

Ratios and Rates

I. Ratios

- a. Definition-
- b. Written 3 ways:
- c. Change to the same units then simplify like a fraction.
- d. Examples: express as a ratio in simplest form
 1. 15 apples to 24 apples
 2. 6 inches out of 1 foot

II. Rate

- a. Definition-
- b. Unit rate is a rate with a denominator of 1
- c. Examples: Express as a unit rate.
 1. 300 students to 20 teachers
 2. \$8.80 for 11 pounds



A quick check for understanding:

1. Define a ratio in your own words.
2. Write the ratio $6/1$ in two other ways on whiteboards.
3. Write the ratio of 3 days to 12 hours in simplest form on whiteboards.
4. Write the 27 students to nine computers as a rate in simplest form on whiteboards.
5. Compare and contrast ratios and rates.



Sports Analyst

- 1.) The Buffalo Bills spend an average of 5 days per calendar year on publicity campaigns that you as a sports analyst are offered to attend. Express this ratio in simplest form (in the same units).

- 2.) At the time of the 1991 All-Star Game, the Texas Rangers led the American League West division by winning 44 of their first 77 games. You are writing an article on the Texas Rangers (since they were just in the World Series) and you would like to include this information as a ratio. Write the ratio of winning games to total games three different ways in simplest form.

- 3.) In the first ten games of the season, the Pittsburgh Pirates won six games. What is their win:loss ratio in simplest terms?

- 4.) Abner Doubleday in Cooperstown, NY invented the modern game of baseball in 1839. In 1845, Alexander J. Cartwright established standard rules for the game and organized the Knickerbocker Baseball club of NY. Since the beginning of baseball, statisticians have kept track of player's performances. For example, a player's batting average is really a ratio.

$\frac{\text{number of hits}}{\text{number of times at bat}} = \text{batting average}$

In the 1991 baseball season, Jeff Treadway led the Atlanta Braves in individual batting with 98 hits in 306 times at bat. To the nearest thousandth, what was his batting average?

Is this value a rate? Justify why or why not.



Sales Associate

1.) The ratio of the number of quarters you keep in the store to number of \$1 bills is 18 to 8. Write this as a ratio in lowest terms (using the same units).

2.) As a sales associate, you make an extra \$100 for selling 16 CD players. Express this as a unit rate.

What does the unit rate tell you? Why might it be important to you?

3.) Which is a better buy for your customers, 2 compact discs for \$26.50 or 3 compact discs for \$40.00? Defend your response.



Cook/Chef

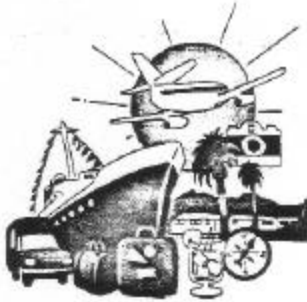
1.) For every ounce of vegetable oil you put into your secret recipe, you need to put in two pints of water. Write this as a ratio in simplest form (using the same units).

Could your ratio be considered a rate? Why or why not?

2.) 27 people can be served with three boxes of instant mashed potatoes. Express the above as a unit rate.

What does this unit rate tell you?

3.) As a chef, which is a better deal to buy apples, 1 apple for \$.19 or 3 apples for \$.59? Defend your response.



Travel Agent

- 1.) As a travel agent, you buy bus tickets at \$420 for 15 tickets. Express this as a unit rate (cost per ticket).

- 2.) Many of your clients like to buy phone cards so they can call their families while they are away. You can get a rate of \$1.75 for 5 minutes. Express this as a unit rate.

- 3.) The average travel agent spends about 20 minutes per hour on the telephone making reservations. Express this as a ratio in simplest form (using the same units).

- 4.) Which is a better buy, a cruise for \$1200 for 4 nights or \$2310 for 7 nights? Justify your response.

Name: _____

Universal Foundation Skills A.K.A. SCANS Skills

Participant Reflection about
S.C.A.N.S. Skills
S.C.A.N.S. = Secretary's Commission on Achieving Necessary Skills

Directions:
Reflect on today's lesson and identify
all the skills we used today.

