## 1.7 Solving Ratio and Rates Problems (6.RP.3 and 6.RP.3b)

**Two Methods**

- Use a bar diagram ~~(crossed out)~~
  - Draw a rectangle
  - Split the rectangle into equal section
  - Determine how many items go in each section.

  ✱ *make sure labels match up!*

- Use equivalent fractions
  - Multiply or divide by the same number. — *scaling (simplify first if needed)*
  - ~~Unit rates~~
  - ~~Cross products~~

## Guided Practice

Determine if each pair of ratios or rates is <u>equivalent</u>. Explain your reasoning.

1.) Out of 30 students surveyed, 17 have a dog. Based on these results, predict how many of the 300 students in the school have a dog.

$$\frac{17 \text{ dog}}{30 \text{ stud.}} \to \frac{170 \text{ dog}}{300 \text{ stud.}}$$

×10

*170 students have a dog*

2.) If one out of 12 students share a locker, how many share a locker in a school of 456 students?

$$\frac{1 \text{ share}}{12 \text{ stud.}} \to \frac{38 \text{ share}}{456 \text{ stud.}}$$

×38

*38 students share a locker*

3.) Sabrina jogged 2 miles in 30 minutes. At this rate, how far would she jog in 90 minutes? At what rate did she jog each hour?

$$\frac{2 \text{ miles}}{30 \text{ min}} \xrightarrow{\times 3} \frac{6 \text{ min}}{90 \text{ min}} \xrightarrow{\times 2} \frac{4 \text{ miles}}{60 \text{ min}}$$

×3          ×2          (1 hour)

4.) There are 810 calories in 3 scoops of vanilla ice cream. How many calories are there in 7 scoops of ice creams?

$$\frac{810 \text{ cal}}{3 \text{ scoops}} \xrightarrow{\div 3} \frac{270 \text{ cal}}{1} \xrightarrow{\times 7} \frac{1890 \text{ cal}}{7 \text{ scoops}}$$

(simplify)

**Building on the Essential Question** – What are some ways to solve ratio problems?

*scaling (might need to simplify first)*

**Rate Yourself** – Are you ready to move on? Shade the section that applies.

YES ? NO