

Name _____
Due Date _____

Ratios Study Guide

Q1: The Lakeland Middle School boys' golf team is made up of seventh and eighth graders. There are 12 seventh graders and 17 eighth graders on the team.

Part A

Write the ratio of seventh graders to eighth graders and the ratio of eighth graders to seventh graders on the team.

The ratio of seventh graders to eighth graders is

$$\frac{12 \text{ seventh}}{17 \text{ eighth}}$$

(or : form or word form)

The ratio of eighth graders to seventh graders is

$$\frac{17 \text{ eighth}}{12 \text{ seventh}}$$

Part B

Are the ratios you wrote in part A part-to-part or part-to-whole ratios?

Part-to-part

Part C

Write the ratio of seventh graders on the team to the total number of team members and the ratio of eighth graders on the team to the total number of team members.

The ratio of seventh graders on the team to the total number of team members is

$$\frac{12 \text{ seventh}}{29 \text{ total}}$$

(: or word)

The ratio of eighth graders on the team to the total number of team members is

$$\frac{17 \text{ eighth}}{29 \text{ total}}$$

Part D

Are the ratios you wrote in part C part-to-part or part-to-whole ratios?

part-to-whole

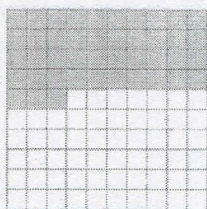
Part E

Which is greater: the ratio of seventh graders to the total number of team members, or the ratio of eighth graders to the total number of team members? Explain your reasoning.

The ratio of eighth graders to total team members because

$$\frac{12}{29} < \frac{17}{29}.$$

Q2: The hundredths grid shown represents a whole.



Part A

Write the ratio of shaded squares to not shaded squares as a ratio and a fraction.

Ratio = 43 shaded : 57 not shaded

Fraction = $\frac{43 \text{ shaded}}{57 \text{ not shaded}}$

Part B

Write the number of shaded squares as a percent.

43 %

Part C

Is the percent of squares shaded a part-to-part or part-to-whole ratio?

part-to-whole

Q3: Dayna has two equal buckets of paint the same shade of red. She adds white paint to Bucket 1. Which bucket will have a lighter shade of red, Bucket 1 or Bucket 2? Explain your answer.

Bucket 1 will have a lighter shade. When you add white to red it will start turning into pink.

Q4: Micah, Rose and Zoe all ran in a 5-mile race. Their running rates are shown in the table.

Runner	Rate
Micah	1 mile in 8 minutes
Rose	2.5 miles in 20 minutes
Zoe	4 miles in 32 minutes

Part A

Write each runner's rate as a fraction.

Runner	Rate
Micah	$\frac{1 \text{ mile}}{8 \text{ minutes}}$
Rose	$\frac{2.5 \text{ miles}}{20 \text{ minutes}}$
Zoe	$\frac{4 \text{ miles}}{32 \text{ minutes}}$

$$M = \frac{1}{8}$$

$$R = \frac{2.5}{20} \div \frac{2.5}{2.5} = \frac{1}{8}$$

$$25 \overline{) 200} \\ \underline{-200} \\ 0$$

$$Z = \frac{4}{32} \div \frac{4}{4} = \frac{1}{8}$$

Part B

Which runner won the race?

It was a 3 way tie.

Q5: Scale up or scale down each ratio to determine the unknown quantity. State whether you scaled up or scaled down the given ratio and explain how you determined each answer.

Part A

$$\frac{366 \text{ miles}}{6 \text{ hours}} \div \frac{6}{6} = \frac{?}{1 \text{ hour}}$$

61 miles

$$6 \overline{) 366}$$

I scaled down each value by 6

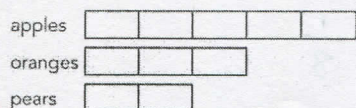
Part B

$$\frac{5 \text{ green balls}}{7 \text{ yellow balls}} \times \frac{9}{9} = \frac{?}{63 \text{ yellow balls}}$$

45 green balls

I scaled up each value by 9

Q6: The Fruit Basket sells variety bags of apples, oranges, and pears. The ratio of the fruit is always 5 apples: 3 oranges: 2 pears. A tape diagram representing the ratio of each type of fruit is shown.



Part A

Describe what each small rectangle in the tape diagram represents.

Each small rectangle represents 1 piece of fruit.

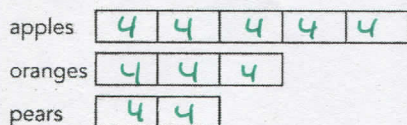
Part B

What is the least total amount of fruit in a variety bag?

10 pieces

Part C

One of the variety bags has a total of 40 pieces of fruit. Use the tape diagram to determine how many of each type of fruit is in the bag.

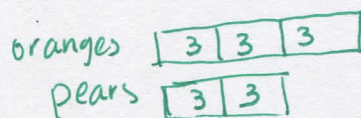


Fruit	Number of fruits
Apples	20
Oranges	12
Pears	8

Part D

How many oranges are in a variety bag if there are 6 pears?

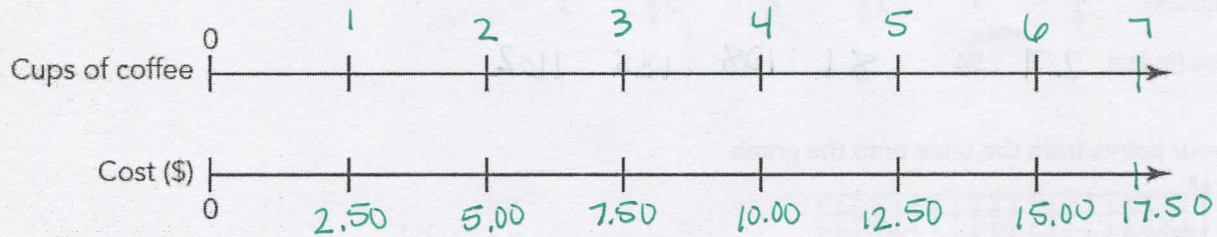
9 oranges



Q7: Javaland sells a cup of coffee for \$2.50.

Part A

Complete the double number line.



Part B

How many cups of coffee can be purchased with \$10? *4 cups*

Part C

Ben wants to buy 7 cups of coffee for his office. He has \$18. Can he buy 7 cups of coffee? Explain your answer.

Yes. 7 cups will cost \$17.50. I extended my double number line to find the cost of 7 cups.

Part D

Can a person spend exactly \$12 on cups of coffee at Javaland? Explain your answer.

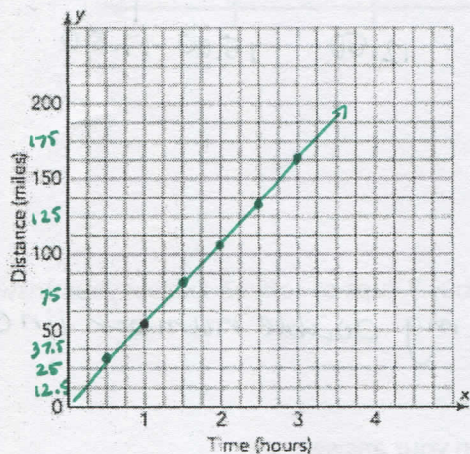
No, based on the double number line the closest you can get is \$12.50.

Q8: Ethan drove his car to his grandparents' house at a steady rate of 54 miles per hour.

a. The table shows the ratio time : distance. Complete the table.

Time (hours)	$\frac{1}{2}$	1	$1\frac{1}{2}$	2	$2\frac{1}{2}$	3
Distance (miles)	27	54	81	108	135	162

c. Plot your points from the table onto the graph.



d. If he continues driving at the same rate, how far will Ethan drive in 4 hours?

216 miles

e. Driving at the same rate, how long will it take Ethan to drive 243 miles?

$4\frac{1}{2}$ hours

f. Draw a line through all the points you plotted on your graph. What do you notice?

They form a straight line and pass through the origin.

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

Yes. You can travel partial miles for partial hours.

