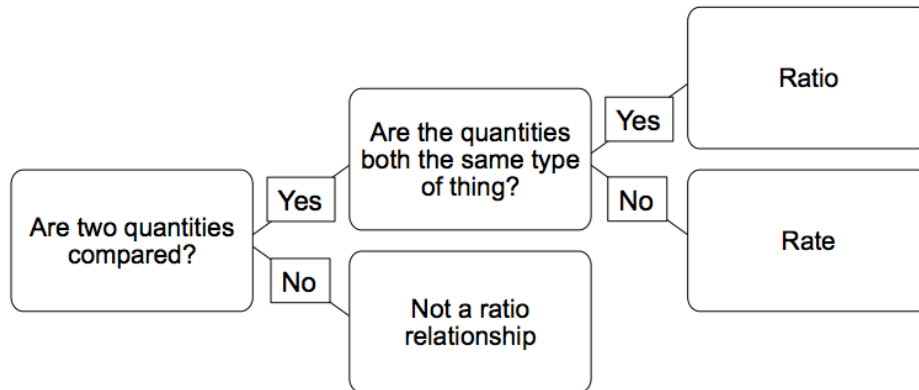


Name: _____

Section: _____

Understanding the Difference Between Ratios and Rates

Hasan created a flow chart to help him determine whether or not the relationship he had is a ratio, rate, or neither.



1.) Use Hasan's flow chart to determine whether each of the following situations is a ratio, a rate, or neither, then explain your reasoning:

- a.) 65 game pieces to each game
- b.) 4 girls for every 7 boys
- c.) 6 elephants and 3 tigers

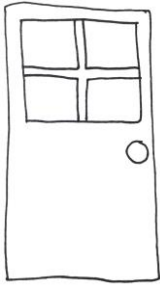
2.) List as many similarities and differences as you can between ratios and rates.

Similarities	Differences

3.) Gina thinks that if all rates are ratios, then all ratios are also rates. Create an example of a ratio that is not a rate, and use it to explain Gina's mistake to her.

4.) Sometimes the same ratio can be seen as a ratio or as a rate, depending on the situation. Take this ratio: **4 windows : 1 door.**

Kaitlyn sees the ratio like this:



Giuseppe sees the ratio like this:



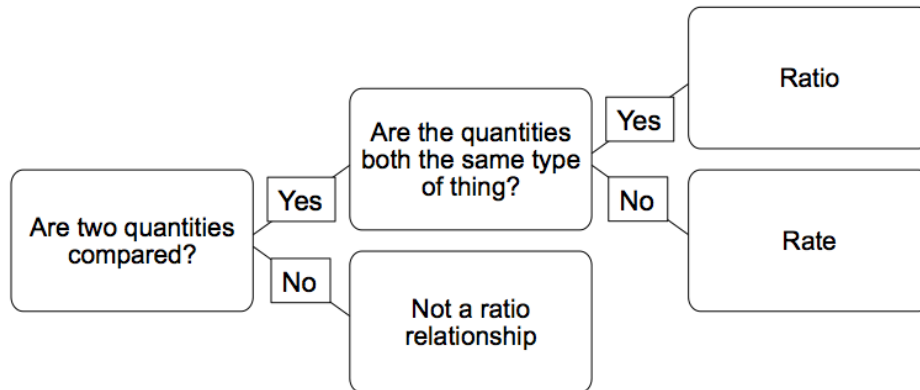
Which of these situations is only a ratio relationship, and which is also a rate relationship? Explain your answer.

5.) Create 2 or more situations where a ratio could be seen as a rate, or just as a ratio. Write the ratio, and draw a picture or explain what types of situation would make the relationship a rate, and a non-rate ratio.

Understanding the difference between Ratios and Rates

Answer Key

Hasan created a flow chart to help him determine whether or not the relationship he had is a ratio, rate, or neither.



1.) Use Hasan’s flow chart to determine whether each of the following situations is a ratio, a rate, or neither, then explain your reasoning:

a.) 65 game pieces to each game Rate

It’s a relationship using division, and “pieces” are a different type of thing from “games”

b.) 4 girls for every 7 boys Ratio

“For every” implies division, and girls and boys are the same type of thing (people)

c.) 6 elephants and 3 tigers Neither

“And” implies an addition relationship, not a division relationship

2.) List as many similarities and differences as you can between ratios and rates.

Similarities (possible answers)	Differences (possible answers)
Use division to compare quantities Can have different values expressing the same relationship Are both ratios Can be used to make objects easier to compare	Ratios compare like quantities while rates compare unlike quantities Rates are a type of ratio but ratios are not a type of rate Rates help compare speeds and unit prices

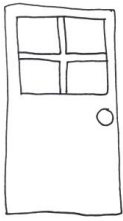
3.) Gina thinks that if all rates are ratios, then all ratios are also rates. Create an example of a ratio that is not a rate, and use it to explain Gina’s mistake to her.

Example: 2 eggs : 4 cups of flour

This is a ratio because it compares to things, eggs and flour, using division. It is not a rate because eggs and flour are the same type of thing – they’re both ingredients that you would use in a recipe. It is true that all rates are ratios because rates are a special type of ratio that compare two things from different categories. But not all ratios compare two different types of things. The different types of things is the important piece that makes a ratio a rate.

- 4.) Sometimes the same ratio can be seen as a ratio or as a rate, depending on the situation.
Take this ratio: **4 windows : 1 door.**

Kaitlyn sees the ratio like this:



Giuseppe sees the ratio like this:



Which of these situations is only a ratio relationship and which is also a rate relationship? Explain your answer.

Kaitlyn sees a rate relationship: 4 windows as a part of a bigger object, a door.

Giuseppe sees a ratio relationship that isn't a rate, since both doors and windows are in the same category, parts of a house.

- 5.) Create 2 or more situations where a ratio could be seen as a rate, or just as a ratio. Write the ratio, and draw a picture or explain what types of situation would make the relationship a rate, and a non-rate ratio.

Example answers:

58 liters of gas: 1 car

As a rate: how much gas a car holds (gas as a fuel and car as a vehicle).

As a ratio: part of a list of things I bought today.

12 dogs : 7 people

As a rate: the number of dogs that people own (dogs as pets and people as owners)

As a ratio: both dogs and people are animals, and could be seen as the living things in one household, one community, etc.