Notes: 8-1 Using Proportions 1/23

→ Essentially, solve a word problem by writing & solving a proportion

ex: To burn off the calories from a 12-ounce can of soda, you would have to cycle 24 minutes at 13 miles per hour. How long would you have to cycle at the same speed to burn off the calories from a 16-ounce bottle of soda?

① Set up proportion

→ compare w/ ratios of same units

$$\frac{12 \text{ oz}}{24 \text{ min}} = \frac{16 \text{ oz}}{x \text{ min}}$$

② Cross multiply & solve

$$\frac{12 \text{ oz}}{24 \text{ min}} = \frac{16 \text{ oz}}{x \text{ min}}$$

$$12x = 24(16)$$

$$\frac{12x}{12} = \frac{384}{12}$$

$$x = 32$$

Notes: 8-1 continued 1/23

Ex: About one out of every five people is left handed. If there are 28 students in a class, how many would you expect to be left handed?

① Set up proportion. (Units = Units)

$$\frac{1 \text{ left-handed}}{5 \text{ people}} = \frac{x \text{ left handed}}{28 \text{ people}}$$

② Cross multiply & solve

$$\frac{1}{5} = \frac{x}{28}$$

$5x = 1 \cdot 28$

$\frac{5x}{5} = \frac{28}{5}$

$x = 5.6$

→ 5 or 6 people would be left handed

Ex: If 16 ounces equals one pound, then 56 ounces equal p pounds. How many pounds are in 56 ounces?

→ Think: comparing ounces to pounds

ounces : pounds

$\frac{\text{ounces}}{\text{pounds}}$

$\frac{16 \text{ ounces}}{1 \text{ pounds}} = \frac{16 \text{ ounces}}{p \text{ pounds}}$

$56 \cdot 1 = 16p$

$\frac{56}{16} = \frac{16p}{16}$

$3.5 = p$

3.5 pounds

Notes: 8-1 continued 1/23

Try This:

(1) If Cynthia can walk 3 miles in one hour, how far can she walk at the same rate in 2½ hours?

Answer: 7.5 miles

(2) There are eight pints in a gallon. How many pints are there in 6 3/4 gallons?

Answer: 54 pints

HW: p332 #8, 10, 12