

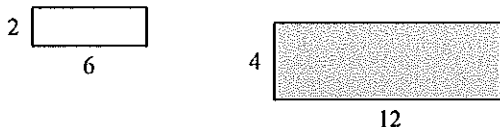
Chapter 5 Oringinal**Other**

1. **Application** In this task, your class is planning for an upcoming party. Fruit drink will be served as a refreshment, and you will help mix the drink in a five-gallon cooler. Several parents have sent in directions on how to mix fruit drink. Their recipes are compiled in the following table.

Ingredients	Recipe A	Recipe B	Recipe C	Recipe D	Recipe E
Water (gallons)	3	3	4	2	2
Fruit Drink (packets)	4	7	8	5	4
Sugar (cups)	3	6	10	3	4

- Bill says he likes fruit drink to be extra sweet. Noreen likes her fruit drink to be more sour. Which recipe do you think each student would prefer? Explain your reasoning.
- To decide which recipe to use, you decide to make one gallon of each for the students to taste. Describe how to make one gallon of each recipe.
- Your teacher says that you shouldn't use a recipe that is too sweet or too sour for the party, so that the majority of students will like it. She wants you to use a recipe that is balanced among the five recipes. Choose the best recipe above, or create one of your own. Explain your reasoning.
- On the day of the party, you will add $1\frac{1}{2}$ gallons of ice to the cooler to make the drink cold. Estimate how much water, fruit drink mix, and sugar should be mixed in the cooler. Is there any other factor that might cause you to adjust your measurements?
- If the cooler sits for too long before the party, and all the ice melts, the drink will be too watered down to taste good. How much fruit drink mix and sugar should be mixed in to remake the drink according to the originally selected recipe?

2. **Extended Response** Use the white and shaded rectangles.
- Find the ratio of the length of the white rectangle to the length of the shaded rectangle. Repeat this for width, perimeter, and area.
 - Compare and contrast your ratios in part (a).



3. **Application** You and your friend both love comic books. Each week your parents give you enough money to buy 11 comics. Each week, you give your friend 3 of your comics after you read them.
- Make a ratio table to represent the number of comics you and your friend will have each week.
 - After a few weeks, you have many more comics than your friend has, so you decide to even things out. You decide to give half of your comics to your friend, since you think that giving half of your comics should make things even.

However, after you give the comics to your friend, your friend ends up with 12 more comics than you. Where is the error in your thinking? Explain.
 - When you decided to even things out, how many weeks had gone by since you first began collecting comics? Explain or show your work.
 - Instead of giving half of your comics to your friend, how many comics should you give to your friend so that you both will have the same amount? Justify your response.
4. **Extended Response** A runner completed a 4.4 mile race in 28 minutes.
- Find the unit rate $\frac{\text{miles}}{\text{minute}}$.
 - Find the unit rate $\frac{\text{minutes}}{\text{mile}}$.
 - Is the unit rate in part (a) or the unit rate in part (b) used more often?

Name: _____

ID: A

5. **Application** You and a friend start a lawn mowing business together during the summer. You record the work you do in the tables below.

You	Hours Worked	Yards Mowed
Sunday	5	2
Monday	3	1
Tuesday	5	5
Wednesday	2	1
Thursday	4	2
Friday	3	1
Saturday	7	5

Your Friend	Hours Worked	Yards Mowed
Sunday	5	3
Monday	8	7
Tuesday	13	7
Wednesday	11	11
Thursday	7	4
Friday	3	2
Saturday	6	4

- During which day, or days, of the week did you take the most time per yard? Your friend? Does this reflect the day you and your friend worked your fastest or your slowest? Explain how you reached your conclusion.
 - During which day, or days, of the week were you able to mow the most yards per hour? Your friend? Does this reflect the day you and your friend worked your fastest or your slowest? Explain how you reached your conclusion.
 - You and your friend plan on working all weekend. You both can work for 12 hours each day. How many total yards should the two of you plan on mowing? Which unit rate do you find more useful in calculating your answer, hours per yard or yards per hour? Explain why.
 - If you and your friend work together mowing a yard, how long do you estimate it will take you? Which unit rate do you find more useful in calculating your answer, hours per yard or yards per hour? Explain why.
6. **Extended Response** The secret to making a good vinaigrette dressing is in the ratio of oil to vinegar in the recipe. Recipe A calls for 5 cups of oil and 7 cups of vinegar. Recipe B uses 3 cups of oil and 5 cups of vinegar.
- Create a ratio table to determine which dressing will taste more like vinegar.
 - Graph the ordered pairs from the tables to determine which dressing will taste more like vinegar.
 - Oil contains many more calories than vinegar. Which recipe should a person on a diet use on their salad? Explain your reasoning.

Name: _____

ID: A

7. Complete the ratio tables and graph the ordered pairs from the tables. What can you conclude?

Ferry	
Time (hrs)	Distance (miles)
4	36
8	
12	
16	

Sailboat	
Time (hrs)	Distance (miles)
2	12
4	
6	
8	

Name: _____

ID: A

8. **Application** A restaurant owner wants to put in a salad bar for his customers. He researched the most popular salad ingredients, and found the chart below.

Popular Salad Ingredients		
Ingredient	Popularity (% of people surveyed)	Average serving size (oz)
Lettuce	87	4.9
Cucumbers	56	2.4
Bell Peppers	45	2.1
Cheese	54	1.5
Tomatoes	35	1.7
Corn	26	0.5
Olives	38	0.6
Dressing	95	2.2
Broccoli	42	1.1
Onions	15	0.6
Croutons	49	0.4
Carrots	62	1.6

He asked his wholesale distributor for the prices of the ingredients, and they sent him the price list below.

Sunnyside Wholesale Distributors		
Price	Amount	Description
\$9.43	1 pkg.	Bell Peppers, 80 oz
\$9.48	2 bags	Broccoli, florets, 24 oz each
\$1.66	1 bag	Carrots, grated, 16 oz
\$11.88	1 bag	Cheese, shredded, 32 oz
\$12.89	1 case	Corn, 12 cans (8 oz each)
\$1.28	1 bag	Croutons, 16 oz
\$4.98	8 pieces	Cucumbers, 5 oz each
\$5.59	1 can	Dressing, 48 oz can
\$17.49	1 case	Lettuce, 12 bags (16 oz each)
\$19.69	1 case	Olives, 24 cans (8 oz each)
\$7.89	1 case	Onions, 24 pieces (10 oz each)
\$7.53	1 pkg.	Tomatoes, 12 pack (20 oz)

- Select 8 ingredients for the salad bar. Explain the reasoning behind your choices.
- Calculate the cost of an average salad made with the 8 selected ingredients. Show or explain your work.
- If the restaurant owner plans to charge by the ounce, what price per ounce should he charge if he wants his profit to cost ratio to be 2:1?
- A nearby restaurant charges its customers a flat rate of \$3.46 per salad. Will the salad you have designed draw in customers at the price per ounce calculated above? If so, justify your answer. If necessary, adjust your salad ingredients and price per ounce to be competitive to the nearby restaurant.

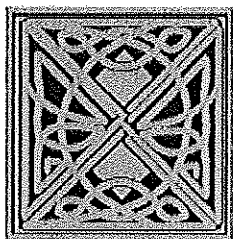
9. **Extended Response** Jacob and Angela enjoy working out together. They decide to see who can do more abdominal crunches within a given time.

a. Complete the ratio tables to show how many crunches Jacob and Angela did in the time shown.

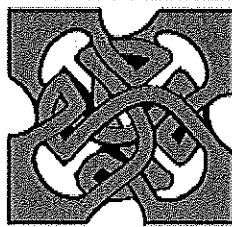
Jacob	
Minutes	Number of crunches
2	40
4	
6	
8	
10	

Angela	
Minutes	Number of crunches
3	90
5	
7	
9	
11	

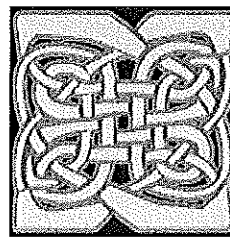
- b. Graph the data in the tables on a coordinate plane.
- c. What is Jacob's unit rate (crunches per minute)? What is Angela's unit rate? Show how you calculated the unit rates.
- d. Charlie can do 9 crunches in 30 seconds. What is his unit rate?
- e. Which of the three people is the fastest? Explain your reasoning.
10. **Extended Response** The percent of a wall covered by the mural painted by each grade is shown.



Grade 6 40%



Grade 7 45%



Grade 8 15%

- a. Write the percents as fractions in simplest form.
- b. About how many times larger is the 6th grade mural than the 8th grade mural?
- c. Compared to the 8th grade mural, is the 6th grade mural in the figure the correct size? Explain your reasoning.

11. **Extended Response** You have a coupon for 30% off the sale price of any item in the store.

Store Items	Regular Price	Sale
Cell phone	\$210	40% off
MP3 player	\$70	25% off
Digital camera	\$385	10% off

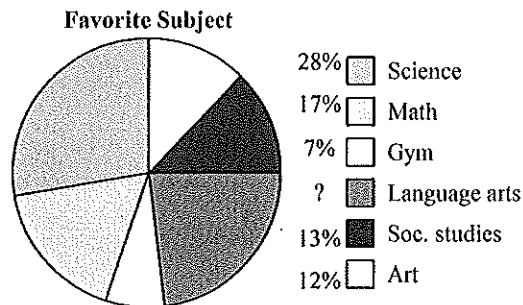
- What is the sale price of the digital camera?
- What is the price of the digital camera after using the coupon?
- Is taking 40% off the regular price the same as taking 10% off the regular price and then 30% off the sale price? Explain your reasoning.

12. **Extended Response** A company increases the size of a bag of dog food.

	Price	Size
Old bag	\$20.18	287 ounces
New bag	\$30.58	23% larger

- About how many ounces are in the new bag?
- The new bag costs \$10.40 more. Did the cost increase by the same percent as the size?
- Does the new cost seem *fair*? Explain.

13. **Extended Response** The circle graph shows the results of a survey of 714 students.



- Estimate how many more students preferred science than gym and art combined.
- Estimate how many students chose language arts. Explain how you found your answer.