Homework

Unit 3 · Lesson 5: Proportional Relationships: Tables

Name: _____

Date: _____

Objective: *I will compare ratios in a table to determine proportional relationships.*

Vocabulary

Equivalent Ratios: ratios, in fraction form, that are equivalent

Ratios 5:2 and 10:4 are equivalent because $\frac{5}{2}=\frac{10}{4}$.

Proportional Relationship: a relationship between two equal ratios

Apples are sold in bags of 5 for $2. To buy 20 apples, what would be the cost (C)?

$$\frac{5 \text{ apples}}{2 \text{ dollars}}=\frac{20 \text{ apples}}{C \text{ (cost)}}$$

Multiply the numerator and denominator by 4.

Cost = $8

Apples	Cost
5	2
20	8

Steps:

Testing for Equivalent Ratios:

1. Identify the form of the ratio.
2. Convert ratio pairs in the table to fractions if needed. (*Use the first quantity as the denominator*).
3. Determine if the fractions are equivalent.
4. If equivalent, there is a proportional relationship.

Example # 1

Directions: Read and solve.

The cost of various sizes of honey is given in the table below. Find the ratio of the cost to ounces for each item.

Size	Ounces (x)	Cost (y)
Small	6 oz.	$2.40
Medium	12 oz.	$4.80
Large	18 oz.	$9.00

Answer:

- The ratios have the form $\frac{\$}{\text{oz.}}$, so the ratios should be:
- Small: $\frac{\$2.40}{6 \text{ oz.}}$
- Medium: $\frac{\$4.80}{12 \text{ oz.}}$
- Large: $\frac{\$9.00}{18 \text{ oz.}}$

Example # 2

Use the ratios you created in Problem #1 for the following task:

Compare the ratios and identify the ratios that have a proportional relationship. Justify your answer.

Answer:

Identify the unit rate by dividing the numerator by the denominator.

- Small: $\frac{2.40}{6}=\frac{0.4}{1}$
- Medium: $\frac{4.80}{12}=\frac{0.4}{1}$
- Large: $\frac{9.00}{18}=\frac{0.5}{1}$
- Since the Small and the Medium have the unit rate $\frac{0.4}{1}$, I can conclude that they are proportional because the rates are equivalent.

Homework

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Directions: Write the ratios in word and fraction form and identify if proportional.

1. The table shows the amount of time it took Jon to do a given number of math problems on different days.

Days	Time	# of Problems
Mon	30 min	10
Tues	20 min	15
Thurs	21 min	7

2. The table shows the height and base lengths of several right triangles.

	Triangle A	Triangle B	Triangle C
Height	6	10	35
Base	3	4	14

3. The table shows the amount of money several people earned for working a certain number of hours.

	Hours	Earnings
Fred	10	$150
Ted	12	$252
Ned	3	$45

4. The table shows the amount of time it took Ron to do a given number of math problems on different days.

Day	Time	# of Problems
A	20 min	10
B	30 min	15
C	14 min	7

5. The table shows the lengths and widths of several rectangles.

	Length	Width
Rectangle A	20	15
Rectangle B	48	36
Rectangle C	21	18

6. The table shows the amount of money several people earned for working a certain number of hours.

	Lillie	Millie	Tillie
Hours	10	7	14
Earnings	$120	$84	$168