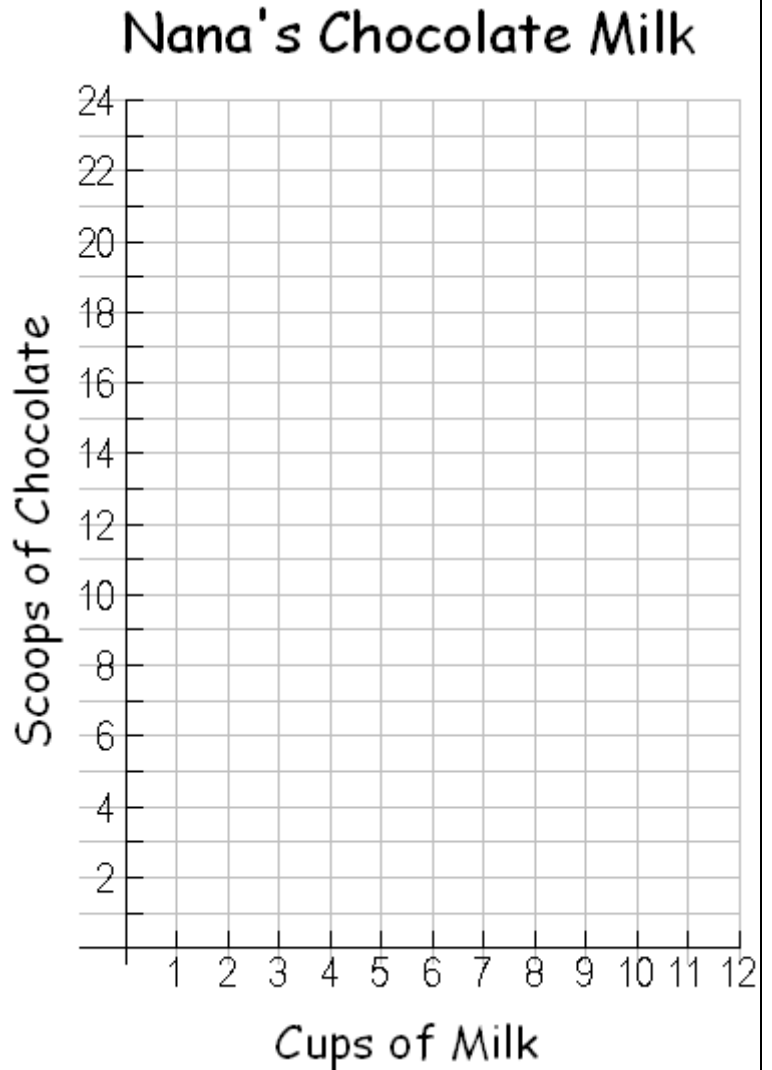## Unit Rate Leading to Slope

Nana likes her milk "just right". This means that for every 2 cups of milk, you must mix in 8 scoops of chocolate powder.   Fill in the missing values in the table, being sure to maintain a proportional relationship.

Cups of Milk (x)	Scoops of Chocolate
2	8
6	
	20
3	
1	
	16

Use the ordered pairs from the table to create a graphical representation of the relationship.

What is the unit rate? What does it mean?

What is the constant of proportionality?

What is the equation (y = kx) of the relationship?

Nana's Chocolate Milk

Scoops of Chocolate vs. Cups of Milk

Slope: _____

$$\text{Slope} = \frac{\text{change}}{\text{change}} = \frac{\rule{2cm}{0.4pt}}{\rule{2cm}{0.4pt}}$$

Find the — between each set of points on the graph by counting vertical and horizontal change.

Between (0, 0) and (1,4)	Between (0, 0) and (3,12)	Between (1, 4) and (5,20)	Between (2, 8) and (6,24)
____	____	____	____

The slope equals _____. What else had this value?

Suppose my favorite lemonade recipe calls for 8 lemons to 12 cups of sugar water. Fill in the missing values in the table, being sure to maintain a proportional relationship.
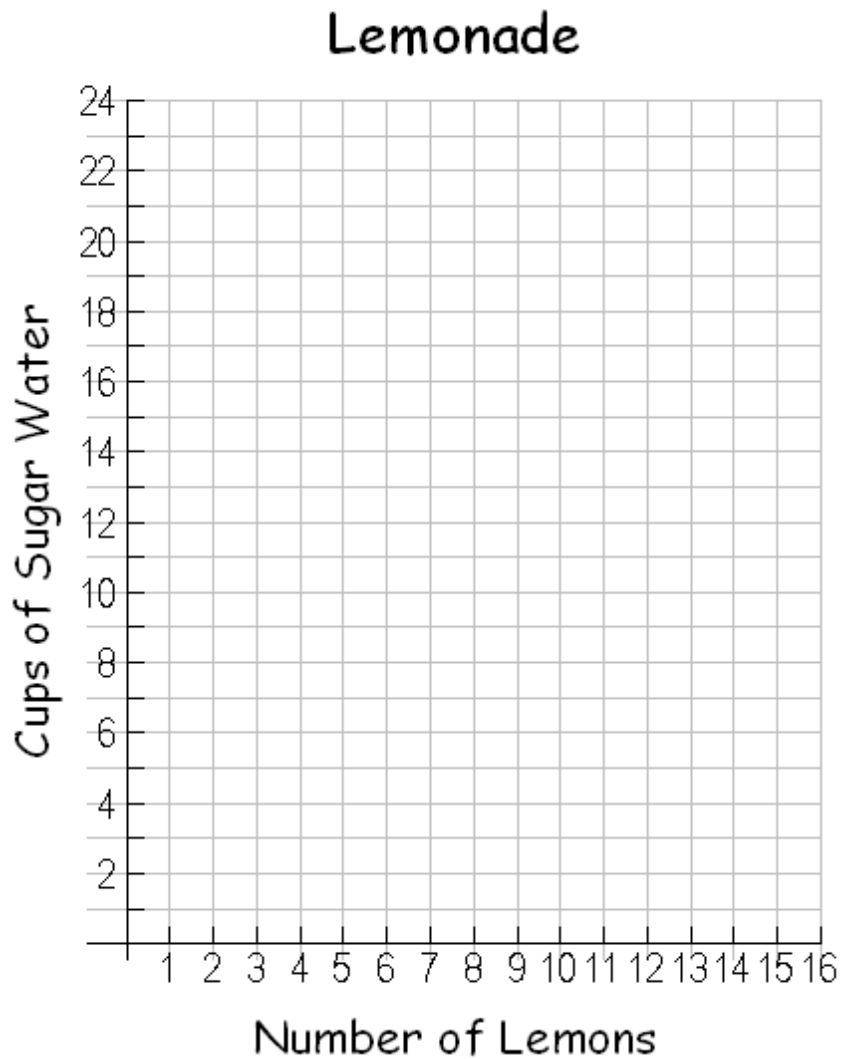
Number of Lemons (x)	Sugar Water (cups)
8	12
16	
	6
2	
	–
	1

Use the ordered pairs from the table to create a graphical representation of the relationship.

What is the unit rate? What does it mean?   (write improper)

What is the constant of proportionality? (write as an improper fraction)

What is the equation (y = kx) of the relationship?

Lemonade

Cups of Sugar Water (y-axis: 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24)

Number of Lemons (x-axis: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16)

Find the —— between each set of points on the graph by counting vertical and horizontal change.

Simplify each answer, but leave fractions improper if applicable.

Between (0, 0) and (2,3)	Between (0,0) and (16,24)	Between (2,3) and (16,24)	Between (4,6) and (8,12)
——	——	——	——

What is the slope of the line between any two points on the graph?

In which ordered pair do you see this in the table?   What special ordered pair is this?

Where do you see the slope in the equation?