

Problem Set Sample Solutions

1.

- a. Create a ratio table for making lemonade with a lemon juice-to-water ratio of 1:3. Show how much lemon juice would be needed if you use 36 cups of water to make lemonade.

Lemon juice (cups)	Water (cups)
1	3
2	6
3	9
4	12
12	36

2. How is the value of the ratio used to create the table?

The value of the ratio is $\frac{1}{3}$. If we know the amount of lemon juice, we can multiply that amount by 3 to get the amount of water. If we know the amount of water, we can divide that amount by 3 to get the amount of lemon juice.

3. Ryan made a table to show how much blue and red he mixed to get the shade of purple he will use to paint the room. He wants to use the table to help him make larger and smaller batches of purple paint.

Blue	Red
12	3
20	5
28	7
36	9

- a. What ratio was used to create this table? Support your answer.

The ratio of the amount of blue paint to the amount of red paint is 4:1. I know this because 12:3, 20:5, 28:7, and 36:9 are all equivalent to 4:1.

- b. How are the values in each row related to each other?

In each row, the amount of red paint is $\frac{1}{4}$ times the amount of blue paint. Or the amount of blue paint is 4 times the amount of red paint.

- c. How are the values in each column related to each other?

The values in the columns are increasing using the ratio. Since the ratio of the amount of blue paint to the amount of red paint is 4:1, we have used 4x2:1x2 or 8:2 and repeatedly added to form the table. 8 was added to the entries in the blue column, while 2 was added to the entries in the red column.