Finding the Greatest Common Factor

Home Link 2-1

NAME DATE TIME

SRB 105

1. Use any method to find the greatest common factor for the number pairs.

   a. GCF (42, 56) = _____ **b.** GCF (32, 80) = _____

   c. GCF (72, 16) = _____ **d.** GCF (10, 40, 25) = _____

2. Explain how you found GCF (42, 56) in Problem 1a.

   _____

   _____

3. Use the GCF to find an equivalent fraction for $\frac{48}{64}$. Show your work.

   Answer: _____

4. Jenny will use 28 blue beads and 21 red beads to make identical bracelets.

   a. What is the greatest number of bracelets she can make?

   _____

   b. How many blue beads and how many red beads will be on each bracelet?

   _____

5. Explain how a set of numbers can have a GCF greater than 1.

   _____

   _____

Try This

6. GCF (12, 24, 30, 42) = _____

Practice

Insert the missing digits to make each number sentence true.

7. ____,____63 − 3,9____9 = 2,83____

8. 71,____4____ − 4,8____6 = 6____,270

Least Common Multiple

Home Link 2-2

NAME DATE TIME

SRB 106

(1) Find the least common multiple for each pair of numbers.

a. LCM (10, 15) = _____

b. LCM (12, 15) = _____

c. LCM (6, 10) = _____

d. LCM (7, 5) = _____

(2) Find the greatest common factor and least common multiple for each pair of numbers.

a. GCF (75, 100) = _____

LCM (75, 100) = _____

b. GCF (36, 48) = _____

LCM (36, 48) = _____

Use the LCM to find equivalent fractions with the least common denominator.

(3) $\frac{3}{4}$ and $\frac{5}{6}$

LCM (4, 6) = _____

Fractions: _____

(4) $\frac{1}{6}$ and $\frac{3}{8}$

LCM (6, 8) = _____

Fractions: _____

(5) $\frac{4}{25}$ and $\frac{4}{15}$

LCM (25, 15) = _____

Fractions: _____

(6) **a.** On a website, there is an ad for jeans every 5 minutes, an ad for sneakers every 10 minutes, and an ad for scarves every 45 minutes. If they all appeared together at 9:00 P.M., when is the next time they will all appear together? _____

b. Explain how you used GCF or LCM to solve the problem.

_____

_____

(7) Explain why the LCM is at least as large as the GCF.

_____

_____

Practice

Estimate.

(8) 5,692 * 3 = _____

(9) 69 * 54 = _____

(10) 78 * 123 = _____

Fraction-Multiplication Review

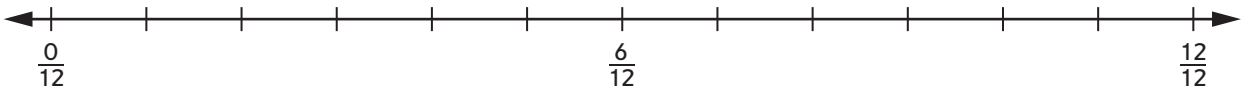
Home Link 2-3

NAME DATE TIME

Represent the problem on a number line, and then solve the problem.

SRB 189

① $\frac{2}{3} * \frac{9}{12} =$ _____



② Maliah has $\frac{2}{3}$ cup of raisins. She used $\frac{1}{2}$ of her raisins to make muffins. What fraction of a cup of raisins did she use?

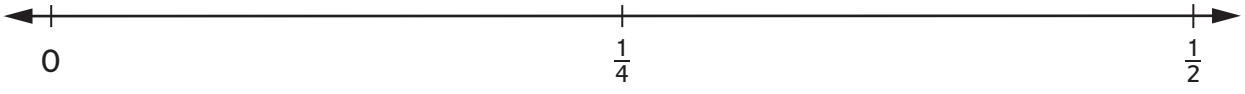
Number sentence: _____

③ On the back of this page, write and solve a number story for $\frac{1}{4} * \frac{1}{2}$.

Try This

④ Ryse sprinted $\frac{3}{4}$ of a lap around the running track at school. A whole lap is $\frac{1}{4}$ mile.

How far did he sprint?



Number sentence: _____

Practice

Estimate.

⑤ 845 ÷ 24 = _____ ⑥ 6,450 ÷ 639 = _____ ⑦ 129 ÷ 19 = _____

Companion Gardening

Home Link 2-4

DATE TIME

Draw and label area models and write number sentences to represent and solve Problems 1–2.

SRB 188-192

1. In companion planting, marigold flowers are used to repel insects that harm melon plants. Community gardeners plant $\frac{2}{3}$ of a rectangular garden bed with melon plants. They plant $\frac{3}{4}$ of the melon area with marigolds.

   What fraction of the garden bed will have both plants growing together? _____

   Number sentence: _____

2. Two plants that grow well together are tomatoes and basil. This year, $\frac{1}{5}$ of a garden bed was planted with tomatoes and basil. Next year, the area will be 3 times as large.

   What will the area be next year? _____

   Number sentence: _____

First estimate, then use a partial-products diagram to solve Problem 3.

3. Last year a community garden produced $5\frac{1}{3}$ pounds of carrots. This year, better weather resulted in a harvest $2\frac{2}{3}$ times as large. How many pounds of carrots were harvested this year?

   Estimate: _____

   Number sentence: _____

Practice Find equivalent fractions.

4. $\frac{3}{4} = \frac{\square}{12}$

5. $\frac{18}{20} = \frac{9}{\square}$

6. $\frac{6}{7} = \frac{\square}{28}$

7. $\frac{24}{36} = \frac{\square}{3}$

Fraction Multiplication

Home Link 2-5

NAME DATE TIME

SRB 188-192

Mara's strategy: $\frac{6}{8} * \frac{2}{3} = \left(6 * \frac{1}{8}\right) * \left(2 * \frac{1}{3}\right)$

$= (6 * 2) * \left(\frac{1}{8} * \frac{1}{3}\right)$

$= 12 * \frac{1}{24}$

$= \frac{12}{24}$

(1) Use Mara's strategy to rename the fractions as whole numbers and unit fractions. Then group your factors to make the problem easier. Show the steps you use.

a. $\frac{5}{2} * \frac{2}{4} =$ _____

b. $\frac{10}{8} * \frac{8}{10} =$ _____

w

c. _____ $= 12 * \frac{5}{6}$

d. _____ $= \frac{5}{2} * 4$

e. $\frac{21}{3} * \frac{6}{7} =$ _____

f. $9 * \frac{2}{9} =$ _____

(2) Choose two problems from above that are alike in some way. Describe how they are alike.

_____

_____

Use any model or strategy to solve Problems 3–4. Write a number sentence.

(3) Samantha had 6 pages of homework. She finished $\frac{2}{3}$ of her assignment.

How many pages did she finish?

Number sentence:

_____

(4) A room measures $8\frac{1}{2}$ feet by $10\frac{2}{3}$ feet.

What is the area of the room?

Number sentence:

_____

Practice

(5) $389 * 17 =$ _____ (6) _____ $= 176 * 48$ (7) $453 * 24 =$ _____

Division Using Common Denominators

Home Link 2-6

NAME DATE TIME

SRB 173

(1) Draw a picture or diagram and solve the problem.

Rudi has 4 cups of almonds.
His trail mix recipe calls for $\frac{2}{3}$ cup of almonds.
How many batches of trail mix can he make?

_____

(2) Use common denominators to solve the problems.

Write a number sentence to show how you rewrote the problem with common denominators.

Check your answers.

a. $\frac{3}{4} \div \frac{3}{8} =$ _____ Number sentence: _____

b. $3\frac{1}{3} \div \frac{5}{6} =$ _____ Number sentence: _____

c. $\frac{36}{8} \div \frac{1}{2} =$ _____ Number sentence: _____

(3) Michelle is cutting string to make necklaces.
She has 15 feet of string. She needs $1\frac{1}{2}$ feet of string for each necklace.
How many necklaces can she make?

Number model: _____ Solution: _____

(4) A rectangular window has an area of $4\frac{1}{2}$ square meters. Its width is $\frac{3}{4}$ meter.
What is its length?

Number model: _____ Solution: _____

Practice

Solve.

(5) GCF (20, 30) = _____ (6) GCF (6, 16) = _____ (7) GCF (36, 54) = _____

More Exploring Fraction Division

Home Link 2-7

NAME DATE TIME

For problems 1–3, circle the best estimate and the correct number model. Then solve the problem.

SRB 193-196

(1) Stan is in woodworking class with 6 friends. They have to split a board that is $4\frac{2}{3}$ feet long equally among the seven of them. How long will each person's piece be?

Estimate:	More than $4\frac{2}{3}$ feet	Less than $4\frac{2}{3}$ feet
Number model:	$7 \div 4\frac{2}{3}$	$4\frac{2}{3} \div 7$

Answer: _____

(2) The area of a rectangle is $10\frac{1}{2}$ square feet. The length is $5\frac{1}{4}$ feet. How wide is the rectangle?

Estimate:	More than $5\frac{1}{4}$ feet	Less than $5\frac{1}{4}$ feet
Number model:	$10\frac{1}{2} \div 5\frac{1}{4}$	$5\frac{1}{4} \div 10\frac{1}{2}$

Answer: _____

(3) Sounya walks dogs on Saturdays. It takes $\frac{3}{4}$ of an hour to walk each dog. She has $5\frac{1}{4}$ hours. How many dogs can she walk?

Estimate:	More than 5 dogs	Fewer than 5 dogs
Number model:	$\frac{3}{4} \div 5\frac{1}{4}$	$5\frac{1}{4} \div \frac{3}{4}$

Answer: _____

Practice

Find the LCM.

(4) LCM (3, 7) = _____ (5) LCM (8, 4) = _____ (6) LCM (10, 4) = _____

Fraction Division

Home Link 2-8

NAME DATE TIME

Rewrite and solve the division problems using the Division of Fractions Property.

SRB 196

Example: $\frac{3}{8} \div \frac{2}{5} = \frac{3}{8} * \frac{5}{2} = \frac{15}{16}$

① $3 \div \frac{2}{3} =$ _____

② $\frac{1}{5} \div \frac{8}{9} =$ _____

③ $4 \div \frac{5}{7} =$ _____

④ $1\frac{2}{3} \div \frac{3}{5} =$ _____

⑤ $\frac{2}{5} \div \frac{3}{4} =$ _____

⑥ $\frac{3}{5} \div 4 =$ _____

⑦ How many $\frac{1}{4}$-cup servings of cottage cheese are in a 3-cup container?

Division number model: _____ Multiplication number model: _____

Solution: _____

⑧ Philip went on a $3\frac{1}{2}$-mile hike. He hiked for 2 hours.
About how far did he go in 1 hour?

Division number model: _____ Multiplication number model: _____

Solution: _____

⑨ Adam is using ribbon to decorate name tags for the class picnic.
He has $8\frac{2}{3}$ feet of blue ribbon. He needs $\frac{1}{3}$ foot of ribbon for each name tag.
How many name tags can he decorate?

Division number model: _____ Multiplication number model: _____

Solution: _____

Practice

Add or subtract.

⑩ \$4.50 + \$3 = _____

⑪ \$5.00 − \$3.20 = _____

⑫ _____ = \$6.30 + \$0.45 + \$1.35

Using Ratios to Represent Situations

Home Link 2-9

NAME DATE TIME

SRB 45-48

(1) Lenore's dog gave birth to a litter of 9 puppies.
Two of the puppies are male. Write ratios for the following:
Number of female puppies to the total number of puppies _____

Number of male puppies to female puppies _____

For Problems 2–4, draw a picture to help you solve the problem. Record a ratio.

(2) There are 15 tiles. 2 out of 5 tiles
are white. How many tiles are white? _____
Write the ratio of white tiles to total tiles.

_____

(3) There are 24 tiles. 3 out of 4 tiles
are white. How many tiles are white? _____
Write the ratio of white tiles to shaded tiles.

_____

(4) There are 3 times as many white tiles as
there are shaded tiles. Write this ratio.

_____

How many tiles are white if there are 12 tiles in total? _____

(5) The Mighty Marble Company fills bags of marbles
with a ratio of 3 Special Swirls out of every 9 marbles.
How many Special Swirls are in a bag that has 21 marbles? _____

Try This

(6) One class of 28 students has a ratio of 3 girls to 4 boys. What is the ratio for the number of boys to total number of students in the class?

_____

There are 60 girls in the whole sixth grade and the ratio is the same. How many students are there in sixth grade? _____

Practice Solve.

(7) $\frac{5}{6} * \frac{3}{4} =$ _____ (8) $\frac{2}{3} * 1\frac{1}{2} =$ _____ (9) $\frac{8}{9} * \frac{2}{7} =$ _____

More with Tape Diagrams

Home Link 2-10

NAME DATE TIME

Draw tape diagrams to solve the problems. Label your diagrams and your answers.

SRB 45-48

(1) Frances is helping her father tile their bathroom floor. They have tiles in two colors: green and white. They want a ratio of 2 green tiles to 5 white tiles.

a. They use 30 white tiles. How many green tiles do they use?

_____

b. How many white tiles would they need if they use 16 green tiles?

_____

c. They use 35 tiles in all. How many are green?

_____

d. They use 49 tiles. How many of each color did they use?

_____

e. Explain how you used the tape diagram to solve Part d.

_____

_____

Try This

(2) Frances and her father decide to also tile their kitchen floor. For every 3 white tiles they plan to use 7 green tiles. The kitchen floor has room for 63 tiles total. Explain why they cannot cover the kitchen floor using the ratio 3 : 7.

_____

Practice Divide.

(3) $\frac{4}{5} \div \frac{1}{5} =$ _____ (4) $\frac{1}{5} \div \frac{4}{5} =$ _____ (5) $7 \div \frac{1}{2} =$ _____

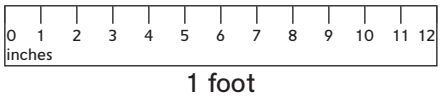
Finding Equivalent Ratios

Home Link 2-11

NAME DATE TIME

SRB 41

Use the pictures to help you figure out the equivalent ratios.

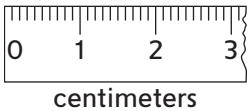
① 

1 foot

Ratio of feet to inches:

1 foot : _____ inches

3 feet : _____ inches 7 feet : _____ inches _____ feet : 144 inches

② 

centimeters

Ratio of millimeters to centimeters:

10 mm : _____ cm

_____ mm : 5 cm _____ mm : 300 cm 250 mm : _____ cm

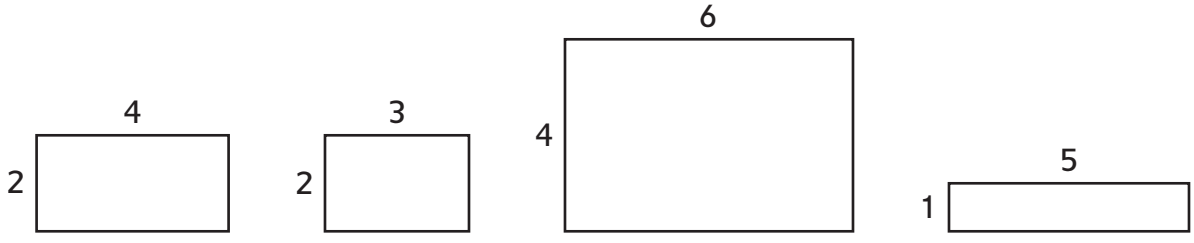
③ 

Ratio of legs to spiders:

8 legs : _____ spider

_____ legs : 4 spiders _____ legs : 9 spiders 320 legs : _____ spiders

④ **a.** Circle the similar rectangles.



b. Explain why the rectangles you circled are similar.

_____

_____

c. Under each rectangle, use fraction notation to write the width-to-height ratio.

Practice Multiply mentally to find the cost.

⑤ 4 pens at $2.98 each _____

⑥ 3 books at $24.95 each _____

Using Ratios to Make Fruit Cups

Home Link 2-12 SRB 43-48

NAME DATE TIME

Oliver has two fruit-cup recipes that have different ratios of raspberries and watermelon.

Recipe A	Recipe B
2 cups raspberries 3 cups watermelon	5 cups raspberries 11 cups total

(1) **a.** Which fruit-cup recipe would have a stronger raspberry taste? _____

b. Draw a picture or diagram to support your answer.

c. Explain how your picture or diagram supports your answer.

_____

_____

(2) Create a fruit-cup recipe that would taste the same as Recipe B, but uses more than 11 cups of fruit.

List your ingredients: _____

(3) Create a fruit-cup recipe that would make a fruit cup with a weaker raspberry taste than Recipes A and B.

List your ingredients: _____

Try This

(4) If you only want 1 cup of fruit salad made from Recipe A, what measurements of watermelon and raspberries do you need?

_____

Practice Divide.

(5) 560 ÷ 7 = _____ (6) 842 ÷ 2 = _____ (7) 930 ÷ 3 = _____

Ratio/Rate Tables and Unit Rates

Home Link 2-13

NAME DATE TIME

SRB 43-44, 49-50

(1) List three examples of a rate:

_____

Draw a ratio/rate table to solve each problem. The first table has been drawn for you, but it is not complete.

(2) One 12-ounce can of frozen juice is mixed with three 12-ounce cans of water. How many cans of water do you need for 4 cans of juice?

Cans of Water	3	
Cans of Juice	1	4

_____

(3) A hiker's map has a scale of 3 inches to 10 miles.
The trail is 4 inches long on the map. How long is the actual hike? _____

(4) Amy types 125 words in 2 minutes.
About how long will it take her to type a 1,500-word report? _____

Try This

(5) A recipe for lime salad dressing calls for $\frac{1}{4}$ cup lime juice and $\frac{3}{4}$ cup olive oil.

How much lime juice would you use with 1 cup olive oil? _____

Practice Record >, <, or =.

(6) −3 _____ −5 (7) 6 _____ −7 (8) −8 _____ −9

Graphing Rates

Home Link 2-14

NAME DATE TIME

Snails move slowly. Jada, Reality, and Barb had a snail race. Then they compared the rates at which the snails crawled.

SRB 51-52

(1) Fill in the ratio/rate table with equivalent rates.

a. Jada's Snail

Minutes	10			
Inches	4	8	2	6

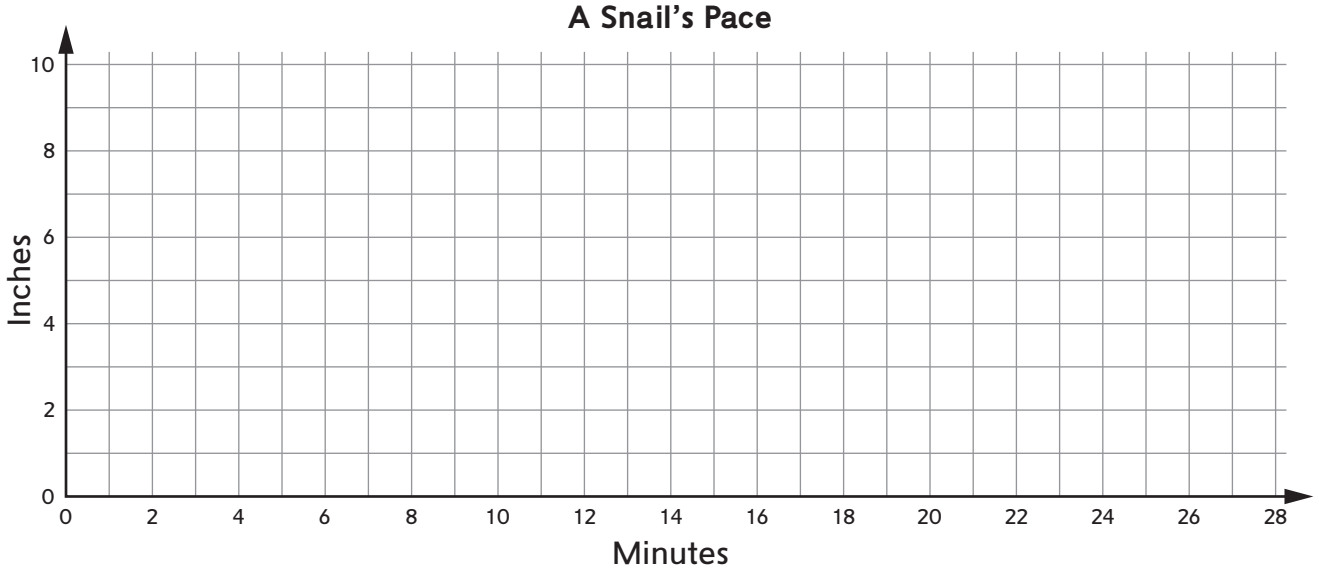
b. Reality's Snail

Minutes	12			
Inches	3	1	4	6

c. Barb's Snail

Minutes	15			
Inches	5	1	3	7

(2) Treat each rate as an ordered pair. Graph each snail's rate using a different color.



(3) Which snail is the fastest? Use the graph to explain how you know.

_____

_____

Practice Insert >, <, or = to make each sentence true.

(4) 7 ____ 4.65 (5) 0.1 ____ 0.01 (6) 0.205 ____ 0.22