Objective Using and Comparing Ratio Representations

Warm-Up

Use the double number line to create a ratio table

```
0        10        40        70       100
●---+----●----+----●----+----●----+----●----+---→


●---+----●----+----●----+----●----+----●----+---→
0        50       100       150       200
```
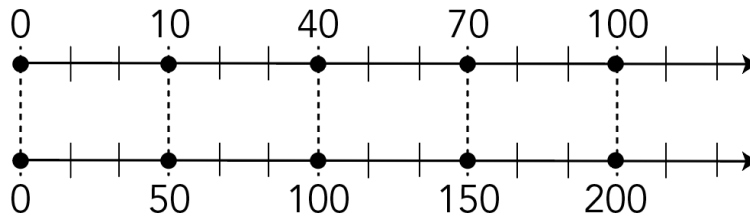
| x					
y					

Create a scenario that fi ts the data on the double number line and ratio table. What ratio is associ-
ated with your scenario?

You know different ways to think about ratios. So, you can use different strategies to solve problems.

1. The graph shown represents the number of gallons of water used for the number of times a toilet is flushed.

a. Write each point on the graph as the ratio of gallons of water used : number of fl ushes.
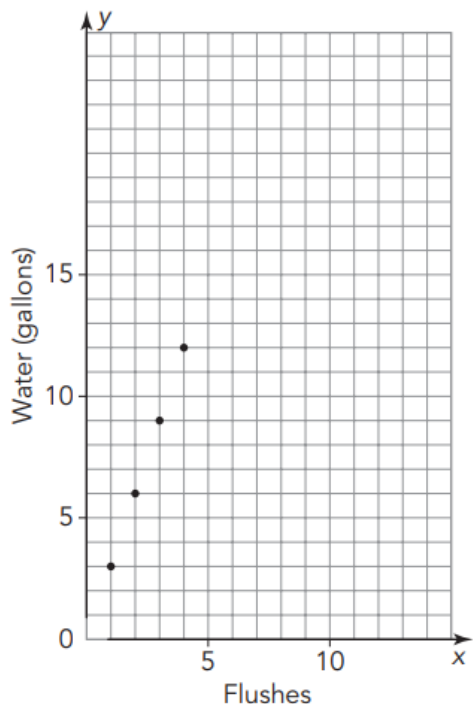
b. What do you notice about each ratio?

c. How many gallons of water would be used if the toilet was flushed 8 times? Explain the method you used.

d. How many times would the toilet be fl ushed to use 18 gallons of water? Explain the method you used.
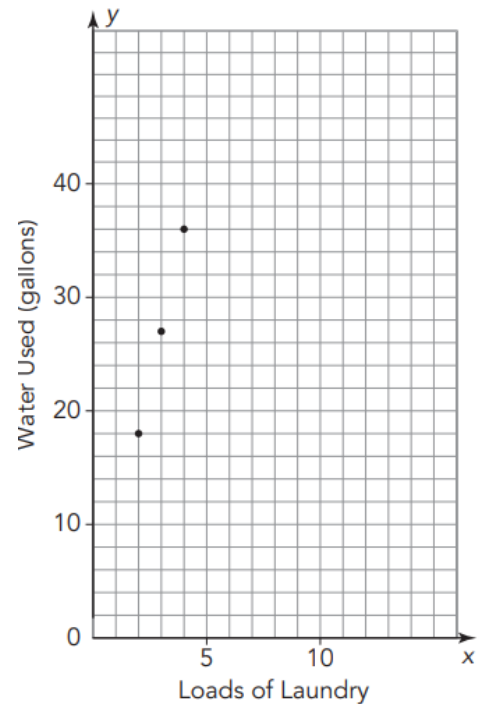
e. Did you use the same method to answer each question? If not, why?

2. The graph shown represents the number of gallons of water used for the number of loads of laundry washed.

a. Write each point on the graph as the ratio of gallons of water used : number of loads of laundry.

b. What do you notice about each ratio?

c. How many gallons of water would be used for 7 loads of laundry? Explain the method you used.

d. How many loads of laundry can be done if 45 gallons of water are used? Explain the method you used.

e. Did you use the same method to answer each question? If not, why?

Comparing Ratios with Double Number Lines

Showerheads come in various styles and allow different rates of water to fl ow. The ratio gallons of water : time is given for three different showerhead models.
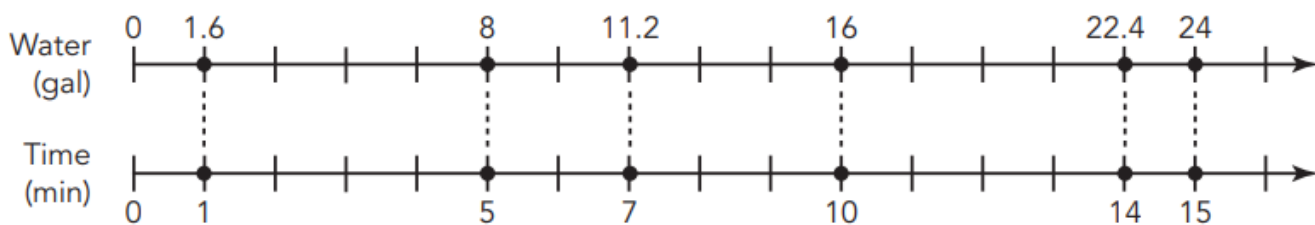
The first showerhead uses 20 gallons of water for every 5 minutes.
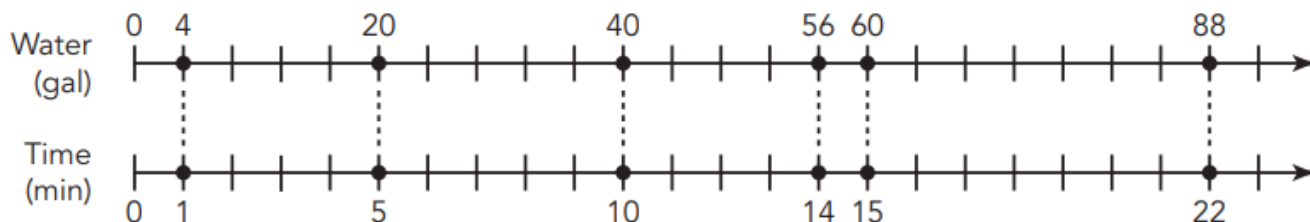
A second showerhead model uses 25 gallons of water for every 10 minutes
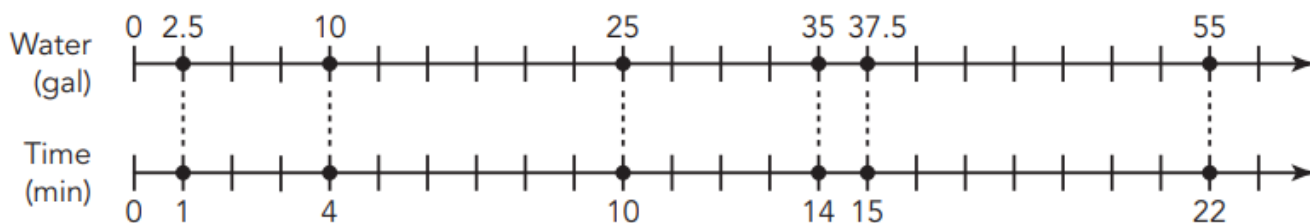
A third showerhead model uses 8 gallons of water for every 5 minutes.

1. Which of the three showerheads used the least amount of water per minute?

2. Explain your reasoning using double number lines.

LESSON 4.6b
One is Not Enough

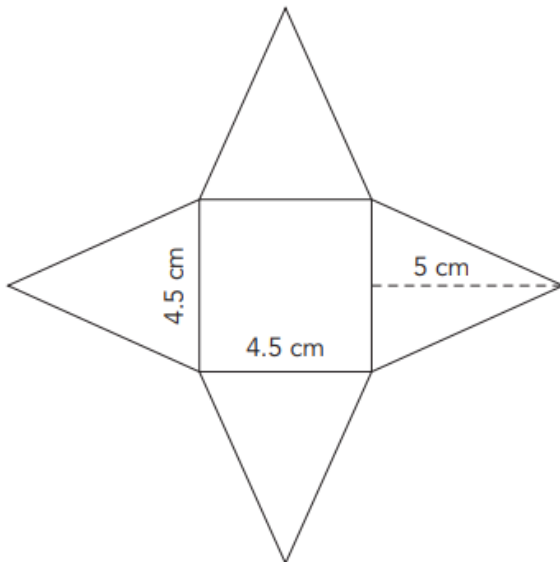**Objective** Using and Comparing Ratio Representations

REVIEW

1. Morgan and her friends are testing their typing skills. Morgan took an online typing test to compare her typing speed with her friends' speeds. During the 2 minute test, she typed 144 words. Her friend, Elizabeth, took a longer test; she typed 150 words in 3 minutes. Their other friend, Ruth, typed 65 words in 1 minute.

 a. Create a ratio table to show each girl's typing speed for 1 through 6 minutes.

 b. Plot each set of equivalent ratios on a coordinate plane. Use × to denote Morgan's typing speed, □ to denote Elizabeth's typing speed, and ★ to denote Ruth's typing speed.

 c. Draw three separate lines through the points that represent each ratio. What do you notice?

d. Who is the fastest typist? Who is the slowest typist? Explain how you can tell by looking at the three lines on your graph.

2. Morgan uses her typing skills to write a research paper for her history class. When she hits "Print," she realizes that her printer is broken—for every 5 pages she attempts to print, the printer messes up 3 of them! Create a ratio table to display the number of pages her printer would mess up. Then create a graph for your table of values. Be sure to label the axes and title the graph.

3. Determine the surface area of each fi gure based on the measurements of its net.

a.

5 cm
4.5 cm
4.5 cm

b.

3.7 cm
4.5 cm
4.5 cm   3.7 cm   4.5 cm   3.7 cm
7.3 cm