

Lesson 5-2

Objective- To compare rates.

If two quantities that have different units of measure, then the rate of a per $b = \frac{a}{b}$.

You are traveling a distance of 250 miles in 3 hours. What is your average speed in miles per hour?

$$\text{Average speed} = \frac{\text{Distance}}{\text{Time}} = \frac{250}{3} = 83\frac{1}{3} \text{ mph}$$

Rates

$$\frac{300 \text{ mi.}}{5 \text{ hr.}} = 60 \text{ mi./hr.}$$

- a comparison of a number to one in different units.

- always written as a single number on a per unit basis.

22.7 words / min.

4 children / family

- always write the units.

- divide to simplify.

Find the unit rate.

1) 120 students in 4 classrooms

$$\frac{120 \text{ students}}{4 \text{ classrooms}} = 30 \text{ students / classroom}$$

2) \$40 for 8 lunches

$$\frac{\$40}{8 \text{ lunches}} = \$5.00 / \text{lunch}$$

3) 12,000 cars sold by 1600 dealers

$$\frac{12,000 \text{ cars}}{1600 \text{ dealers}} = 7.5 \text{ cars / dealer}$$

Comparing Unit Rates

Which is the better deal?

15 oz. of cereal for \$1.35

32 oz. of cereal for \$3.84

$$\frac{\$1.35}{15 \text{ oz.}} = \$0.09 / \text{oz.}$$

$$\frac{\$3.84}{32 \text{ oz.}} = \$0.12 / \text{oz.}$$

Comparing Unit Rates

Which is more expensive?

30 oz. of juice for \$7.50

50 oz. of juice for \$13.50

$$\frac{\$7.50}{30 \text{ oz.}} = \$0.25 / \text{oz.}$$

$$\frac{\$13.50}{50 \text{ oz.}} = \$0.27 / \text{oz.}$$

Comparing Unit Rates

Which is greater?

Earning \$21.00 for 3.5 hours of work

Earning \$33.55 for 5.5 hours of work

$$\frac{\$21.00}{3.5 \text{ hrs.}} = \$6.00 / \text{hr.}$$

$$\frac{\$33.55}{5.5 \text{ hrs.}} = \$6.10 / \text{hr.}$$