

Name:

Lesson 1.13: Ratios of Fractions and their Unit Rates

Date:

Class:

1. A group of 6 hikers are preparing for a one-week trip. All of the group's supplies will be carried by the hikers in backpacks. The leader decides that each hiker will carry a backpack that is the same fraction of weight to all the other hikers' weights. This means that the heaviest hiker would carry the heaviest load. The table below shows the weight of each hiker and the weight of the backpack.

Complete the table. Find the missing amounts of weight by applying the same value of the ratio as the first two rows. Hint: convert all ounces to fractions of a pound first (____ ounces = 1 pound) and then find the unit rate!

Hiker's Weight	Backpack Weight	Total Weight (lb.)
152 lb. 4 oz.	14 lb. 8 oz.	
107 lb. 10 oz.	10 lb. 4 oz.	
129 lb. 15 oz.		
68 lb. 4 oz.		
	8 lb. 12 oz.	
	10 lb.	

2. All Domino's restaurants use the same recipes for their pizza, sauce, bread, etc. You are now working at your local Domino's, and listed below are the amounts of meat used on one large meat-lovers pizza:

$\frac{1}{4}$ cup of sausage, $\frac{1}{3}$ cup of pepperoni, $\frac{1}{6}$ cup of bacon, $\frac{1}{8}$ cup of ham, and $\frac{1}{8}$ cup of beef.

What is the total amount of toppings used? _____ cups. Using this information, fill in the table below:

	Order 1	Order 2	Order 3
Sausage (cups)	1		
Pepperoni (cups)			3
Bacon (cups)		1	
Ham (cups)	$\frac{1}{2}$		
Beef (cups)			$1\frac{1}{8}$
TOTAL (cups)			

3. After working at Domino's for a while, you decide to open up your own restaurant, but this one will specialize in Mac n Cheese! The table below shows 6 different-sized pans that could be used to make macaroni and cheese. If the ratio of ingredients stays the same, how might the recipe be altered to account for the different-sized pans?

Noodles (cups)	Cheese (cups)	Pan Size (cups)
		5
3	$\frac{3}{4}$	
	$\frac{1}{4}$	
$\frac{2}{3}$		
$5\frac{1}{3}$		
		$5\frac{5}{8}$

4. The ratio of the number of miles run to the number of miles biked is equivalent for each row in the table.
- a. Complete the table.

Distance Run (miles)	Distance Biked (miles)	Total Amount of Exercise (miles)
		6
$3\frac{1}{2}$	7	
	$5\frac{1}{2}$	
$2\frac{1}{8}$		
	$3\frac{1}{3}$	

- b. What is the relationship between distances biked and distances run?