

Ratios and Scaling a Fruit Drink Recipe

Name _____

Date _____

The Tropical Punch Recipe

Welcome to the Tropical Punch kitchen! Today we are learning how to scale a recipe using ratios. A ratio compares two quantities. When we scale a recipe up or down, we must keep the ratio of ingredients the same so the drink tastes exactly the same.

Our Tropical Punch recipe uses a ratio of **3 cups of Orange Juice to 2 cups of Pineapple Juice** (3:2). This means for every 3 cups of Orange Juice, we must mix in 2 cups of Pineapple Juice.

Worked Example: Scaling the Recipe

Problem: If you use 12 cups of Orange Juice, how many cups of Pineapple Juice do you need?

Solution:

1. Write the ratio of Orange Juice to Pineapple Juice: $\frac{3}{2}$
2. Set up an equivalent fraction with the new amount: $\frac{3}{2} = \frac{12}{\text{Pineapple}}$
3. Identify the scale factor: Since $3 \times 4 = 12$, multiply the denominator by 4: $2 \times 4 = 8$.

Answer: You need **8 cups** of Pineapple Juice.

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Task 1: Complete the Ratio Table

Scaling the Tropical Punch Recipe

Complete the ratio table below for the Tropical Punch recipe. Then answer the question.

Orange Juice (cups)	Pineapple Juice (cups)	Total Punch (cups)
3	2	5
6	4	10
9		15
	8	20
15	10	

Explain the pattern you used to find the missing numbers in the table. How does the ratio of Orange Juice to Pineapple Juice remain constant?

2. If you want to make a double batch of Tropical Punch using 6 cups of Orange Juice, how many cups of Pineapple Juice do you need?

- ☐ A 2 cups
- ☐ B 4 cups
- ☐ C 6 cups
- ☐ D 10 cups

3. You want to make a large party batch of Tropical Punch that totals 45 cups. Using the ratio 3:2, how many cups of Orange Juice and how many cups of Pineapple Juice will you need? Show your calculations. (2 pts)

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4. A classmate says, 'If I add 2 more cups of Orange Juice and 2 more cups of Pineapple Juice to the recipe, the drink will taste exactly the same because I added the same amount to both.' Is your classmate correct? Explain your reasoning using ratios. (2 pts)
