

## Comparing Ratios: Lemonade

Sue, Jessie, Kara, and Lorie are all making lemonade to sell at a fundraiser this weekend. Each girl used a different recipe for their lemonade.

	Cups of Water (x)	Lemons (y)
Sue	12 cups	8 lemons
Jessie	15 cups	9 lemons
Kara	6 cups	6 lemons
Lorie	12 cups	9 lemons

*By only observing the numbers, answer the following questions:*

- Who has the strongest lemonade (meaning, whose lemonade will taste the least watery?) Why do you think so?
- Who has the least strong lemonade, or the lemonade that will taste the most watery? Why do you think so?

*Complete the ratio tables for each girl using any amount of water (doubling or less), but keeping the ratio of cups of water to lemons constant. The last row of the ratio table should represent the unit rate for one cup of water. Write the unit rate as a simplified fraction.*

Sue

Water	Lemons
12	8
1	

Jessie

Water	Lemons
15	9
1	

Kara

Water	Lemons
6	6
1	

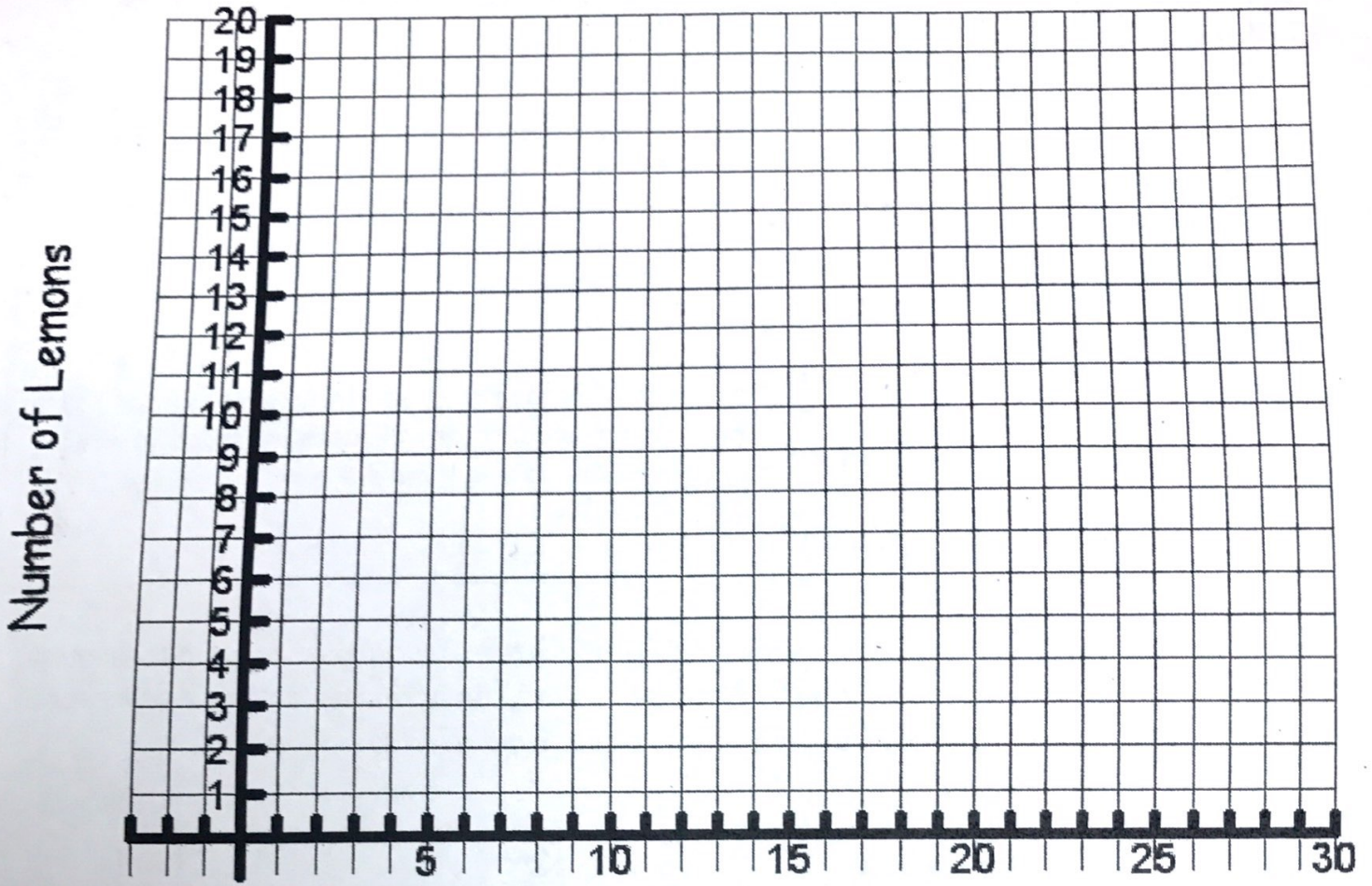
Lorie

Water	Lemons
12	9
1	

*On the back, use the ratio tables above to graph the values as ordered pairs. Use a different color for each girl to graph the individual ordered pairs, and if possible, connect the dots with a line.*

1. By looking at the graphs, how do you know that all of the four lemonade recipes individually represent proportional relationships?
2. What is the ordered pair for the unit rate for Jessie's recipe? What does it mean? Can you draw any conclusions about the strength of her lemonade?

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## Cups of Water

3. Using your graph, compare the graphs vertically at  $x = 20$ , or at 20 cups of water. How many lemons would each recipe use when each girl uses 20 cups of water?

	Water	Lemons
Jessie	20 cups	
Kara	20 cups	
Lorie	20 cups	

Based on this comparison, what conclusions can you make about the strongest lemonade?

4. Using your graph, compare the graphs horizontally at  $y = 12$ , or at 12 lemons. How many cups of water would each recipe need when each girl uses 12 lemons?

	Water	Lemons
Sue		12 lemons
Jessie		12 lemons
Kara		12 lemons
Lorie		12 lemons

Based on this comparison, what conclusions can you make about the strongest lemonade? What conclusions can you make about the weakest?