Lesson 9: Tables of Equivalent Ratios

Classwork

Example 1

To make paper mache, the art teacher mixes water and flour. For every two cups of water, she needs to mix in three cups of flour to make the paste.

Find equivalent ratios for the ratio relationship 2 cups of water to 3 cups of flour. Represent the equivalent ratios in the table below:

Cups of Water	Cups of Flour

Write **2 equations** with numbers and variables to represent the relationship between the 2 quantities.

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Example 2

Javier has a new job designing websites. He is paid at a rate of $700 for every 3 pages of web content that he builds. Create a ratio table to show the total amount of money Javier has earned in ratio to the number of pages he has built.

Total Pages Built								
Total Money Earned								

Javier is saving up to purchase a used car that costs $4,200. How many web pages will Javier need to build before he can pay for the car?

Write **2 equations** with numbers and variables to represent the relationship between the 2 quantities.

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Exercise 1

Spraying plants with cornmeal juice is a natural way to prevent fungal growth on the plants. It is made by soaking cornmeal in water, using two cups of cornmeal for every nine gallons of water. Complete the ratio table to answer the questions that follow.

Cups of Cornmeal	Gallons of Water

a. How many cups of cornmeal should be added to 45 gallons of water?

b. Paul has only 8 cups of cornmeal. How many gallons of water should he add if he wants to make as much cornmeal juice as he can?

c. What can you say about the values of the ratios in the table?

Write **2 equations** with numbers and variables to represent the relationship between the 2 quantities.

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Exercise 2

James is setting up a fish tank. He is buying a breed of goldfish that typically grows to be 12 inches long. It is recommended that there be 1 gallon of water for every inch of fish length in the tank. What is the recommended ratio of gallons of water per fully-grown goldfish in the tank?

Complete the ratio table to help answer the following questions:

Number of Fish	Gallons of Water

a.   What size tank (in gallons) is needed for James to have 5 full-grown goldfish?

b.   How many fully-grown goldfish can go in a 40-gallon tank?

c.   What can you say about the values of the ratios in the table?

Write **2 equations** with numbers and variables to represent the relationship between the 2 quantities.
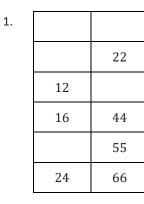
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> **Lesson Summary**
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> A ratio table is a table of pairs of numbers that form equivalent ratios.

Problem Set

Assume each of the following represents a table of equivalent ratios. Fill in the missing values. Then choose one of the tables and create a real-world context for the ratios shown in the table.

1.

	22
12	
16	44
	55
24	66

2.

	14
15	21
25	35
30	

3.

	34
	51
12	
15	85
18	102