

Name: \_\_\_\_\_

Comparing and Scaling - Investigation 2 - Problem 2.1

**J**ulia and Mariah attend summer camp. Everyone at the camp helps with the cooking and cleanup at meal times.

One morning, Julia and Mariah make orange juice for all the campers. They plan to make the juice by mixing water and frozen orange-juice concentrate. To find the mix that tastes best, they decide to test some mixes.

Mix A	
2 cups concentrate	3 cups cold water

Mix B	
5 cups concentrate	9 cups cold water

Mix C	
1 cup concentrate	2 cups cold water

Mix D	
3 cups concentrate	5 cups cold water

A. Which mix will make juice the most "orangey"? Explain.

B. Which mix will make juice the least "orangey"? Explain.

C. Which comparison statement is correct?

5/9 of Mix B is concentrate

5/14 of Mix B is concentrate

D. Assume that each camper will get  $\frac{1}{2}$  cup of juice.

1. For each mix, how many batches are needed to make juice for 240 campers?

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2. For each mix, how much concentrate and how much water are needed to make juice for 240 campers?

Mix W	
5 cups	8 cups
concentrate	cold water

Mix X	
3 cups	6 cups
concentrate	cold water

Mix Y	
6 cups	9 cups
concentrate	cold water

Mix Z	
3 cups	5 cups
concentrate	cold water

F. Use the four apple juice mixes above.

1. Suppose make a single batch of each mix. What fraction of each batch is concentrate?

2. Rewrite your answers for #1 as percents.

3. Suppose you make only 1 cup of Mix W. How much water and how much concentrate do you need?