

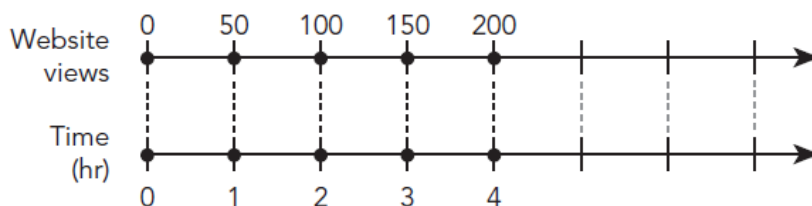


Let's investigate how you can use a graph to determine other equivalent ratios, and see how all the representations are connected.

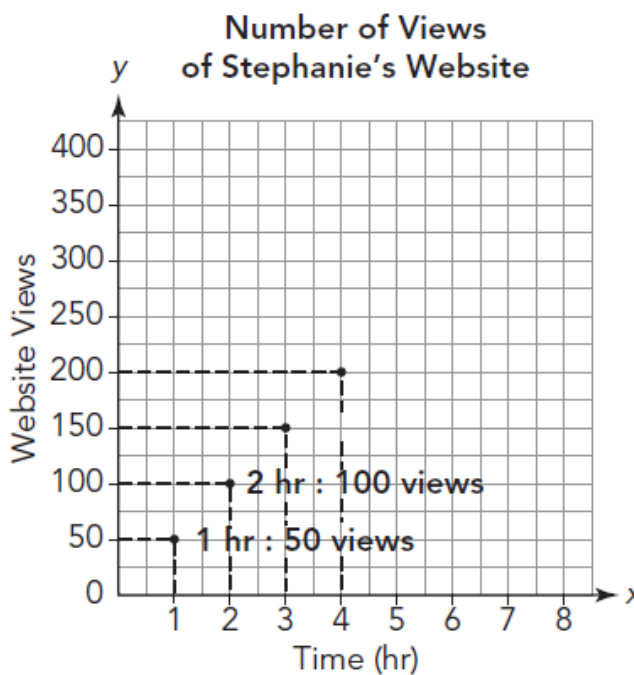
Stephanie runs a website for a local sports team that gets 50 views every hour. The table shows the ratio time : website views.

Website Views	50	100	150	200
Time (hr)	1	2	3	4

The double number line shown represents the same data.



You can also represent equivalent ratios on a coordinate plane.



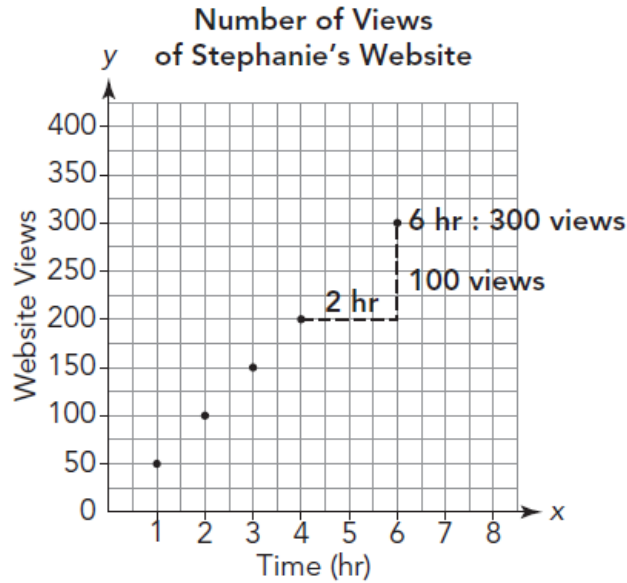
1. Copy and label the remaining ratios of the graph.

WORKED EXAMPLE

Consider the question: How many views will Stephanie's website have in 6 hours?

You know 4 different equivalent ratios from the original graph.

The graph shows how to use the two ratios 2 hr : 100 views and 4 hr : 200 views to determine the equivalent ratio 6 hr : 300 views.



Stephanie's website will have 300 views in 6 hours.

2. Describe how to determine how many views Stephanie's website will have in 7 hours given each representation.

a. using the graph

b. using the table

c. using the double number lines

One way to analyze the relationship between equivalent ratios displayed on a graph is to draw a line to connect the points. You can also extend the line to make predictions of other equivalent ratios.

Sometimes, all of the points on the line make sense. Other times when you draw a line, not all the points on the line make sense.

3. Draw a line through all the points you plotted on your graph.

Do all the points on the line you drew make sense in this problem situation? Why or why not?

4. How do all the representations—tables, double number lines and graphs—show equivalent ratios? How are they similar?

Describe some of the advantages of each representation.



Augie burns 225 calories for every 30 minutes he rides his bike.

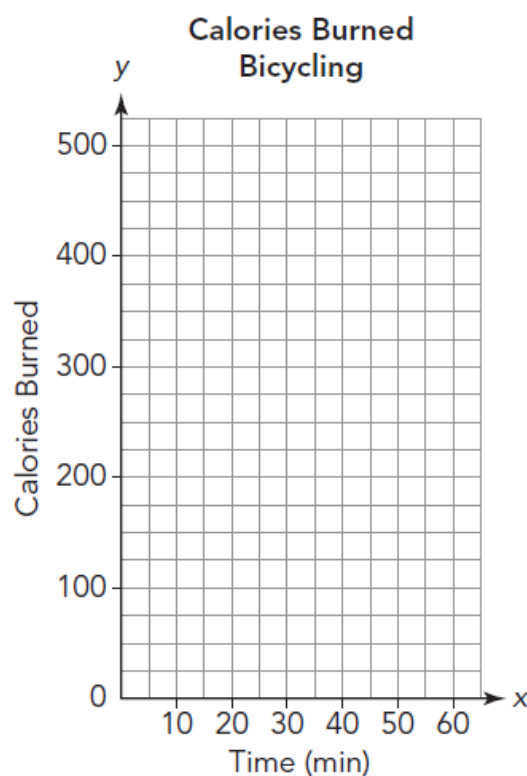
1. Copy and complete the table to chart the number of calories burned for different amounts of time. In your notebook plot the table of values on the graph.

Calories Burned				
Time (min)	30	10	60	50

2. Use your graph to answer each question.

a. How many minutes would Augie have to bike to burn 150 calories?

b. How many calories can he burn if he bikes for 25 minutes?



3. How was the graph helpful? Were there any limitations when using the graph to determine values?



**Show You
KNOW**

To Graph or Not to Graph

Go back and examine all the graphs in this lesson.

1. What is similar about all of the graphs?

2. What is different about all the graphs?

3. Describe how you can use a line to analyze equivalent ratios. What are the benefits and limitations of using a graph to display and interpret ratios?



LESSON 4.5b

They're Growing!



Objective

Graphs of Ratios

Practice

On a **separate piece of graph paper** create a graph to represent the values shown in each ratio table.

1.

Weight (pounds)	1	2	4	5
Cost (dollars)	3	6	12	15

2.

Time (hours)	1	3	5	7
Distance (miles)	25	75	125	175

3.

Time (minutes)	15	30	45	60
Calories	80	160	240	320

4.

Time (seconds)	1	10	15	20
Data (Mb)	10	100	150	200

5.

Time (minutes)	15	30	45	60
Distance (miles)	1.5	3	4.5	6

6.

Time (minutes)	1	5	6	10
Height (feet)	6	30	36	60

