

Unit 6: Ratios and Unit Rates

I can write, compare, and analyze ratios.

Ratio: compares two numbers

Ex: A class has 12 girls and 18 boys. What is the ratios of boys to girls?

- 1) $18:12$ or $3:2$ 2) $\frac{18}{12}$ or $\frac{3}{2}$ 3) 18 to 12 or 3 to 2

Example 1:

There are 7 basketball players, 8 volleyball players, 12 football players, and 9 tennis players at an athletic event.

- a) What is the ratio of football players to basketball players?
b) What is the ratio of tennis players to volleyball players?
c) What is the ratio of tennis players to football players?
d) What is the ratio of basketball players to all athletes?

$\frac{12}{7}$
 $9:8$
 $\frac{9}{12} = \frac{3}{4}$
7 to 36

Example 2 (You Try):

The current movies playing at the theater include 2 romance, 6 comedies, 3 dramas, and 4 thrillers.

- a) What is the ratio of romance to thrillers?
b) What is the ratio of dramas to comedies?
c) What is the ratio of thrillers to comedies?
d) What is the ratio of dramas to all types of movies?

$\frac{1}{2}$
 $1:2$
2 to 3
 $\frac{1}{5}$

Example 3:

There are 30 students in a class. Ten of the students are girls. What is the boy-girl ratio of the class?

$$30 - 10 = 20 \text{ boys} \quad 20:10 = 2:1$$

Example 4 (You Try):

Marie saved \$51. On Wednesday she spent \$8 of her savings. What ratio represents the portion of her total savings that she still has left?

$$51 - 8 = 43 \quad 43:51$$

Ratios in Real Life:

Use equivalency

Example: You buy 12 apples for \$9... 12:9

This means 4 apples for every \$ 3.

How much would 36 apples cost? \$27

To Compare Ratios: Change to decimals

1) A pet supply chain called Pet City has 15 hamsters and 20 gerbils for sale at its Clarksville location. At its Arlington location there are 7 hamsters and 14 gerbils. Which location has a higher ratio of hamsters to gerbils?

P.C.C. P.C.A.
 $\frac{15}{20}$ $\frac{7}{14}$ Clarksville
 0.75 > 0.5

2) Preston went on a two-day fishing trip. On the first day, he caught 15 catfish and 3 salmon. On the second day, he caught 18 catfish and 4 salmon. On which day of the fishing trip did Preston catch a lower ratio of catfish to salmon?

Day 1 Day 2
 $\frac{15}{3}$ $\frac{18}{4}$ Day 2
 5 > 4.5

3) An auto dealership sells minivans and sedans. In January, they sold 5 minivans and 20 sedans. In February, they sold 2 minivans and 8 sedans. During which month did the auto dealership sell a lower ratio of sedans to minivans?

Jan Feb Neither,
 $\frac{20}{5}$ $\frac{8}{2}$ they're
 4 = 4 equivalent

4) Mrs. Ingram and Mrs. Perez took polls of their second-grade classes to find out their students' favorite colors. In Mrs. Ingram's class, 12 students said their favorite color was blue and 10 said their favorite color was red. In Mrs. Perez's class, 10 voted for blue and 6 for red. Whose class had a higher ratio of students who preferred red to students who preferred blue?

Ingram Perez Ingram
 $\frac{10}{12}$ $\frac{6}{10}$
 0.83 > 0.6

5) The chart below shows three colleges and average students and teachers per class. Jenna knows she wants small class sizes in college. Which college has the lowest student-to-teacher ratio?

	Teachers	Students
<u>Ohio U.</u>	3	29
Ohio State	2	32
Wright State	4	49

$\frac{29}{3}$ $\frac{32}{2}$ $\frac{49}{4}$
9.7 16 12.25

6) Mario can afford to apply to only one university. He will apply to the school that offers the best probability of awarding him a full, academic scholarship. At which school does he have the best chance of getting a full ride scholarship?

	Applicants	Full-Rides
<u>College A</u>	825	275
College B	600	150
College C	2250	250
College D	1250	125

.33
 .25
 .11
 .1

7) The table shows the number of games played and the number of games won by four sports teams at a middle school. None of the sports teams had a tie game during the season. Which sports team has the lowest loss-to-win ratio?

Sports Team	Total Games Played	Number of Games Won
Basketball	18	15
Football	7	4
Golf	14	8
<u>Softball</u>	20	18

$\frac{3}{15}$ $\frac{3}{4}$ $\frac{6}{8}$ $\frac{2}{18}$

Losses
 3
 3
 6
 2