September 9th

Agenda:

1) Bell Ringer: p. 10 (8-10)

2) go over homework

3) Unit 1: Lesson 2: Proportional Relationships

EQ: How do you know if two quantities are proportional?

4) Homework: lesson 2 problems 1-2 (p. 14)

Sep 7-12:49 PM

Problem Set

1. Find each rate and unit rate.
   a. 420 miles in 7 hours
   b. 360 customers In 30 days
   c. 40 meters in 16 seconds
   d. $7.96 for 5 pounds

2. Write three ratios that are equivalent to the one given: 18 right-handed students for every 4 left-handed students.

3. Mr. Rowley has 16 homework papers and 14 exit tickets to return. Ms. Rivera has 64 homework papers and 60 exit tickets to return. For each teacher, write a ratio to represent the number of homework papers to number of exit tickets they have to return. Are the ratios equivalent? Explain.

Rowley $\frac{16}{14}$ $\times 4 = \times 4$

Rivera $\frac{64}{56}$ ~~60~~

Sep 4-2:46 PM

4. Jonathan's parents told him that for every 5 hours of homework or reading he completes, he will be able to play 3 hours of video games. His friend Lucas's parents told their son that he can play 30 minutes for every hour of homework or reading time he completes. If both boys spend the same amount of time on homework and reading this week, which boy gets more time playing video games and how do you know?

5. At Euclid Middle School, of the 30 girls who tried out for the lacrosse team, 12 were selected and of the 40 boys who tried out, 16 were selected. Are the ratios of number of students on the team to number of student trying out the same for both boys and girls? How do you know?

J

$\frac{5}{3} \times 2 \quad \frac{10}{6}$

$\frac{1}{\frac{1}{2}} \times 10 \quad \frac{10}{5}$

HW	video
5hr	3 hrs
1	30 min = 1/2 hr

$\frac{10}{6}$

$\frac{1}{\frac{1}{2}} \times 10 = \frac{10}{5}$

drinks per $

price per drink

6. Devon is trying to find the unit price on a 6-pack of energy drinks on sale for $2.99. His sister says that at that price, each energy drink would cost just over $2.00. Is she correct and how do you know? If she is not, how would Devon's sister find the correct price?

$\frac{2.99}{6} = \frac{3 \div 3}{6 \div 3} \left(\frac{1}{2}\right)$ .50

7. Each year Lizzie's school purchases student agenda books, which are sold in the school store. This year, the school purchased 350 books at a cost of $1,137.50. If the school would like to make a profit of $1,500 to help pay for field trips and school activities, what is the least amount they can charge for each agenda book? Explain how you found your answer.

$\frac{3}{6} = \frac{1}{2}$

$\frac{6}{3} = 2$

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"Unit Price Project"

Name: _____ date: _____
Mrs. Bennett Math 7

Student Task Sheet

In the ratios and proportions unit we have been studying, you have learned to find unit rates and unit prices. You have also learned to compare unit prices.

In this assignment I am asking you to calculate the unit price of 10 different household items. Display your items on a poster. Next to each item you should include your calculations to find each unit price. Your poster should include a title as well. To go along with your poster you must write a paragraph detailing your findings? Some things you may want to include in your paragraph are which item had the lowest unit price and which item had the highest unit price. You could also compare different brands of the same item. For example, maybe Tide detergent is less expensive per ounce than All detergent. You may want to write about the usefulness of comparing unit prices.

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You will be graded on:

Completion:

- Poster with title and 10 objects
- Calculations are included for each item
- Paragraph summarizing findings

Mathematical Concepts:

- Proportions showing all calculations
- Correct mathematical work
- Paragraph correctly compares items

Presentation:

- Title
- Labels
- Proportions are shown
- Paragraph has no spelling or grammatical errors

Timeliness:

- Poster is due 2 weeks from today
- Due date __/ ___/ ___

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Lesson 2: Proportional Relationships

Classwork

Example 1: Pay by the Ounce Frozen Yogurt!

A new self-serve frozen yogurt store opened this summer that sells its yogurt at a price based upon the total weight of

.40 .40 .40 .40

5 ÷ 12.5 4 ÷ 10 2 ÷ 5 3.20 ÷ 8

Weight (ounces)	12.5	10	5	8
Cost ($)	5	4	2	3.20

Cost is proportional to Weight.

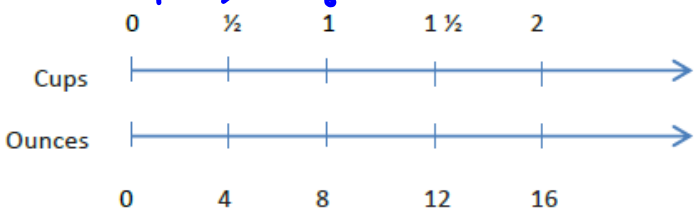
price per ounce ÷

weight × .40 = cost

Example 2: A Cooking Cheat Sheet!

In the back of a recipe book, a diagram provides easy conversions to use while cooking.

$4 \div \frac{1}{2} = 8$ $8:1:8$



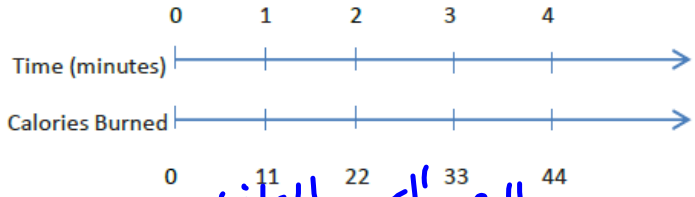
Ounces is proportional to Cups.

8 ounces per cup

Exercise 1

During Jose's physical education class today, students visited activity stations. Next to each station was a chart depicting how many Calories (on average) would be burned by completing the activity.

Calories burned while Jumping Rope



11÷1=11 22÷2=11 33÷3=11

a. Is the number of Calories burned proportional to time? How do you know?

yes → because there is a constant rate

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b. If Jose jumped rope for 6.5 minutes, how many calories would he expect to burn?

$6.5 \times 11 = 71.5$ cal.

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Example 3: Summer Job

Alex spent the summer helping out at his family's business. He was hoping to earn enough money to buy a new $220 gaming system by the end of the summer. Halfway through the summer, after working for 4 weeks, he had earned $112. Alex wonders, "If I continue to work and earn money at this rate, will I have enough money to buy the gaming system by the end of the summer?"

To check his assumption, he decided to make a table. He entered his total money earned at the end of week 1 and his total money earned at the end of Week 4.

Week	0	1	2	3	4	5	6	7	8
Total Earnings	0	$28	56		$112				

a. Work with a partner to answer Alex's question.

b. Are Alex's total earnings proportional to the number of weeks he worked? How do you know?

yes
the Rate was constant

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Lesson Summary:

Measures in one quantity are proportional to measures of a second quantity if there is a positive number k so that for every measure x of the first quantity, the corresponding quantity y is given by kx. The equation $y = kx$ models this relationship.

A **proportional relationship** is one in which the measures of one quantity are proportional to the measures of the second quantity.

In the example given below, the distance *is proportional to* time since each measure of distance, y, can be calculated by multiplying each corresponding time, t, by the same value, 10. This table illustrates a *proportional relationship* between time, t, and distance, y.

Time (hrs), t	0	1	2	3
Distance (km), y	0	10	20	30

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Problem Set p. 14

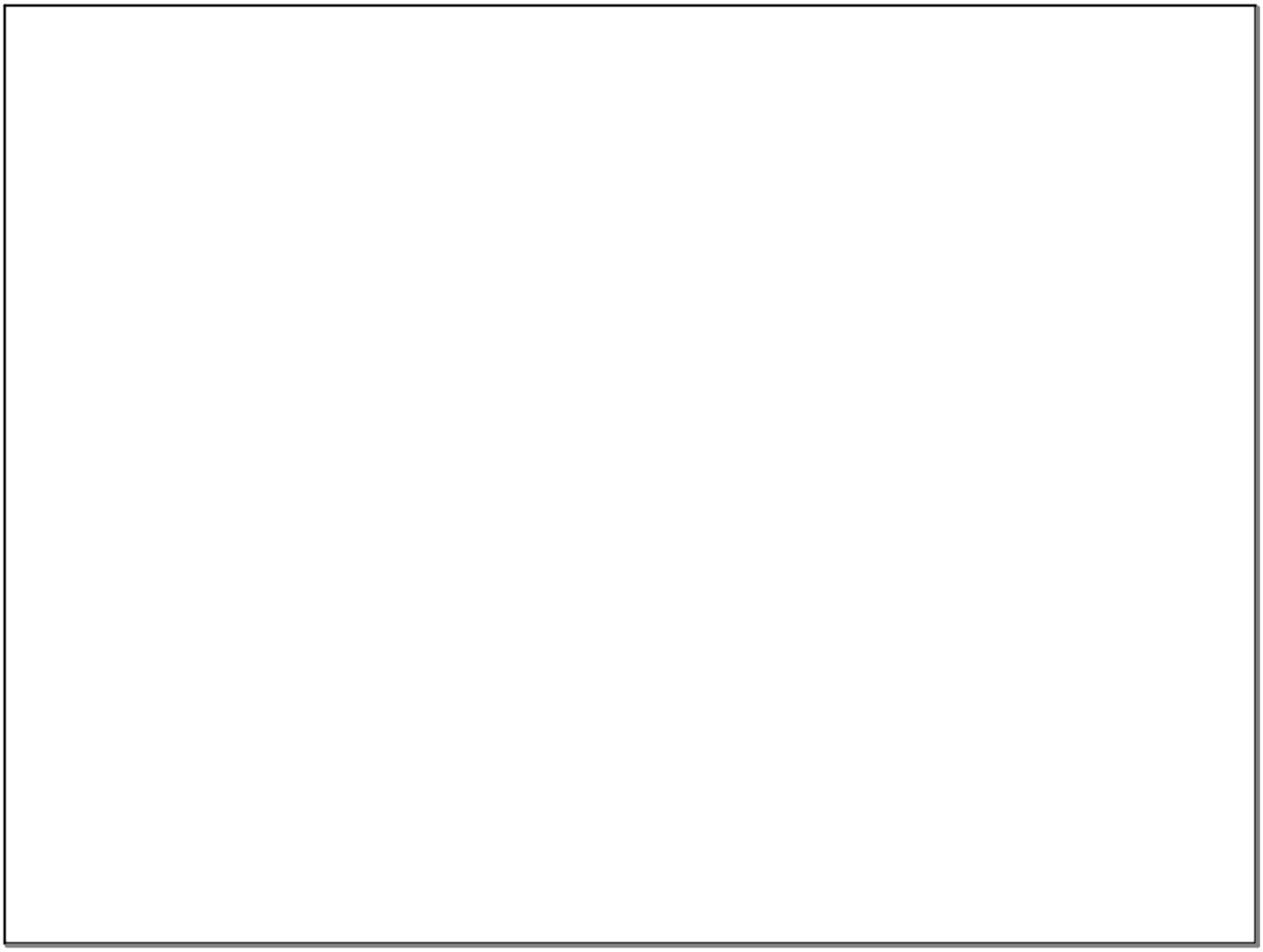
1. A cran-apple juice blend is mixed in a ratio of cranberry to apple of 3 to 5.
   a. Complete the table to show different amounts that are proportional.

Amount of Cranberry	3		
Amount of Apple	5		

   b. Why are these quantities proportional?

2. John is filling a bathtub that is 18 inches deep. He notices that it takes two minutes to fill the tub with three inches of water. He estimates it will take ten more minutes for the water to reach the top of the tub if it continues at the same rate. Is he correct? Explain.

min	in
2	3
4	6...
12	18 ?? yes or no



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