

Name _____

Pre-Algebra Notes
Week 4: Lesson 6.1

Ratio and Rates

Math Vocab.

1. ratio - use of division to compare two quantities

3 ways to write ratios

$$\frac{a}{b}$$

a to b

a : b

- **a** will always be first stated quantity
- **b** will always be second stated quantity
- always simplify if possible (don't convert)

Examples

1. Writing Ratios

An archer shoots 60 arrows at a target, with 44 arrows hitting the scoring area and 16 missing the scoring area.

Write the ratio in three ways

a. The number of hits to the number of misses

b. The number of hits to the number of shots

To compare two ratios, you can write both ratios as fractions or as decimals

equivalent ratio- two or more ratios that have the same value

Bird	Wing length (cm)	Average wing width (cm)
White-tailed eagle	209	30
European jay	47	12
Black-headed gull	83	8

The ratio comparing the length of a bird's wings to the average width of the bird's wings is the bird's aspect ratio. Order the birds in the table from the greatest aspect ratio to the least

White-tailed eagle:

European jay:

Blackheaded gull:

rates- a _____ of two quantities measured in different units

unit rate- a rate that has a denominator of _____ when expressed in fraction form

expressed as per - "for every"

3. Finding Unit Rate

You host a party for 12 people. The food and drinks for the party cost \$66. What is the cost per person?

4. Writing an Equivalent Rate

A jet flies 540 miles per hour. Write its rate in miles per minute.

5. Using Equivalent Rates

Engineers designed a miniature robot that can crawl through pipes and vents that humans can't access. The robot travels 1 inch in 3 seconds. How many feet does the robot travel in 4 minutes?

Extra Practice