1.2 Mixing Juice
Comparing Ratios

Every year, the Grade 7 students at Langston Hughes School go on an outdoor education camping trip. During the week-long trip, the students study nature and participate in recreational activities. Everyone pitches in to help with the cooking and cleanup.

This year, Arvin and Mariah were in charge of making orange juice for the campers. They planned to make the juice by mixing water and frozen orange juice concentrate. To find the mix that would taste best, they decided 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

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

Problem 1.2

(A) **1.** Which mix will make juice that is the most "orangey"? Explain your reasoning.

2. Which mix will make juice that is the least "orangey"? Explain your reasoning.

(B) **1.** Isabelle and Doug used fractions to express their reasoning.

Isabelle:	Doug:
$\frac{5}{9}$ of Mix B is concentrate.	$\frac{5}{14}$ of Mix B is concentrate.

Do you agree with either of them? Explain.

2. Max thinks that Mix A and Mix C are the same. Max says "They are both the most 'orangey' since the difference between the number of cups of water and the number of cups of concentrate is 1." Is Max's thinking correct? Explain.

(C) Assume that each camper will get $\frac{1}{2}$ cup of juice. Answer Questions (1) and (2) below for *each* of the four recipes.

1. How many batches are needed to make juice for 240 campers?

2. How much concentrate and how much water are needed to make juice for 240 campers?

(D) For each recipe, how much concentrate is needed to make 1 cup of juice? How much water is needed?

A C E Homework starts on page 19.