AchieveMath

Student Book

Volume 2

Name:

Catapult Learning™

Unit 4:

Introduction to Long Division

Catapult Learning™

Catapult Learning™

Catapult Learning, LLC
1-800-841-8730

www.catapultlearning.com

Printed in the United States of America.

Game Night

Model each problem using **base-10 blocks**. Complete the division equation.

1. There are 228 cookies divided equally among 3 bowls. How many cookies are in each bowl?

_____ ÷ _____ = _____

2. There are 162 flowers that need to be placed equally on 9 different tables. How many flowers go on each table?

_____ ÷ _____ = _____

3. There are 114 seniors placed on 6 teams. How many seniors are on each team?

_____ ÷ _____ = _____

4. There are 265 prize ribbons that will be divided equally between 5 senior centers. How many ribbons will each senior center receive?

_____ ÷ _____ = _____

Division Games

The school purchased several classroom resources that will be divided evenly among classrooms. Using the following information, divide the resources between the numbers of teachers listed. Use **base-10 blocks** to solve. Write the division equation and answer for each problem.

1.

Resource	Number of Teachers	Resources per Teacher
112 puzzles	8	

Equation: _____

2.

Resource	Number of Teachers	Resources per Teacher
270 decks of cards	6	

Equation: _____

3.

Resource	Number of Teachers	Resources per Teacher
198 math games	9	

Equation: _____

4.

Resource	Number of Teachers	Resources per Teacher
182 math kits	7	

Equation: _____

Lesson 23 Exit Ticket

Solve the following division problems using **base-10 blocks**.

1. Tiona evenly divides 144 cookies into 6 bags. How many cookies are in each bag?

_____ ÷ _____ = _____

There are _____ cookies in each bag.

2. Chan evenly distributes 232 brownies into 4 bags. How many brownies are in each bag?

_____ ÷ _____ = _____

There are _____ brownies in each bag.

3.

Treat	Number of Boxes	How many per box?
240 donuts	5	

Equation: _____

4.

Treat	Number of Boxes	How many per box?
216 apples	8	

Equation: _____

Extra Practice: What's the Problem?

Read the following real-life scenarios. Then write the division equation and use **base-10 blocks** to solve.

1. Pedro has a box of building blocks that he is dividing by size into 6 different categories. He knows there is an equal number of blocks per size. There is a total of 564 building blocks. How many blocks are there in each size?

Equation: _____

There are _____ blocks in each size.

2. Zhuo has 112 batteries that he is putting into 8 RC cars. Each car takes the same number of batteries. How many batteries go in each car?

Equation: _____

There are _____ batteries in each car.

3. In preparation for spring training, Sydney is filling softball buckets for batting practice. There are 406 softballs that need to be evenly distributed into 7 buckets. How many softballs go in each bucket?

Equation: _____

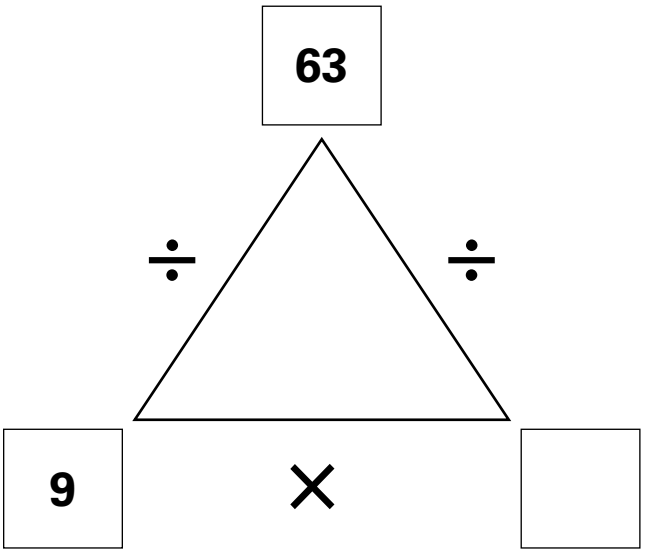
_____ softballs go in each bucket.

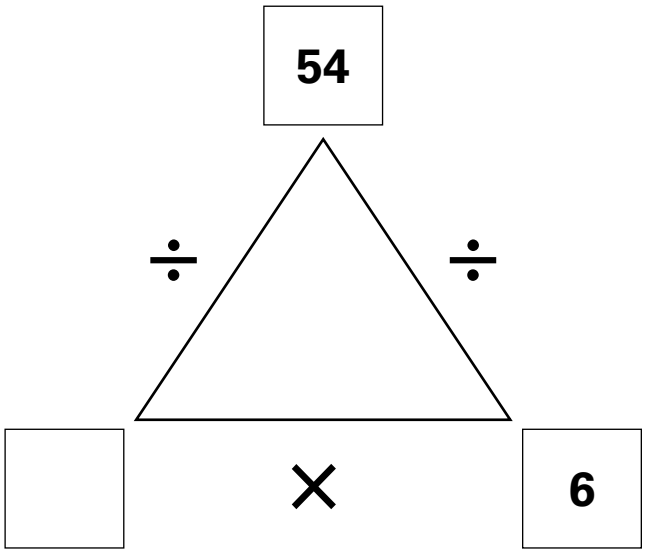
4. Each student in Mrs. Chang's class is getting their own writing journal. There are 9 students and she must divide 378 pieces of paper among them evenly. How many pages will there be in each journal?

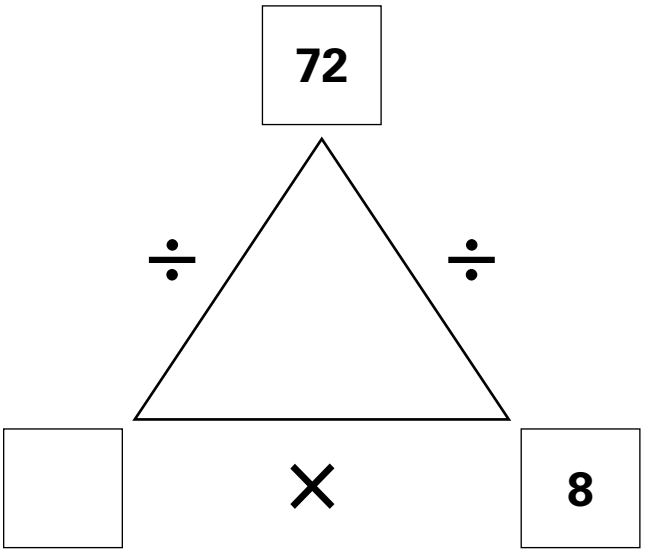
Equation: _____

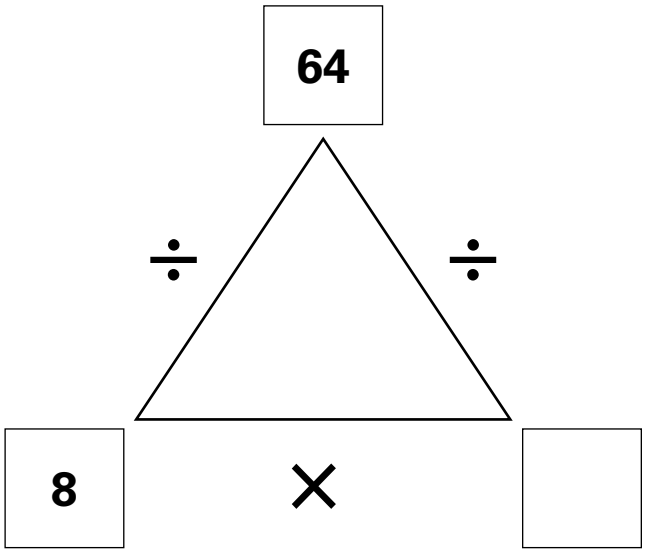
There will be _____ pages in each journal.

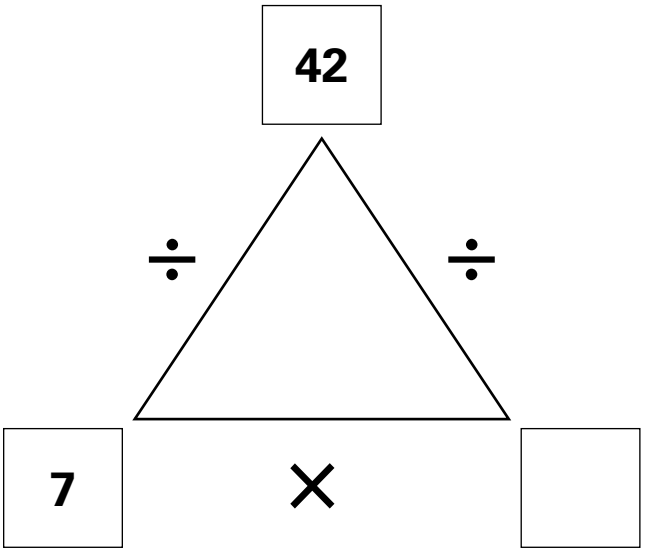
Number Triangles

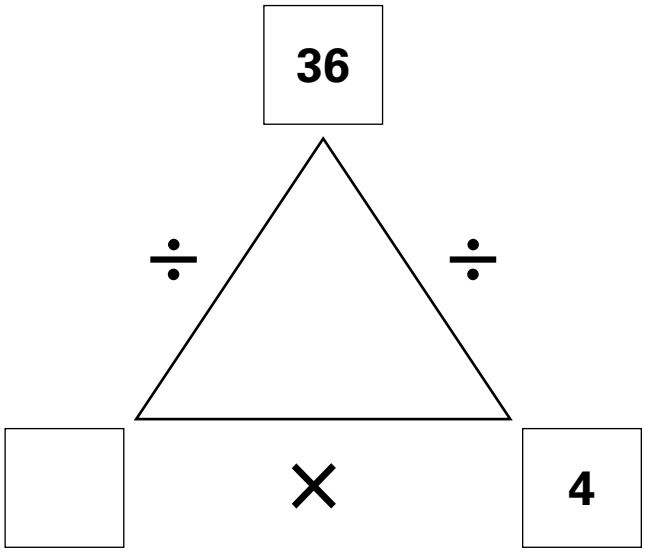












STEM Camp

At STEM Camp, there will be a room filled with STEM-based activities for exploring and fun. We need to create kits for each activity. The details regarding how the kits should be filled are listed below. Write a division equation and make a **base-10 drawing** to solve each problem.

1. 368 screws divided among 8 pinball kits

Equation: _____

2. 207 rubber bands divided among 3 slingshot kits

Equation: _____

3. 189 wheels divided among 9 racecar kits

Equation: _____

4. 318 gears divided among 6 robot kits

Equation: _____

STEM Stats

Review the example problem. Write a division equation to represent the problems and make a **base-10 drawing** to solve.

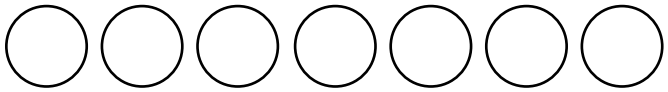
Example

I divide **154** robots evenly among **7** classrooms. How many robots go in each classroom?

Step 1

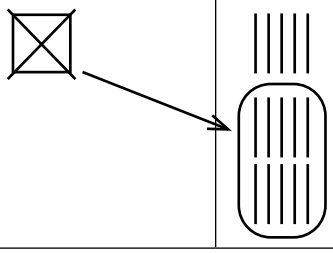
Write a division equation to represent the problem. Draw the number of circles indicated by the divisor.

154 ÷ **7** = ? **7** is the divisor, so draw **7** circles.



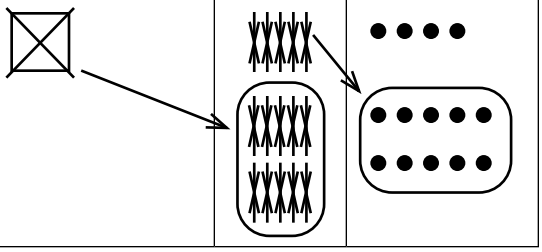
Step 2

Use base-10 drawings to draw the dividend. Exchange the hundred for tens.

Hundreds	Tens	Ones
		

Step 3

Divide the tens among the circles, crossing out as you go. Then trade any remaining tens for ones.

Hundreds	Tens	Ones
		

Step 4

Divide the ones among the circles and count the number of lines and dots in each circle. Then complete the division equation.

154 ÷ **7** = 22

1. Jim puts 364 blocks in 4 bins evenly. How many blocks go in each bin?

Equation: _____

2. Peg puts 396 keys in 9 rows evenly. How many keys go in each row?

Equation: _____

Lesson 24 Exit Ticket

Make a **base-10 drawing** to solve each problem and write a division equation to represent the problem.

1. 224 brownies need to be divided among 7 boxes. How many brownies should go in each box?

Hundreds	Tens	Ones

Equation: _____

2. 215 cookies need to be divided among 5 bags. How many cookies should go in each bag?

Hundreds	Tens	Ones

Equation: _____

Extra Practice: Division Time

In PE, the 4th-grade class completed the following number of activities in the given number of minutes. Divide to find how many of each activity was completed per minute by making a **base-10 drawing**. Write the division equation.

1. 465 sit-ups in 5 minutes

Equation: _____

2. 339 push-ups in 3 minutes

Equation: _____

3. 756 jumping jacks in 9 minutes

Equation: _____

4. 354 squats in 6 minutes

Equation: _____

Place Value Mat (Hundreds)

Hundreds	Tens	Ones

Place Value Mat (Hundreds)

Hundreds	Tens	Ones

Place Value Mat (Hundreds)

Hundreds	Tens	Ones

Place Value Mat (Hundreds)

Hundreds	Tens	Ones

Place Value Mat (Hundreds)

Hundreds	Tens	Ones

Place Value Mat (Hundreds)

Hundreds	Tens	Ones

Place Value Mat (Hundreds)

Hundreds	Tens	Ones

Place Value Mat (Hundreds)

Hundreds	Tens	Ones

Book Houses

Read the following problems. Model the problem using **base-10 blocks** or **base-10 drawings**. Write an equation and interpret the remainder.

1. There is a total of 143 books to distribute. A book house can hold up to 8 books. How many book houses will be needed to hold all the books?

Equation: _____

a. What does the whole number part of the quotient mean?

_____

b. What does the remainder mean?

_____

c. How many book houses will be needed to hold all the books? _____

2. There are 286 bookmarks. The students put an equal number of bookmarks in 6 book houses. How many bookmarks are in each book house?

Equation: _____

a. What does the whole number part of the quotient mean?

_____

b. What does the remainder mean? _____

c. How many bookmarks are in each book house? _____

3. Eli takes a book from the book house. It has 121 pages. He reads 9 pages every day. How many days will Eli need to read the book?

Equation: _____

a. What does the whole number part of the quotient mean?

_____

b. What does the remainder mean?

_____

c. How many days will Eli need to read the book? _____

Chapter Books

Read the problems and solve using **base-10 blocks** or **base-10 drawings**. Write an equation to show the solution and answer the questions.

1. Rob wrote 154 chapters and wants to divide them evenly among 9 books. How many chapters will go in each book?

Equation: _____

What does the remainder mean?

_____

_____

_____

What might happen to the remainder?

_____

_____

2. Nina needs to read 178 pages in 5 days. She plans to read the same number of pages each day. How many pages should Nina read each day?

Equation: _____

What does the remainder mean?

_____

_____

_____

What might happen to the remainder?

_____

_____

3. Glen is donating 367 books to kids. He wants to give each kid 8 books. How many kids can he donate books to?

Equation: _____

What does the remainder mean?

_____

_____

_____

What might happen to the remainder?

_____

_____

4. Ms. Brown has 263 books in her library. She can fit 4 books in a book bag. How many book bags does she need to hold all the books?

Equation: _____

What does the remainder mean?

_____

_____

_____

What might happen to the remainder?

_____

_____

Lesson 25 Exit Ticket

Read the following problems. Model each problem using **base-10 blocks** or **base-10 drawings**. Write an equation, interpret the remainder, and solve.

1. Jen has 65 beads that she is going to use to make bracelets. She needs to put 6 beads on each bracelet. How many bracelets can she make?

Equation: _____

a. What does the whole number part of the quotient mean?

_____

b. What does the remainder mean?

_____

c. How many bracelets can she make? _____

2. Primo has 173 ears of corn he has to pack into 4 boxes. He needs to put the same number of ears in each box. How many ears of corn go in each box?

Equation: _____

a. What does the quotient mean?

_____

b. What does the remainder mean?

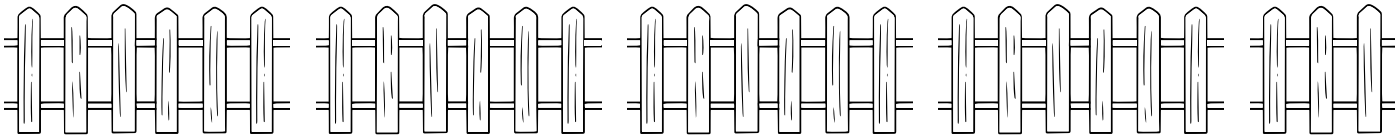
_____

c. How many ears of corn will be in each box? _____

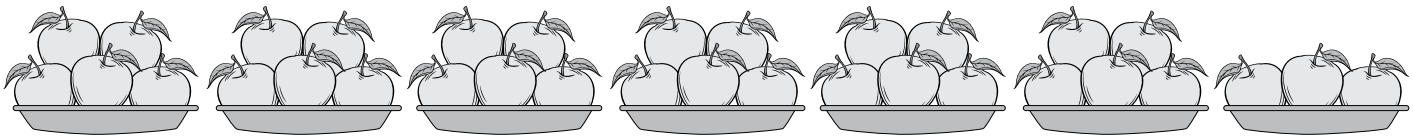
Extra Practice: Silly Word Problems

Look at the pictures. Think about the total number of objects, the number of equal groups, and the remainder. Write a word problem to match the picture. Try to be as creative and funny as possible! Write a division equation to match the picture and the problem.

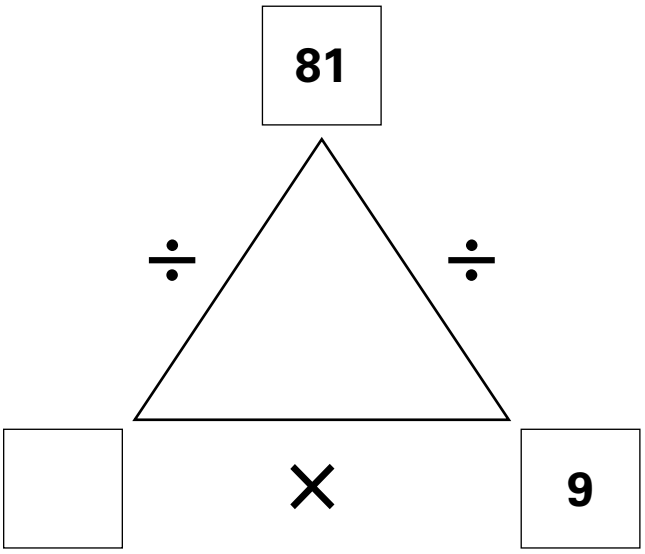
1.

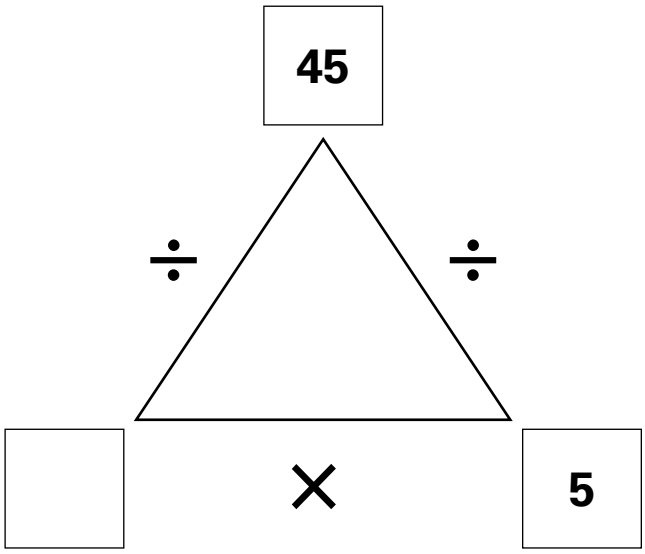


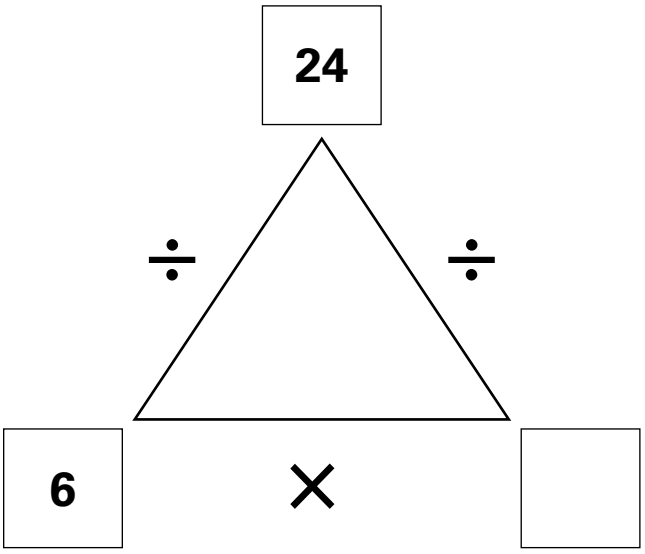
2.

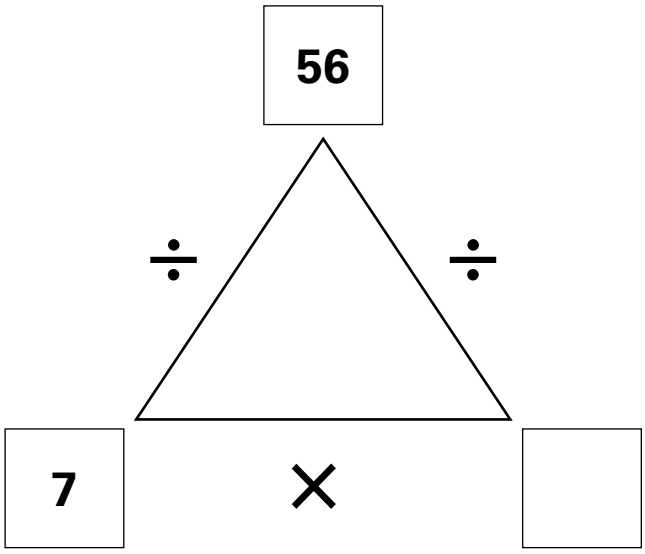


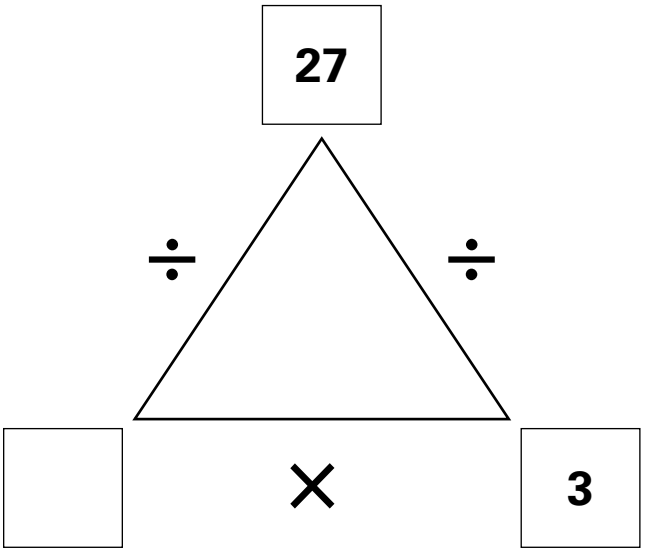
Number Triangles

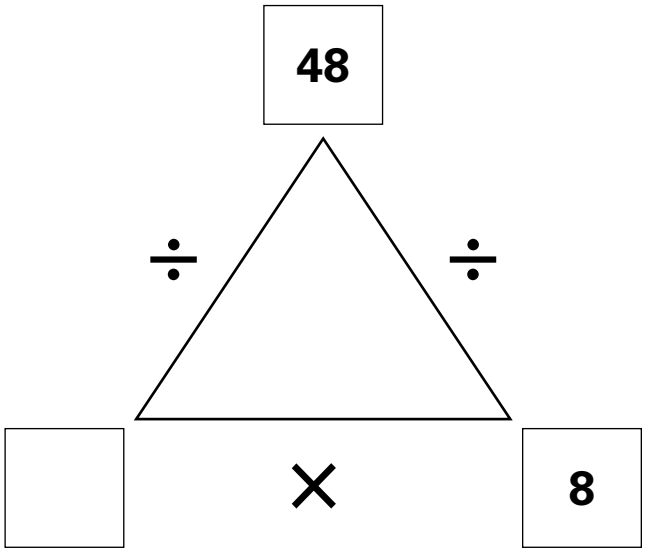












Place Value Mat (Hundreds)

Hundreds	Tens	Ones

Place Value Mat (Hundreds)

Hundreds	Tens	Ones

Place Value Mat (Hundreds)

Hundreds	Tens	Ones

Place Value Mat (Hundreds)

Hundreds	Tens	Ones

Place Value Mat (Hundreds)

Hundreds	Tens	Ones

Place Value Mat (Hundreds)

Hundreds	Tens	Ones

Place Value Mat (Hundreds)

Hundreds	Tens	Ones

Place Value Mat (Hundreds)

Hundreds	Tens	Ones

Place Value Mat (Hundreds)

Hundreds	Tens	Ones

Place Value Mat (Hundreds)

Hundreds	Tens	Ones

Place Value Mat (Hundreds)

Hundreds	Tens	Ones

Basketball Fundraiser

Write an equation and use the partial quotients algorithm to solve. If there is a remainder, explain how it affects the answer.

1. At a fundraiser for school supplies, the team collects 4,266 pencils. They can make bundles of up to 9 pencils with a rubber band. How many rubber bands do they need to bundle all the pencils?

Equation: _____ Is there a remainder? _____

Explain how the remainder affects the answer. _____

_____

_____

How many rubber bands do they need? _____

2. The team collects 3,271 coats. They can fit 8 coats in a box. How many boxes do they need to store the coats?

Equation: _____ Is there a remainder? _____

Explain how the remainder affects the answer. _____

_____

_____

How many boxes do they need? _____

3. The team collects 5,723 teddy bears. To be fair, they will donate an equal number of the bears to 7 hospitals. How many bears will each hospital get?

Equation: _____ Is there a remainder? _____

Explain how the remainder affects the answer. _____

_____

_____

How many bears will each hospital get? _____

Partial Quotients

Review the example problem. Then, solve the problems using partial quotients.

Example

Divide **3,842** ÷ **5** using partial quotients.

Step 1

Determine how many times the divisor can go into the thousands place of the dividend.

5 can go into **3,842** 700 times. 700 is the first partial quotient.

$$\begin{array}{r} 700 \\ 5\overline{)\,3842} \end{array}$$

Step 2

Multiply the partial quotient (700) by the divisor (**5**). Subtract the product (3,500) from the dividend (**3,842**).

$$\begin{array}{r} 700 \\ 5\overline{)\,3842} \\ -\,3500 \\ \hline 342 \end{array}$$

Step 3

Repeat the process, dividing the divisor into the remaining dividend.

$$\begin{array}{r} 8 \\ 60 \\ 700 \\ 5\overline{)\,3842} \\ -\,3500 \\ \hline 342 \\ -\,300 \\ \hline 42 \\ -\,40 \\ \hline 2 \end{array}$$

Step 4

Add the partial quotients to solve the division problem.

700 + 60 + 8 = 768

3,842 ÷ **5** = 768, R2

8,472 ÷ 9 =

_____

$9\overline{)\,8472}$

3,185 ÷ 4 =

_____

$4\overline{)\,3185}$

7,483 ÷ 3 =

_____

$3\overline{)\,7483}$

3,471 ÷ 7 =

_____

$7\overline{)\,3471}$

Lesson 26 Exit Ticket

Part 1: Solve using partial quotients. Write the remainder if there is one.

1. 6,174 ÷ 2 = _____

$2\overline{)\ 6174}$

2. 4,916 ÷ 7 = _____

$7\overline{)\ 4916}$

Part 2: Write an equation and use the partial quotients algorithm to solve. If there is a remainder, explain how it affects the answer.

3. There are 1,322 students at Myers Elementary. The nurse takes 6 students at a time to give them their annual vision and hearing tests. How many groups of students will the nurse take for their tests?

$6\overline{)\ 1322}$

Equation: _____ Is there a remainder? _____

Explain how the remainder affects the answer.

_____

_____

How many groups of students does the nurse test? _____

Extra Practice: Write and Solve

Write a word problem involving a 4-digit number divided by a 1-digit number, including a remainder. Follow the steps below to develop your problem. Then trade with a partner and solve their problem.

What is the setting for your word problem? _____

What item in the word problem will be the 4-digit number? _____

What types of groups will the 4-digit number be divided into? _____

What should happen with any "leftovers" in the problem? _____

Write your word problem below:

_____

_____

_____

_____

Solve the word problem using partial quotients.

What is the remainder from the problem and what does it represent?

_____

_____

Assessment

Unit 4 Assessment

1. Divide using base-10 drawings. Complete the equation.

140 ÷ 5 = _____

Hundreds	Tens	Ones

2. During lunch, 256 students need to sit in the cafeteria. There are 8 tables in the cafeteria. If the same number of students sit at each table, how many students sit at one table? Write an equation and use a base-10 drawing to solve.

Hundreds	Tens	Ones

Equation: _____

_____ students sit at one table.

3. Kelsey made 235 cookies for the bake sale. She places the cookies evenly in 5 boxes. How many cookies go in each box? Write an equation and use a base-10 drawing to solve.

Hundreds	Tens	Ones

Equation: _____

There are _____ cookies in each box.

4. Divide using base-10 drawings. Complete the equation and identify the remainder if there is one.

662 ÷ 6 = _____, R_____

Hundreds	Tens	Ones

5. Dani has 47 snow globes in her collection. She is moving and needs to pack them carefully. Each box can fit 6 snow globes. How many boxes does she need? Write an equation and use a base-10 drawing to solve. If there is a remainder, explain how it affects the solution.

Hundreds	Tens	Ones

Equation: _____

How does the remainder affect the solution? _____

_____

Dani needs _____ boxes.

6. Amal has 897 baseball cards. He wants to place them in 8 books. He wants to put the same number of cards in each book. How many cards will be in one book? Write an equation and use a base-10 drawing to solve. If there is a remainder, explain how it affects the solution.

Hundreds	Tens	Ones

Equation: _____

How does the remainder affect the solution? _____

_____

_____

There are _____ cards in one book.

7. The fourth-grade teachers collect $2,819 in donations to purchase books for their classrooms. Each book costs $8. How many books can the teachers buy? Use the partial quotients algorithm to solve. Don't forget to consider how the remainder affects your solution.

$8\overline{)\ 2819}$

2,819 ÷ 8 = _____

The teachers can buy _____ books.

8. In a writing contest, 4 students win prize money. They will split $6,732 equally. How much prize money will each student receive? Will there be money left over? Write an equation and use the partial quotients algorithm to solve.

$4\overline{)\ 6732}$

Equation: _____

Will there be money left over? If so, how much?

_____

Each student will receive _____ dollars.

9. Divide using the partial quotients algorithm. Show your work. Complete the equation and identify the remainder if there is one.

$5\overline{)\ 3074}$

3,074 ÷ 5 =_____, R_____

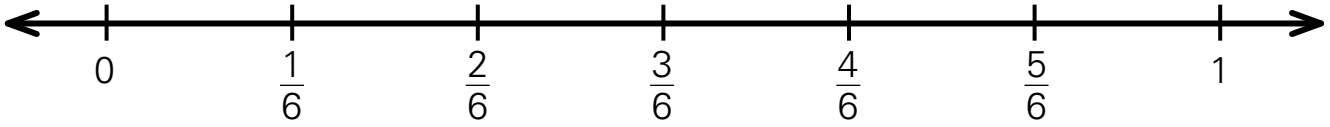
10. Divide using the partial quotients algorithm. Show your work. Complete the equation and identify the remainder if there is one.

$3\overline{)\ 1023}$

1,023 ÷ 3 =_____, R_____

Unit 4 Cumulative Review

1. Look at the tape diagram. Write 1 as a whole number fraction.



1 = _____

2. What is 714 rounded to the nearest hundred? _____

3. Multiply.

5 × 60 = _____

4. Juan has 30 strawberries that he is dividing evenly among 5 bowls. How many strawberries are in each bowl?

_____ ÷ _____ = _____

There are _____ strawberries in each bowl.

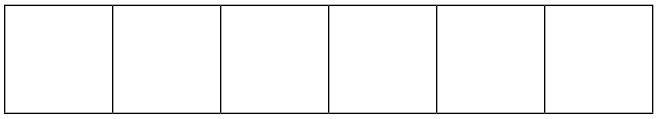
5. Riana is in a group that makes hats for babies in the hospital. Last week they made 31 hats. This week they made 19 hats. All of the hats will be split evenly between 2 hospitals. How many hats will each hospital receive?

Each hospital will receive _____ hats.

6. Write 835,182 in word form. _____

_____

7. Shade 4 squares. What fraction do the shaded squares represent?



_____

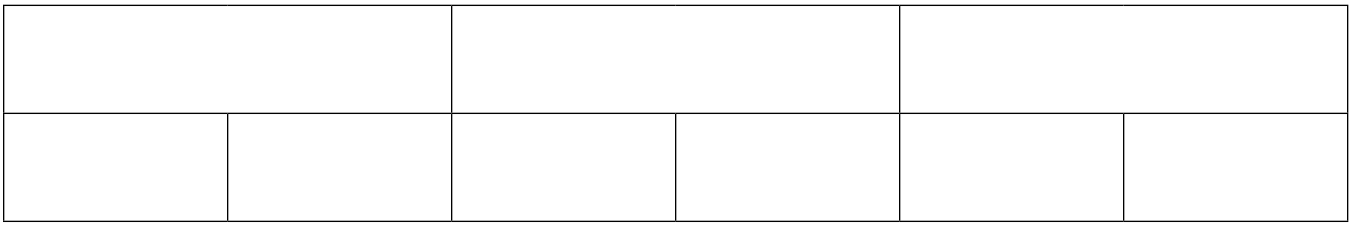
8. Add.

324 + 578 = _____

9. Subtract.

5,674 – 3,742 = _____

10. Find a fraction that is equivalent to $\frac{2}{3}$. Use the tape diagram to help.



$\frac{2}{3}$ = _____

11. What are all the factors of 32?

_____

12. Multiply.

700 × 8 = _____

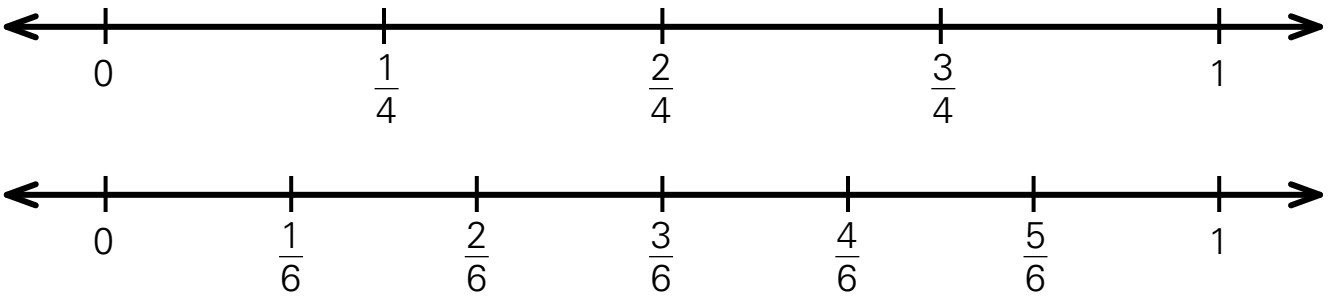
13. Multiply.

67 × 32 = _____

14. Divide.

534 ÷ 7 = _____

15. Compare the fractions.



$\frac{3}{4}$ ◯ $\frac{3}{6}$

Unit 5:

Fraction Equivalency and Comparisons

Catapult Learning™

The Confectioner's Challenge

Part 1: Use **fraction tiles** to find equivalent fractions.

1. Silas was given a $\frac{1}{6}$ measuring cup and needs to measure $\frac{2}{3}$ of a cup.

How many $\frac{1}{6}$ cups equal $\frac{2}{3}$ cup? _____

$\frac{2}{3}$ = _____

2. Fiona was given a $\frac{1}{3}$ measuring teaspoon and needs to measure 1 full teaspoon.

How many $\frac{1}{3}$ teaspoons equal 1 teaspoon? _____

$\frac{1}{1}$ = _____

Part 2: Use tape diagrams to find equivalent fractions and complete the equation.

3. Find a fraction that is equivalent to $\frac{2}{4}$.

$\frac{2}{4}$ = _____

4. Find a fraction that is equivalent to $\frac{8}{12}$.

$\frac{8}{12}$ = _____

Bake-Off

Review the example problem. Then solve the problems by drawing a **tape diagram** to find equivalent fractions.

Example

Roberto's recipe calls for $\frac{2}{3}$ cup of sugar. He only has a $\frac{1}{6}$ measuring cup. How many $\frac{1}{6}$ cups equal $\frac{2}{3}$ cup?

Step 1

Divide the top tape into parts equal to the denominator of the original fraction. Shade parts equal to the numerator.

$\frac{2}{3}$ = 3 parts in the whole, 2 parts shaded.

$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$

Step 2

Divide the bottom tape into parts equal to the unit fraction used to find an equivalent fraction.

$\frac{1}{6}$ = 6 parts

$\frac{1}{3}$		$\frac{1}{3}$		$\frac{1}{3}$	
$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$

Step 3

Shade in the amount needed for the recipe and solve.

$\frac{1}{3}$		$\frac{1}{3}$		$\frac{1}{3}$	
$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$	$\frac{1}{6}$

$\frac{2}{3} = \frac{4}{6}$

1. Martin needs to shred $\frac{3}{4}$ cup of carrots for carrot cake. He does not have a $\frac{3}{4}$ measuring cup, but he does have a $\frac{1}{8}$ measuring cup.

How many $\frac{1}{8}$ cups equal $\frac{3}{4}$ cup? _____

$\frac{3}{4}$ = _____

2. Shana needs $\frac{1}{2}$ teaspoon of baking soda for brownies. She only has a $\frac{1}{4}$ measuring teaspoon.

How many $\frac{1}{4}$ teaspoons equal $\frac{1}{2}$ teaspoon? _____

$\frac{1}{2}$ = _____

3. $\frac{2}{3}$ = _____

4. $\frac{2}{2}$ = _____

5. $\frac{2}{8}$ = _____

Lesson 28 Exit Ticket

Part 1: Use **fraction tiles** to find an equivalent fraction.

1. $\frac{3}{4} =$ _____

2. $\frac{1}{3} =$ _____

Part 2: Use the tape diagrams to find equivalent fractions.

3. $\frac{2}{8} = \frac{\square}{4}$

4. $\frac{2}{4} = \frac{\square}{6}$

Extra Practice: Fraction Match

Part 1: Draw a line to match the equivalent fractions below. Use **fraction tiles** or **tape diagrams** to find the equivalent fractions.

$\frac{2}{2}$	$\frac{1}{2}$
$\frac{3}{4}$	$\frac{2}{12}$
$\frac{1}{6}$	$\frac{1}{4}$
$\frac{4}{8}$	$\frac{1}{3}$
$\frac{4}{12}$	$\frac{6}{6}$
$\frac{2}{8}$	$\frac{6}{8}$

Part 2: For each fraction shown, use **fraction tiles** or **tape diagrams** to find two equivalent fractions.

1. $\frac{1}{2} =$ _____ = _____

2. $\frac{2}{3} =$ _____ = _____

3. $\frac{3}{4} =$ _____ = _____

4. $\frac{1}{4} =$ _____ = _____

Tape Diagrams

Tape Diagrams

Book Challenge

Part 1: Using **double number lines**, determine the fraction of the chapters each student read.

1. Leah read $\frac{5}{6}$ of a 12-chapter book. How many chapters did Leah read?

$\frac{5}{6} = \frac{\square}{12}$ Leah read _____ chapters.

2. Eduardo read $\frac{3}{4}$ of an 8-chapter book. How many chapters did Eduardo read?

$\frac{3}{4} = \frac{\square}{8}$ Eduardo read _____ chapters.

3. Salina read $\frac{4}{5}$ of a 15-chapter book. How many chapters did Salina read?

$\frac{4}{5} = \frac{\square}{15}$ Salina read _____ chapters.

4. Omar read $\frac{1}{1}$ of a 9-chapter book. How many chapters did Omar read?

$\frac{1}{1} = \frac{\square}{9}$ Omar read _____ chapters.

Part 2: Use **double number lines** to find the equivalent fractions.

5. $\frac{2}{3} = \frac{\square}{6}$

6. $\frac{1}{4} = \frac{\square}{8}$

7. $\frac{5}{6} = \frac{\square}{12}$

8. $\frac{3}{4} = \frac{\square}{8}$

Classroom Competition

Review the example problem. Then use **double number lines** to find the equivalent fractions.

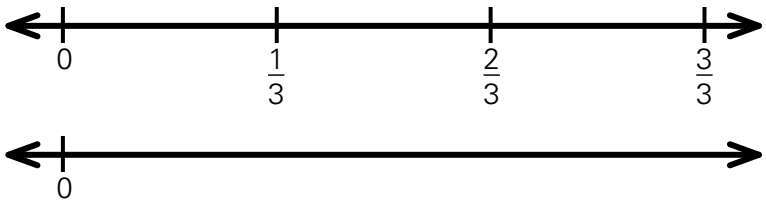
Example

Mr. Bridgers challenges all his students to read $\frac{1}{3}$ of a book this week. Wyatt's book has **6** chapters. How can he find a fraction equivalent to $\frac{1}{3}$ so he knows how many chapters he should read?

Step 1

Divide the top number line according to the denominator of the given fraction. Label the fractions on the number line.

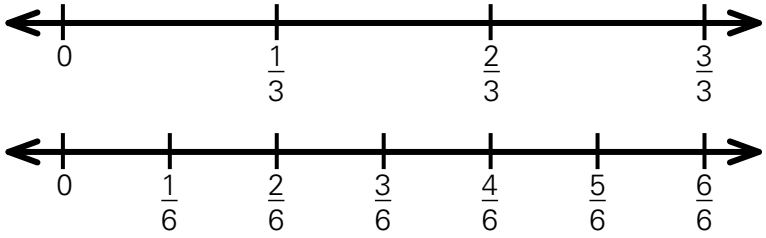
The given fraction is $\frac{1}{3}$, so the top number line should be divided into 3 equal parts.



Step 2

Divide the bottom number line according to the number of parts the equivalent fraction should have.

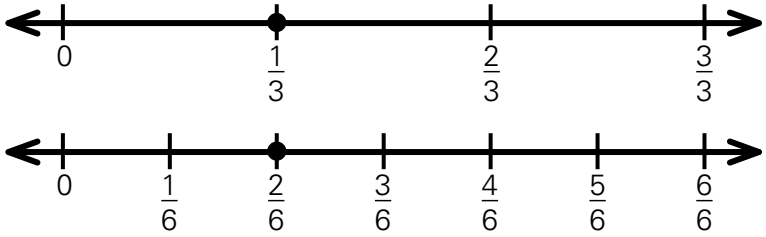
Since Wyatt's book has **6** chapters, each chapter is $\frac{1}{6}$ of the book. The equivalent fraction should have **6** parts.



Step 3

Find the given fraction on the top line. The equivalent fraction is below it on the bottom line.

$\frac{1}{3} = \frac{2}{6}$ Wyatt should read 2 chapters.



1. $\frac{\square}{7} = \frac{10}{14}$

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

3. $\frac{3}{5} = \frac{\square}{10}$

4. $\frac{4}{6} = \frac{\square}{3}$

5. $\frac{\square}{12} = \frac{2}{3}$

6. $\frac{\square}{4} = \frac{6}{12}$

7. $\frac{\square}{20} = \frac{8}{10}$

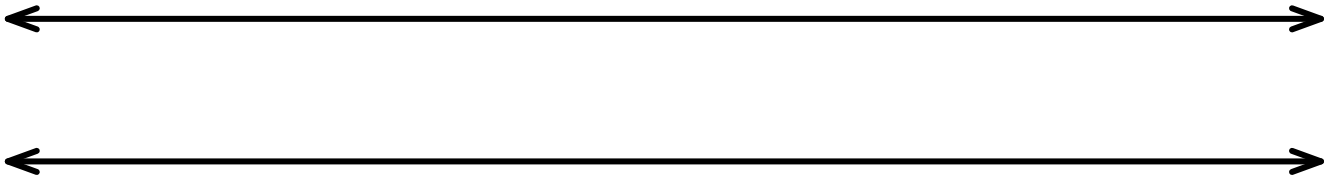
8. $\frac{2}{8} = \frac{\square}{4}$

9. $\frac{8}{12} = \frac{\square}{3}$

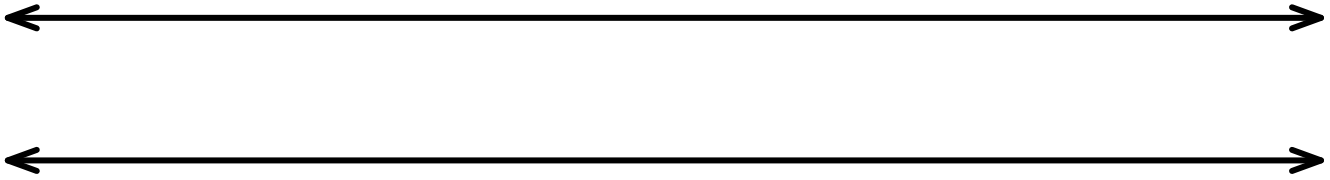
Lesson 29 Exit Ticket

Find the equivalent fractions using double number lines.

1. $\frac{2}{3} = \frac{\square}{9}$



2. $\frac{4}{6} = \frac{\square}{12}$

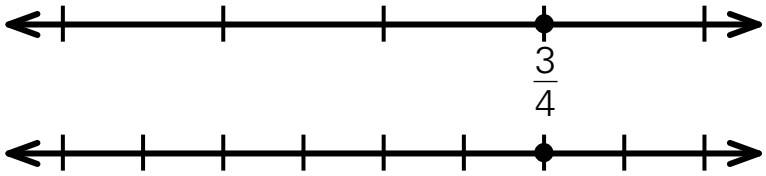


3. $\frac{3}{4} = \frac{\square}{8}$

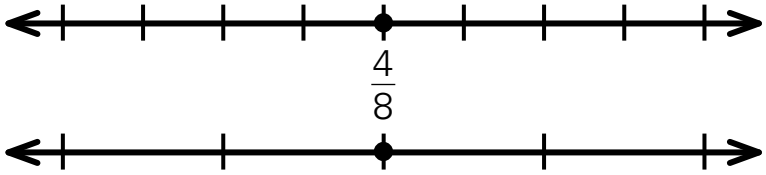
4. $\frac{1}{2} = \frac{\square}{6}$

Extra Practice: Number Line Match

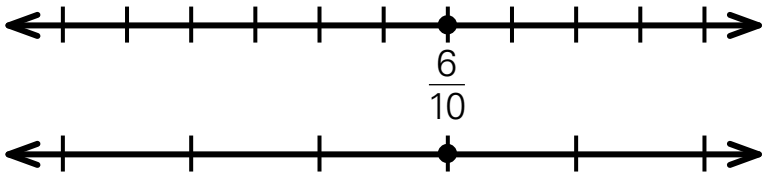
Review the double number lines below. Draw a line to match the double number line to its equivalent fraction.



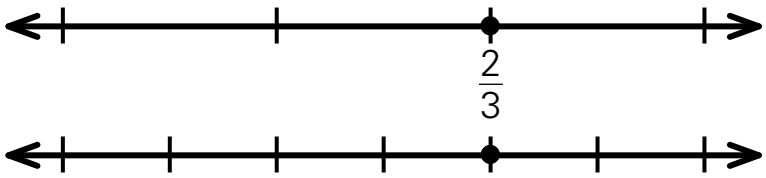
$\frac{4}{6}$



$\frac{2}{4}$



$\frac{6}{8}$



$\frac{3}{5}$

Ratio Tables

(x)	(y)

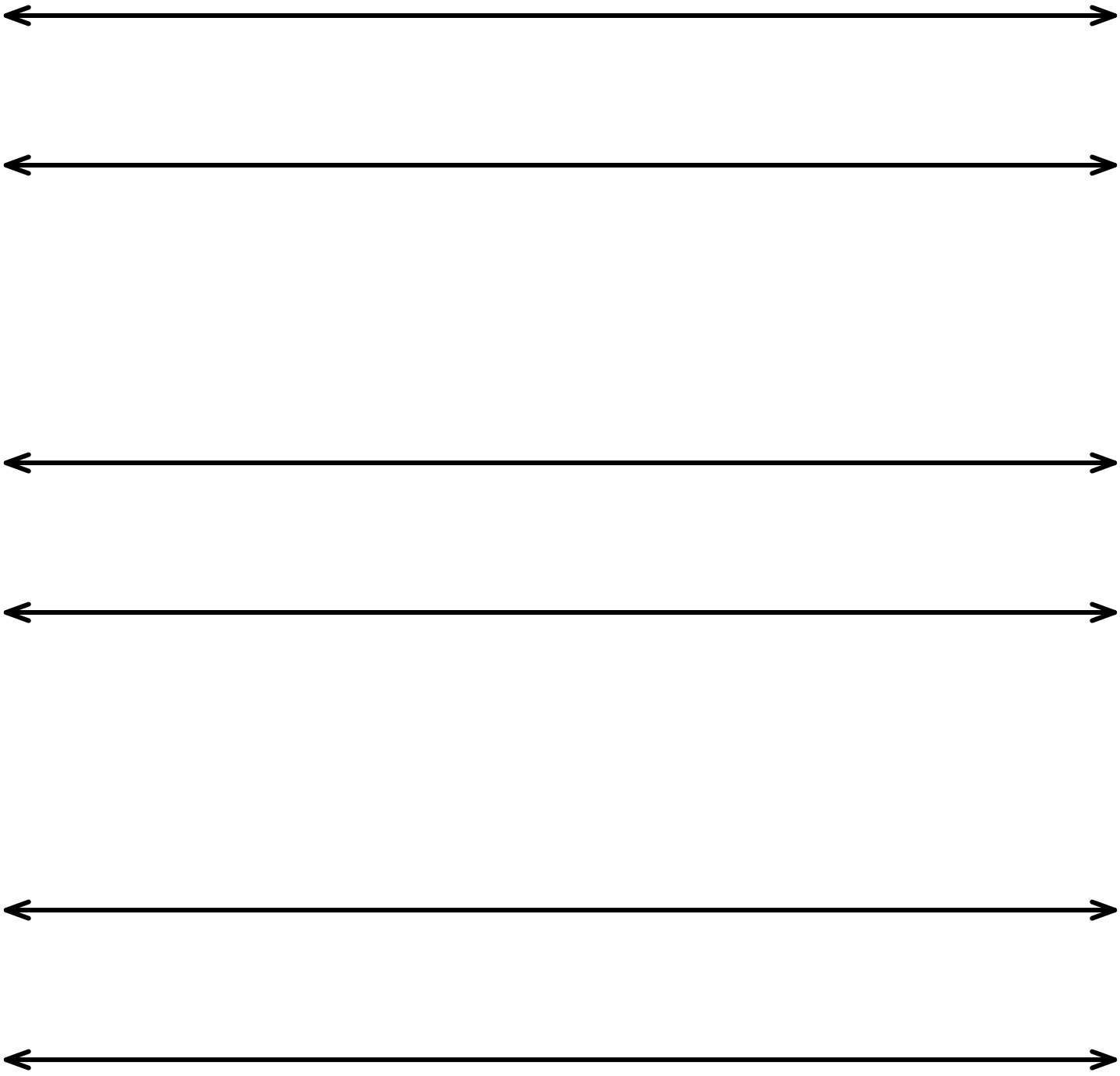
(x)	(y)

(x)	(y)

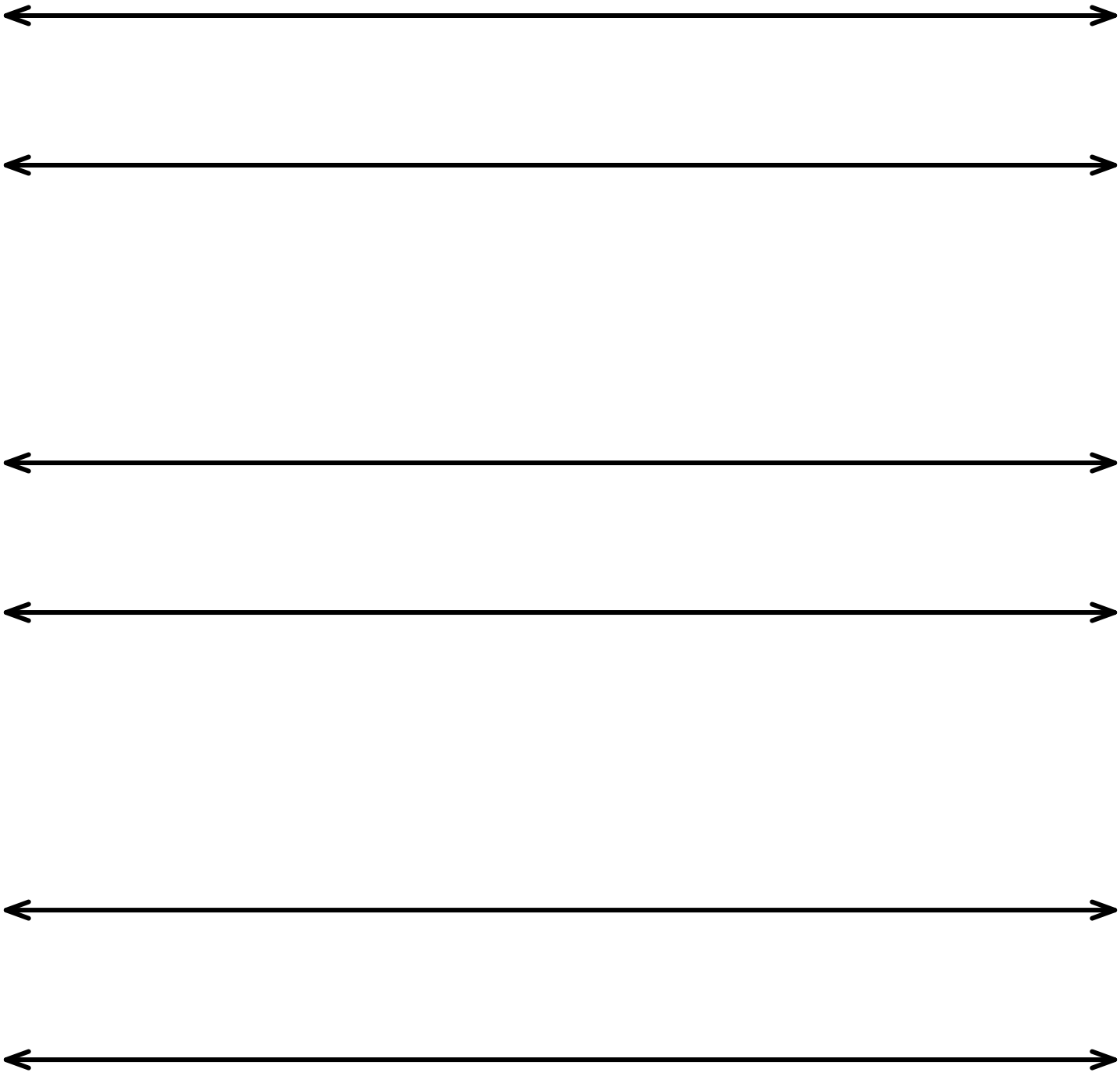
(x)	(y)

Tape Diagrams

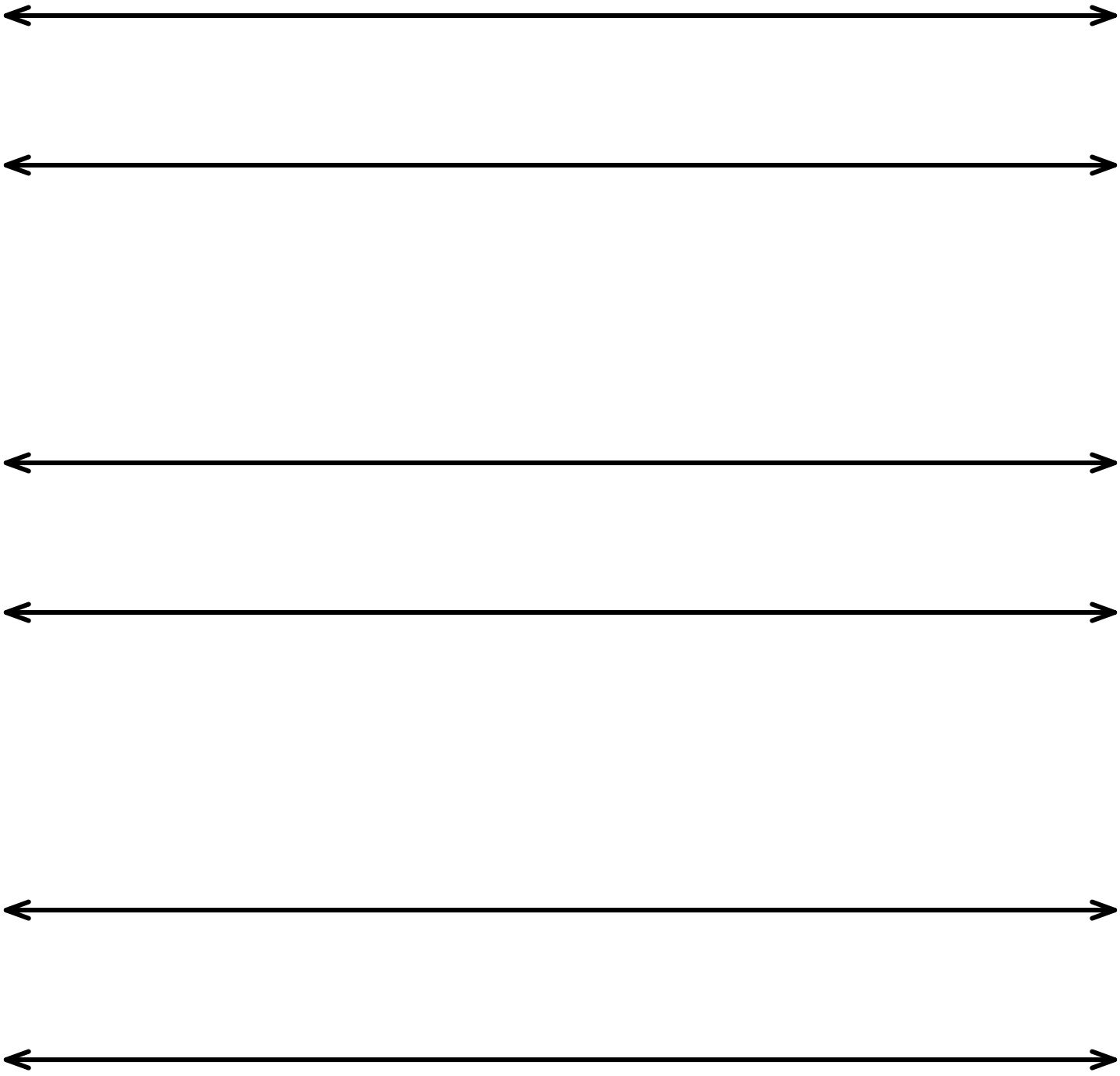
Double Number Lines



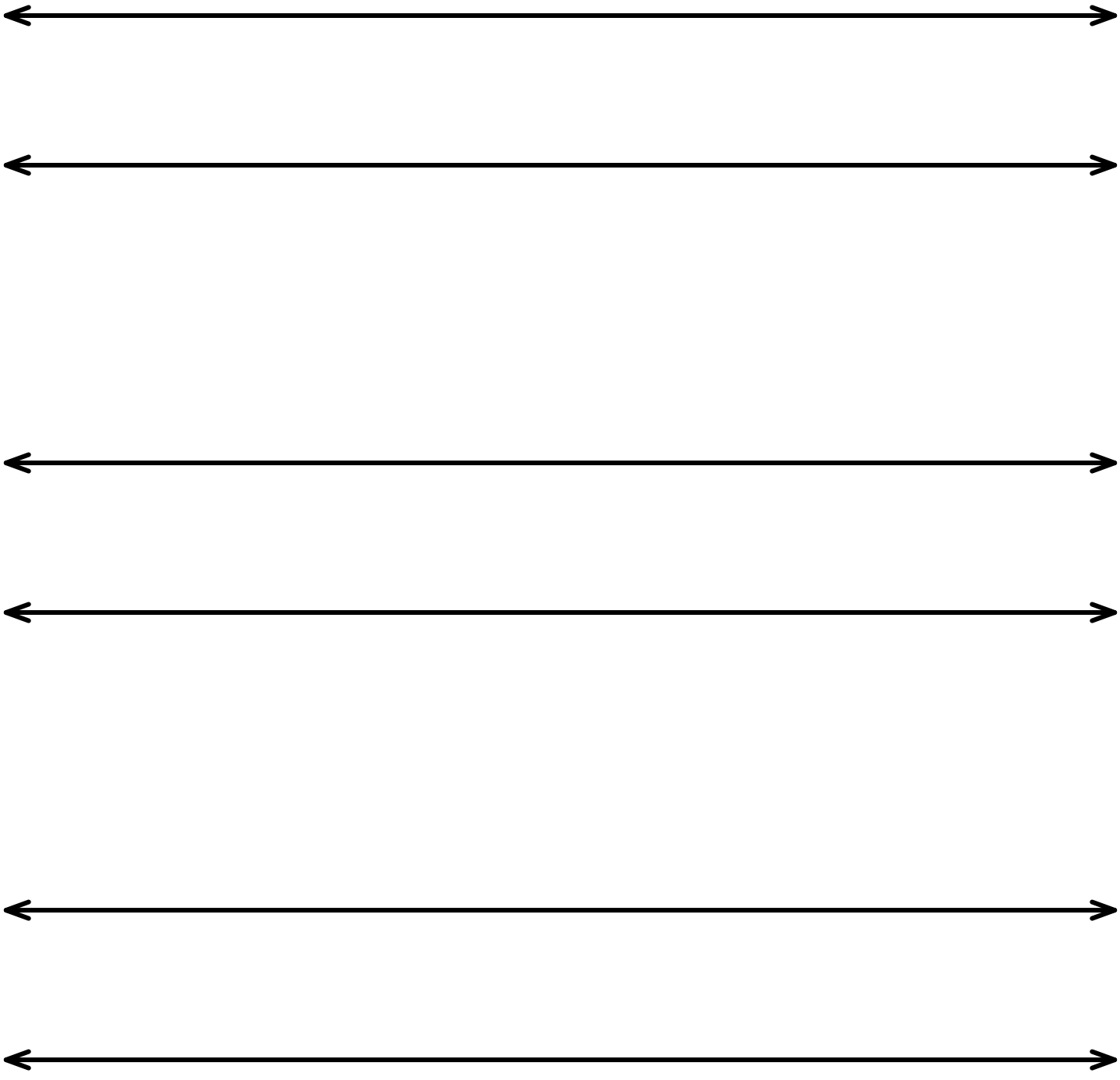
Double Number Lines



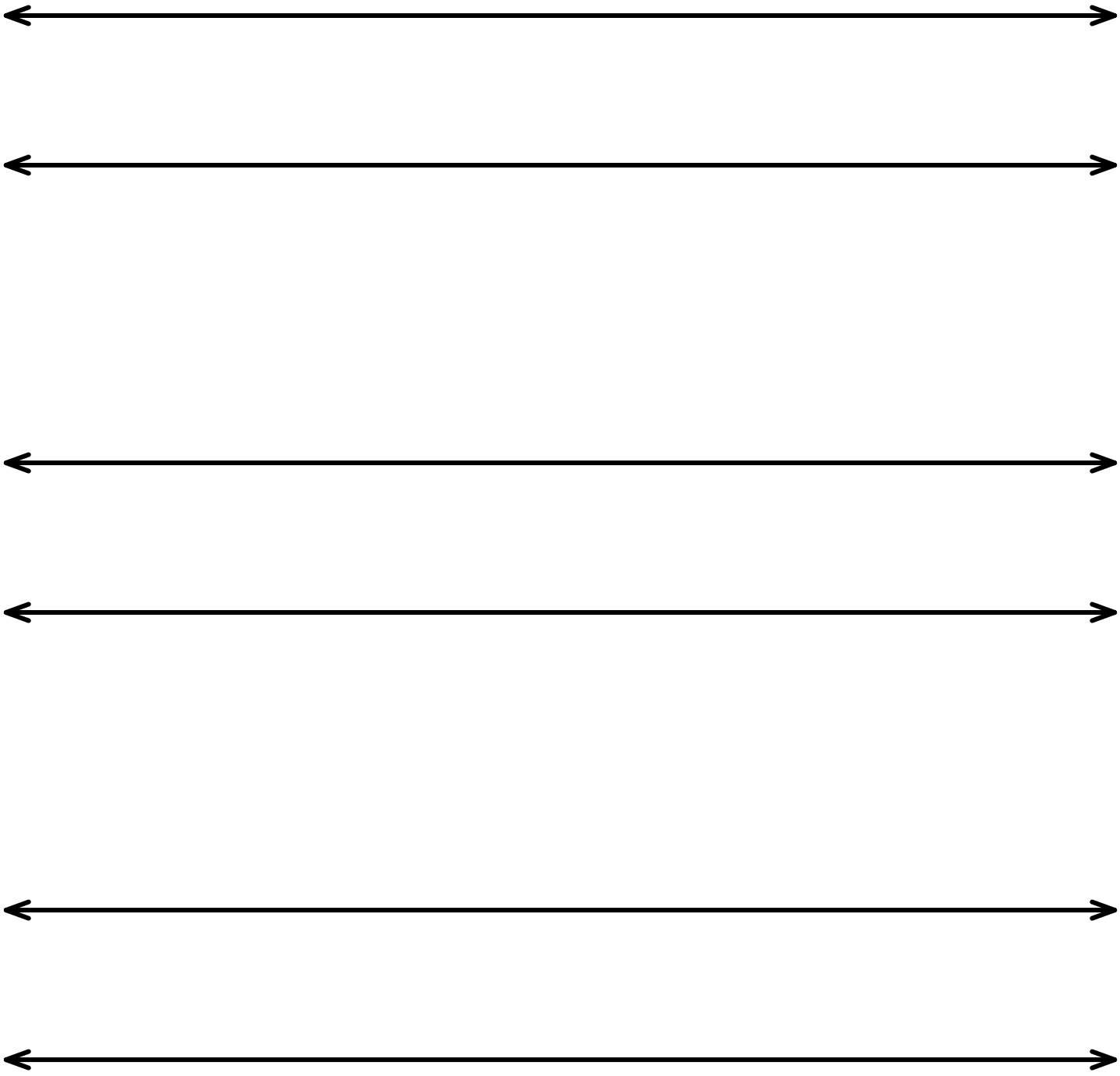
Double Number Lines



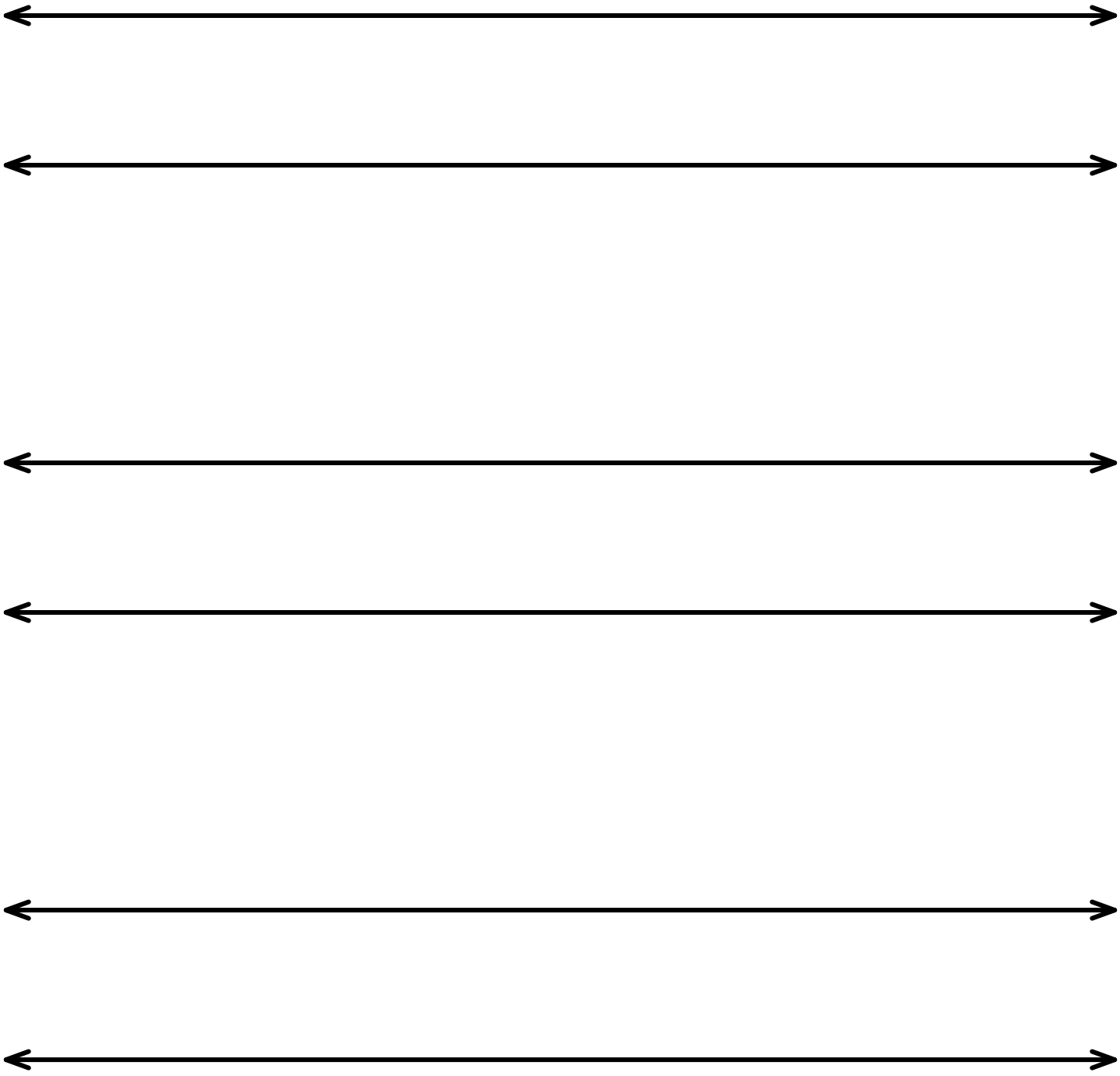
Double Number Lines



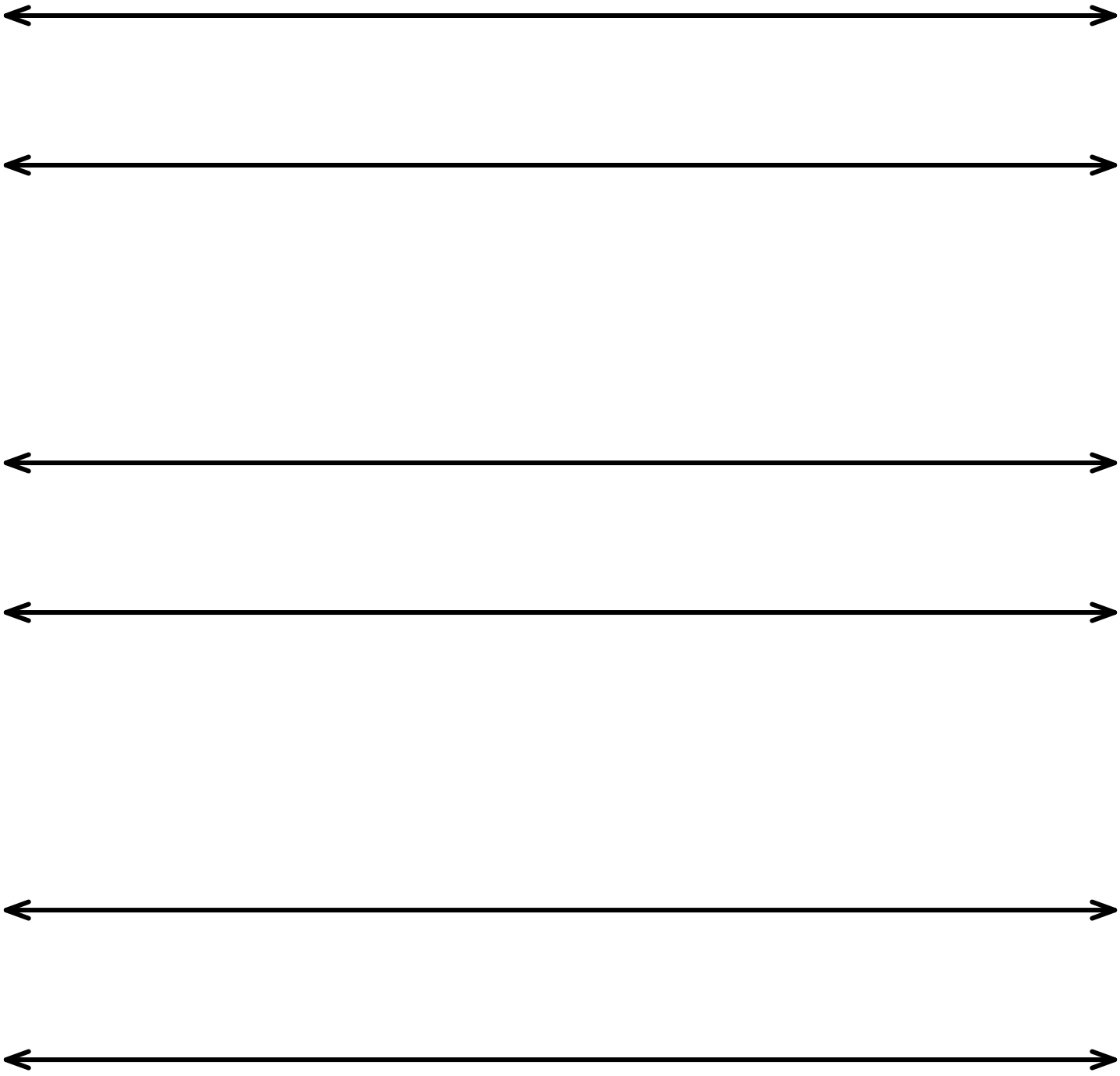
Double Number Lines



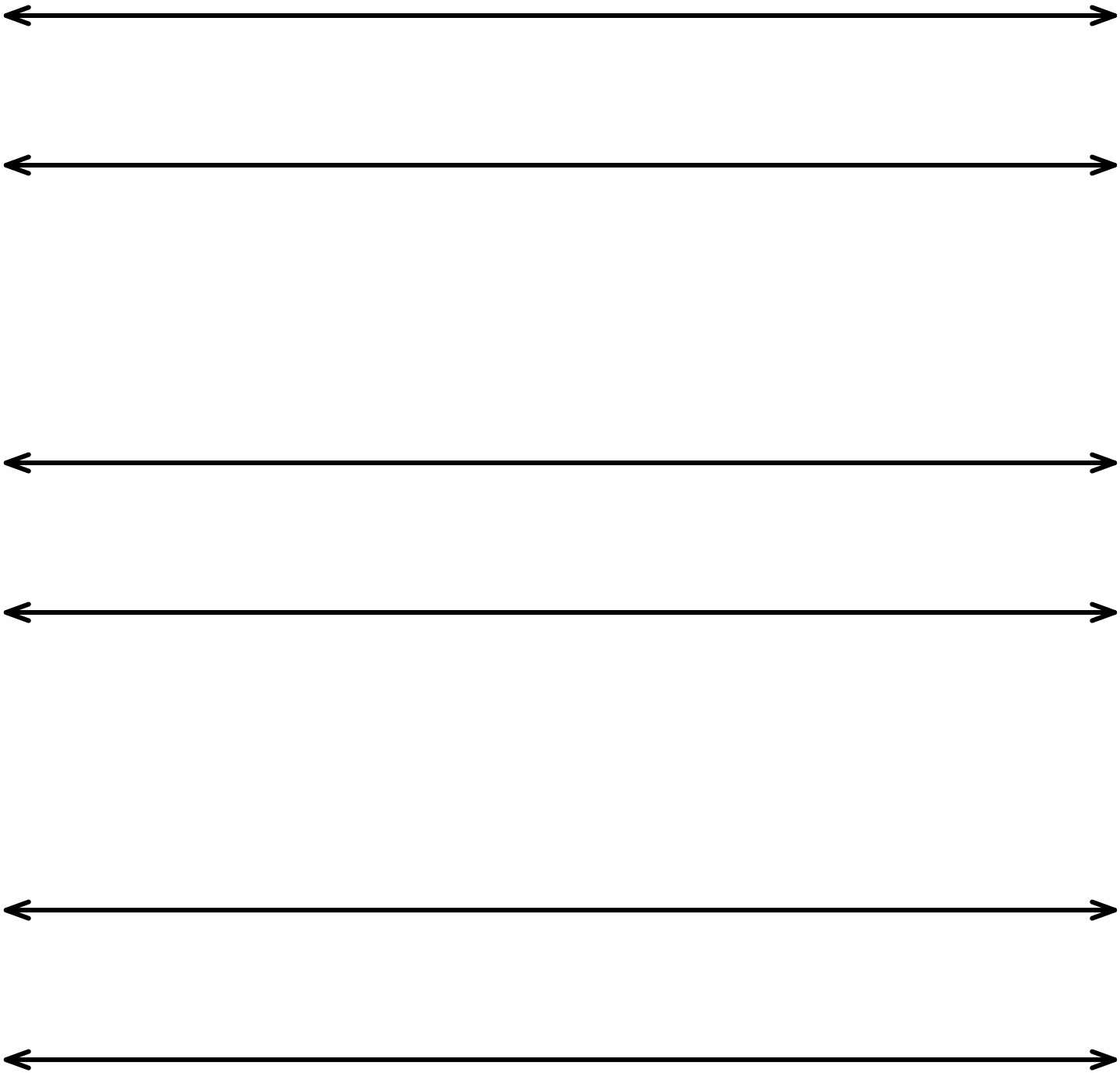
Double Number Lines



Double Number Lines



Double Number Lines



Video Games

Use **double number lines** to find an equivalent fraction and predict the fraction of levels students will complete in a different version of the game. Write the equivalent fractions.

1. Katiana completed $\frac{8}{10}$ of the levels of *Monkey Mayhem*. Predict what fraction she would complete if there were 5 levels.

_____ = _____ She would complete _____ levels.

2. Felipe completed $\frac{3}{4}$ of the levels of *Space Soldiers*. Predict what fraction he would complete if there were 8 levels.

_____ = _____ He would complete _____ levels.

3. Brad completed $\frac{9}{9}$ of the levels of *Road Blox*. Predict what fraction he would complete if there were 3 levels.

_____ = _____ He would complete _____ levels.

4. Kenya completed $\frac{2}{8}$ of the levels of *Turtle Time*. Predict what fraction she would complete if there were 4 levels.

_____ = _____ She would complete _____ levels.

Equivalent or Not?

Review the example problem. Then use multiplication or division to find or test equivalent fractions. Show your work.

Example

Is $\frac{\mathbf{2}}{\mathbf{3}}$ equivalent to $\frac{\mathbf{6}}{\mathbf{12}}$?

Step 1	Step 2	Step 3	Step 4
Use the fractions to write a multiplication or division equation. Multiplication: $\frac{\mathbf{2}}{\mathbf{3}} \times \frac{?}{?} = \frac{\mathbf{6}}{\mathbf{12}}$ Division: $\frac{\mathbf{6}}{\mathbf{12}} \div \frac{?}{?} = \frac{\mathbf{2}}{\mathbf{3}}$	Find the factor the denominator is multiplied or divided by to determine the equivalent fraction's denominator. Multiplication: $3 \times ? = 12$ $3 \times 4 = 12$ Division: $6 \div ? = 2$ $6 \div 3 = 2$	Multiply or divide the numerator of the first fraction by that same factor. Multiplication: $2 \times 4 = 8$ $\frac{\mathbf{2}}{\mathbf{3}} \times \frac{4}{4} = \frac{8}{12}$ Division: $12 \div 3 = 4$ $\frac{\mathbf{6}}{\mathbf{12}} \div \frac{3}{3} = \frac{2}{4}$	If the fraction that you find is the same as the one in the equation, the fractions are equivalent. $\frac{8}{12} \neq \frac{\mathbf{6}}{\mathbf{12}}$ $\frac{2}{4} \neq \frac{\mathbf{2}}{\mathbf{3}}$ The fractions are not equivalent.

1. Is $\frac{6}{8}$ equivalent to $\frac{3}{4}$? _____

2. Is $\frac{1}{3}$ equivalent to $\frac{2}{12}$? _____

3. Is $\frac{3}{6}$ equivalent to $\frac{6}{12}$? _____

4. Is $\frac{3}{9}$ equivalent to $\frac{1}{3}$? _____

5. What is a fraction equivalent to $\frac{2}{4}$?

_____

6. What is a fraction equivalent to $\frac{4}{12}$?

_____

7. What is a fraction equivalent to $\frac{1}{4}$?

_____

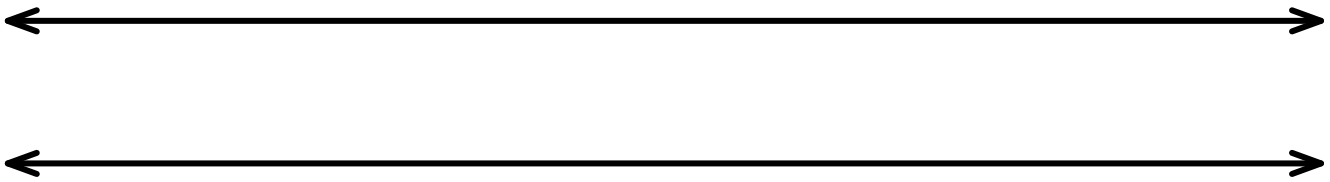
8. What is a fraction equivalent to $\frac{4}{5}$?

_____

Lesson 30 Exit Ticket

Part 1: Use double number lines to find equivalent fractions.

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



2. $\frac{2}{6} = \frac{\square}{3}$

Part 2: Find or test equivalent fractions using multiplication or division. Show your work.

3. Is $\frac{4}{10}$ equivalent to $\frac{3}{5}$? _____

4. Is $\frac{1}{4}$ equivalent to $\frac{2}{8}$? _____

5. What is a fraction equivalent to $\frac{1}{2}$?

$\frac{1}{2} =$ _____

6. What is a fraction equivalent to $\frac{6}{8}$?

$\frac{6}{8} =$ _____

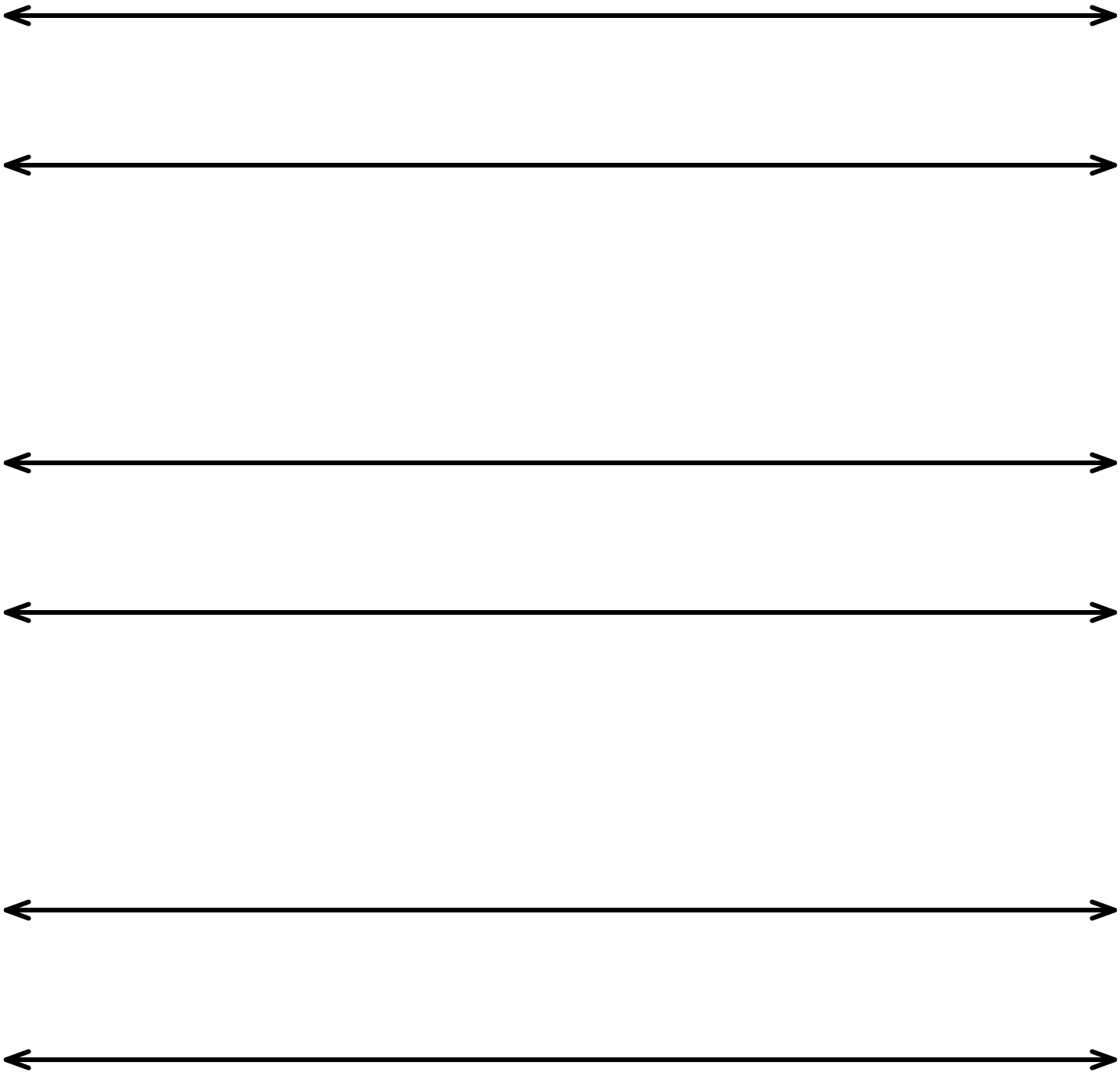
Extra Practice: Xs and Os

Complete the following Tic-Tac-Toe board by placing an *X* in the squares that do not contain equivalent fractions and placing an *O* in the squares that do contain equivalent fractions. At the end, determine who won the game—Xs or Os.

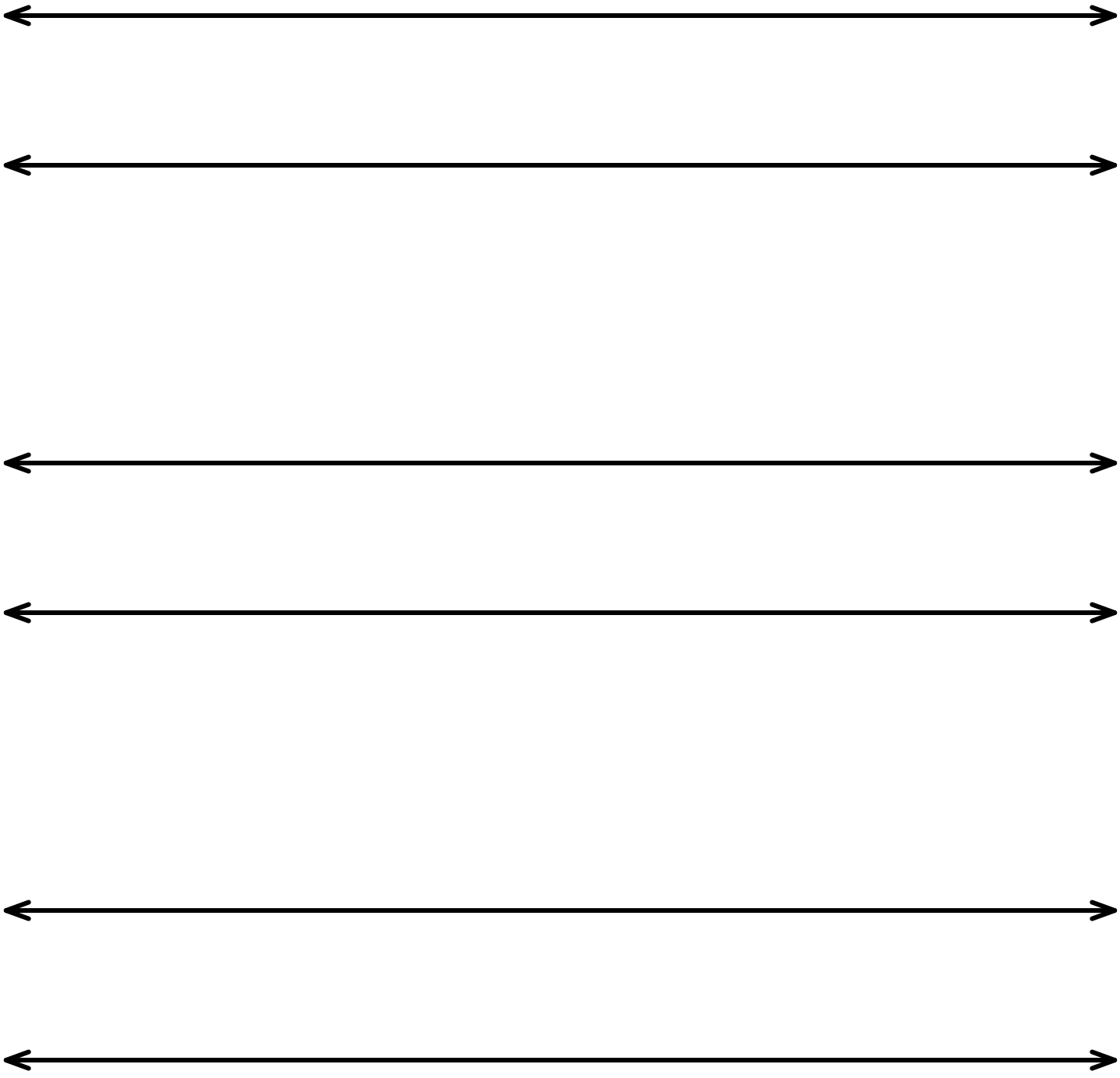
$\frac{1}{2} = \frac{6}{12}$	$\frac{1}{4} = \frac{6}{8}$	$\frac{3}{5} = \frac{10}{12}$
$\frac{4}{5} = \frac{3}{10}$	$\frac{7}{8} = \frac{14}{16}$	$\frac{6}{6} = \frac{8}{9}$
$\frac{8}{10} = \frac{4}{5}$	$\frac{1}{6} = \frac{2}{3}$	$\frac{10}{16} = \frac{5}{8}$

Who won the game of Tic-Tac-Toe? _____

Double Number Lines



Double Number Lines



Life Cycles

Part 1: Compare the fractions using **fraction tiles**. Complete the comparison with the appropriate symbol (>, <, or =).

1. $\frac{3}{4}$ ◯ $\frac{8}{10}$ **2.** $\frac{2}{10}$ ◯ $\frac{1}{5}$ **3.** $\frac{5}{12}$ ◯ $\frac{4}{6}$ **4.** $\frac{1}{3}$ ◯ $\frac{3}{10}$

Part 2: Compare the fractions using tape diagrams. Complete the comparison with the appropriate symbol (>, <, or =).

5. $\frac{2}{12}$ ◯ $\frac{1}{6}$

6. $\frac{4}{5}$ ◯ $\frac{2}{3}$

7. $\frac{3}{8}$ ◯ $\frac{7}{10}$

Student Growth

Review the example problem. Then use **tape diagrams** to compare the fractions. Complete the table and write the comparisons to identify who grew more.

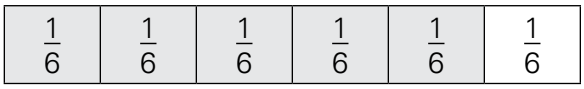
Example

Ms. Zellner measures her students' heights at the beginning and end of the year. Cami and Elle want to compare their growth. Cami grew $\frac{5}{6}$ of a foot and Elle grew $\frac{3}{4}$ of a foot. Who grew more?

Step 1

Represent the first fraction in the top tape.

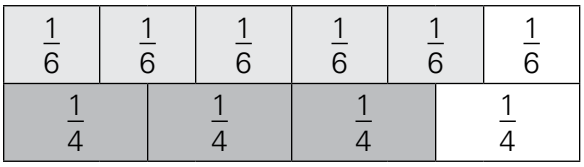
Since the denominator in $\frac{5}{6}$ is 6, the tape needs 6 equal parts. Since the numerator is 5, I need to shade 5 parts.



Step 2

Represent the second fraction in the bottom tape.

Since the denominator in $\frac{3}{4}$ is 4, the tape needs 4 equal parts. Since the numerator is 3, I need to shade 3 parts.



Step 3

Compare the two fractions in the tapes. Write a sentence using comparison symbols and answer the question

The $\frac{5}{6}$ tape is longer than the $\frac{3}{4}$ tape. So, $\frac{5}{6} > \frac{3}{4}$.

Student	Growth (feet)
Juan	$\frac{7}{12}$
Kaylie	$\frac{5}{10}$
Mei	$\frac{6}{8}$
Ty	$\frac{3}{4}$

Students	Comparison	Who grew more?
Juan and Mei		
Kaylie and Mei		
Kaylie and Ty		
Juan and Ty		

Lesson 31 Exit Ticket

Part 1: Use **fraction tiles** to compare the fractions. Use the appropriate comparison symbol (>, <, or =).

1. $\frac{5}{6}$ ◯ $\frac{7}{8}$

2. $\frac{1}{3}$ ◯ $\frac{4}{12}$

Part 2: Use a tape diagram to compare the fractions. Use the appropriate comparison symbol (>, <, or =).

3. $\frac{2}{5}$ ◯ $\frac{3}{8}$

4. $\frac{1}{2}$ ◯ $\frac{3}{4}$

Extra Practice: Color Compare

Color the following tape diagrams to match the fractions given. Then, complete the sentence to indicate which fraction is greater or less.

1. $\frac{2}{4}$ and $\frac{3}{8}$

_____ is less than _____.

2. $\frac{2}{3}$ and $\frac{4}{5}$

_____ is less than _____.

3. $\frac{3}{10}$ and $\frac{4}{6}$

_____ is less than _____.

4. $\frac{2}{5}$ and $\frac{5}{8}$

_____ is less than _____.

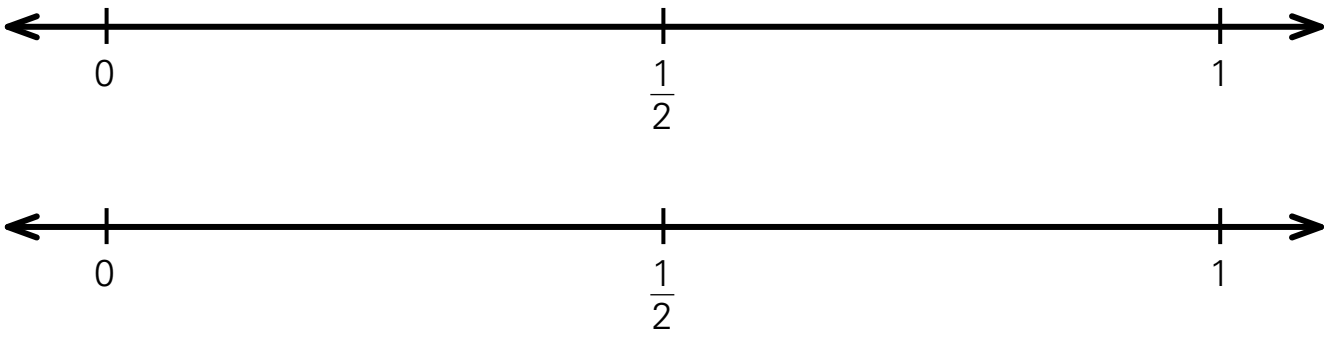
Tape Diagrams

Tape Diagrams

Turtle Races

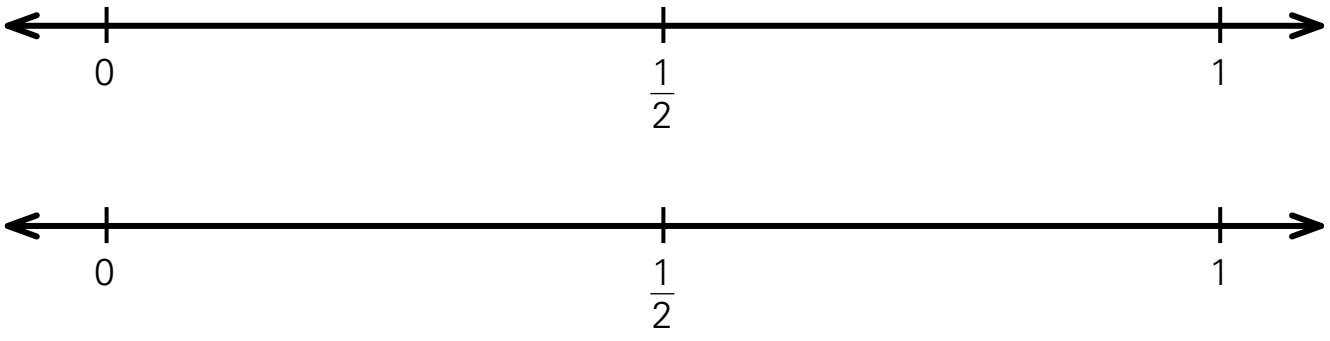
Use the double number lines below to compare the fractions.

1. Tommy Turtle completed $\frac{2}{6}$ of the track. Tillie Turtle completed $\frac{3}{4}$ of the track. Who completed more?



$\frac{2}{6}$ ◯ $\frac{3}{4}$ _____ completed more of the race.

2. Jimmy sold turtle treats at the races on Saturday and Sunday. On Saturday he sold $\frac{3}{8}$ of a bag, and on Sunday he sold $\frac{4}{6}$ of a bag. On which day did he sell more turtle treats?



$\frac{3}{8}$ ◯ $\frac{4}{6}$ Jimmy sold more on _____.

Fraction Comparison Practice

Review the example problem. Then compare the fractions using multiplication or division by the same factor for each numerator and denominator to find equivalent fractions. Show your work and identify the equivalent fraction you use to compare.

Example

Compare $\frac{\mathbf{2}}{\mathbf{4}}$ and $\frac{\mathbf{7}}{\mathbf{12}}$.

Step 1	Step 2	Step 3	Step 4
Identify what you need to multiply (or divide) the denominator by in the first fraction to make it equal to the second fraction's denominator. $\frac{\mathbf{2}}{\mathbf{4}}$ and $\frac{\mathbf{7}}{\mathbf{12}}$ Think: $\frac{\mathbf{2}}{\mathbf{4}} \times \frac{?}{?} = \frac{x}{12}$	Multiply (or divide) both the numerator and the denominator of the first fraction by the same number to get an equivalent fraction with the same denominator as the second fraction. $\frac{\mathbf{2}}{\mathbf{4}} \times \frac{3}{3} = \frac{6}{12}$ $\frac{\mathbf{2}}{\mathbf{4}} = \frac{6}{12}$	Compare the equivalent fraction and the second fraction by looking at the numerator. $\frac{6}{12}$ and $\frac{\mathbf{7}}{\mathbf{12}}$ 6 is less than 7, so $\frac{6}{12} < \frac{\mathbf{7}}{\mathbf{12}}$.	Replace the equivalent fraction with the original first fraction. Insert the comparison symbol to complete the inequality. $\frac{\mathbf{2}}{\mathbf{4}} < \frac{\mathbf{7}}{\mathbf{12}}$

1. $\frac{4}{8}$ ◯ $\frac{3}{4}$

Equivalent fraction: _____

2. $\frac{4}{5}$ ◯ $\frac{7}{10}$

Equivalent fraction: _____

3. $\frac{1}{4}$ ◯ $\frac{9}{12}$

Equivalent fraction: _____

4. $\frac{8}{12}$ ◯ $\frac{3}{6}$

Equivalent fraction: _____

5. $\frac{2}{3}$ ◯ $\frac{5}{9}$

Equivalent fraction: _____

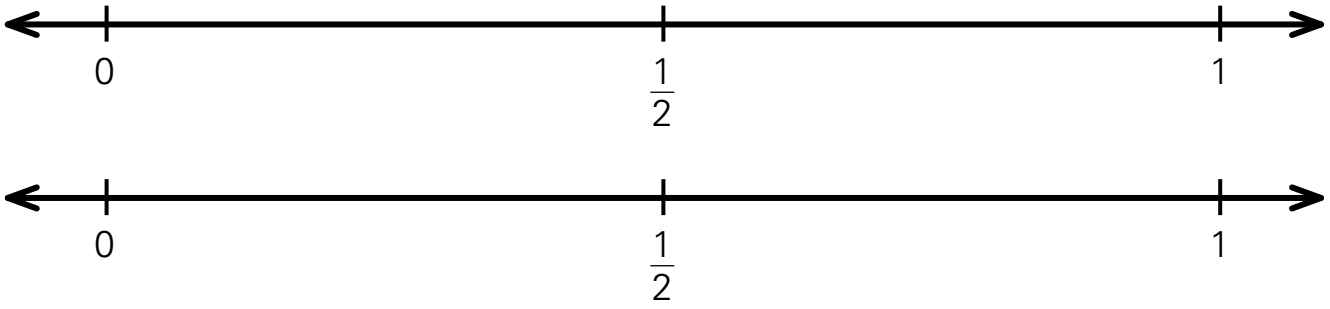
6. $\frac{6}{10}$ ◯ $\frac{4}{5}$

Equivalent fraction: _____

Lesson 32 Exit Ticket

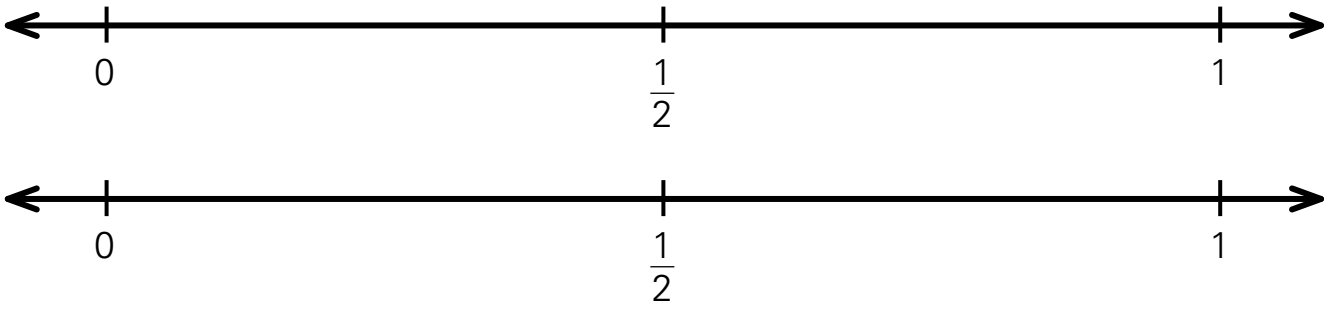
Part 1: Use the double number lines to compare the fractions.

1. Shayla ran $\frac{5}{6}$ of a mile. Javier ran $\frac{4}{10}$ of a mile. Who ran farther?



$\frac{5}{6}$ ◯ $\frac{4}{10}$ _____ ran farther.

2. Enrique ran $\frac{5}{12}$ of a mile. Ming ran $\frac{4}{6}$ of a mile. Who ran farther?



$\frac{5}{12}$ ◯ $\frac{4}{6}$ _____ ran farther.

Part 2: Compare the fractions using multiplication or division to find equivalent fractions. Show your work.

3. $\frac{4}{6}$ ◯ $\frac{1}{3}$

Equivalent fraction: _____

4. $\frac{3}{4}$ ◯ $\frac{7}{12}$

Equivalent fraction: _____

Extra Practice: Greater Than, Less Than, or Equal

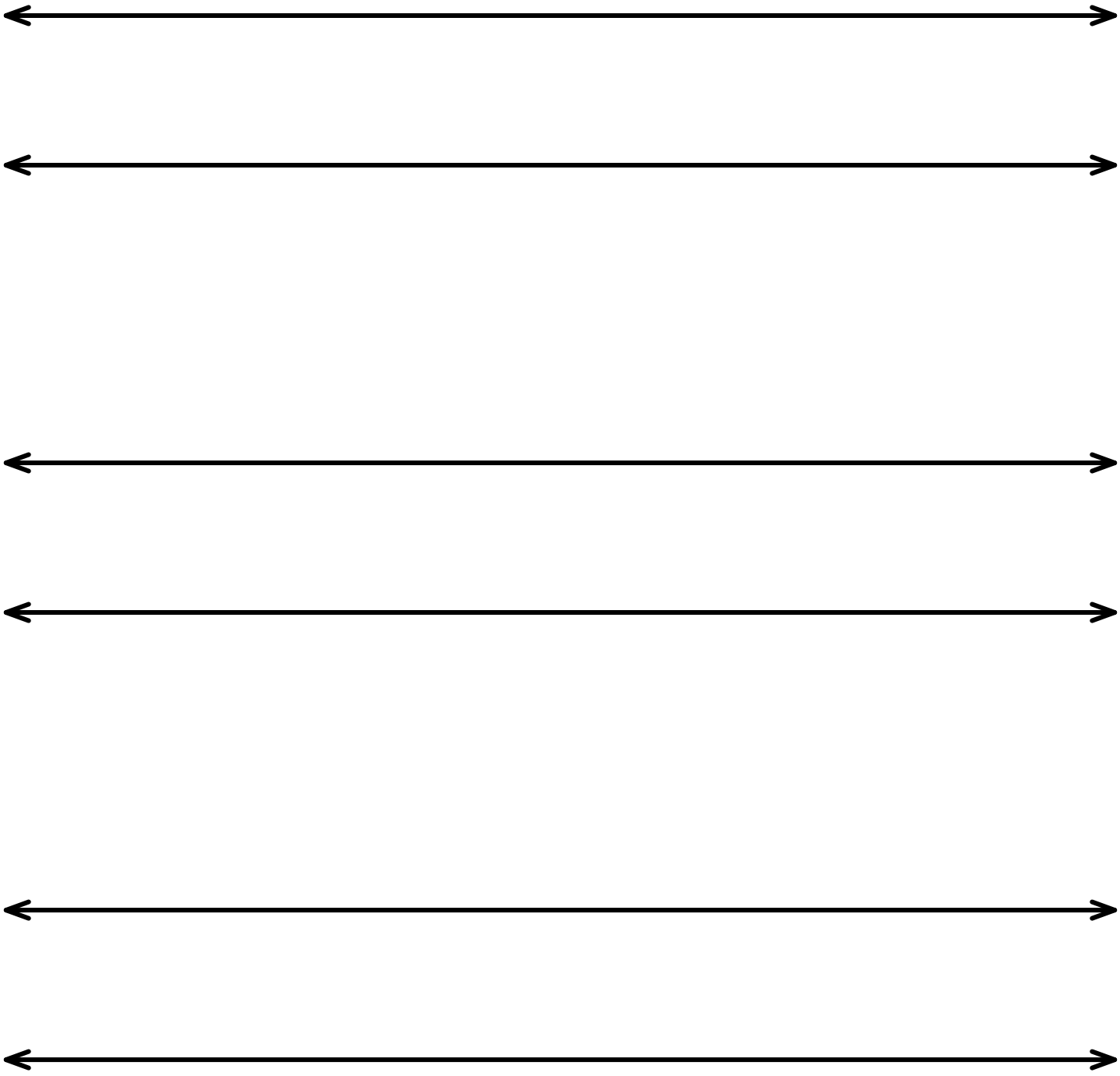
Use **double number lines**. Compare each fraction to $\frac{1}{2}$. Determine whether each fraction is greater than, less than, or equal to $\frac{1}{2}$. Write the fractions in the correct column.

$\frac{4}{6}$ $\frac{5}{7}$ $\frac{1}{3}$ $\frac{7}{12}$ $\frac{3}{5}$ $\frac{1}{9}$ $\frac{7}{9}$

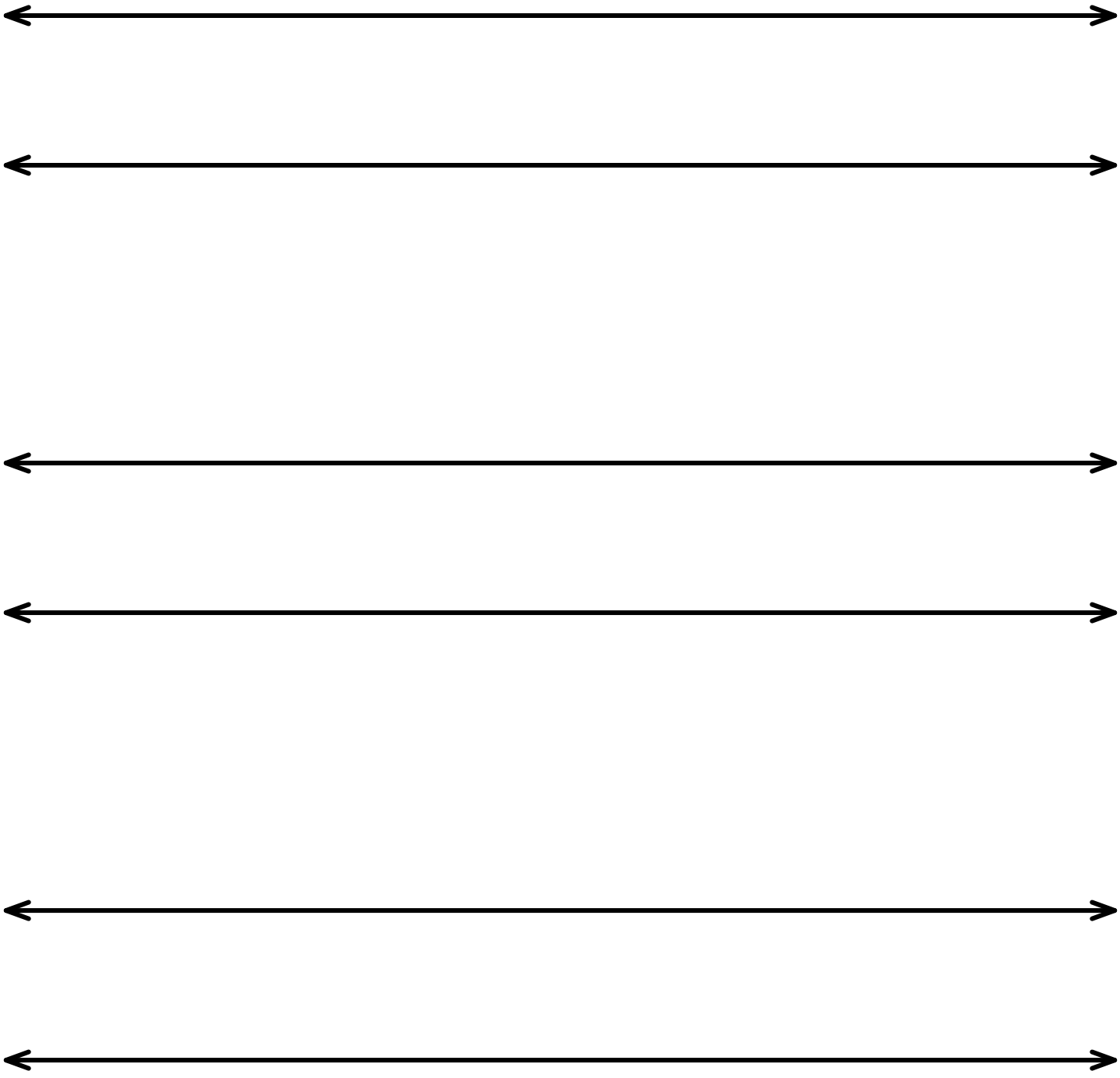
$\frac{2}{3}$ $\frac{5}{12}$ $\frac{1}{4}$ $\frac{7}{14}$ $\frac{3}{4}$ $\frac{8}{10}$ $\frac{6}{12}$

$< \frac{1}{2}$	$= \frac{1}{2}$	$> \frac{1}{2}$

Double Number Lines



Double Number Lines



Assessment

Unit 5 Assessment

1. Use the tape diagram to find the equivalent fraction.

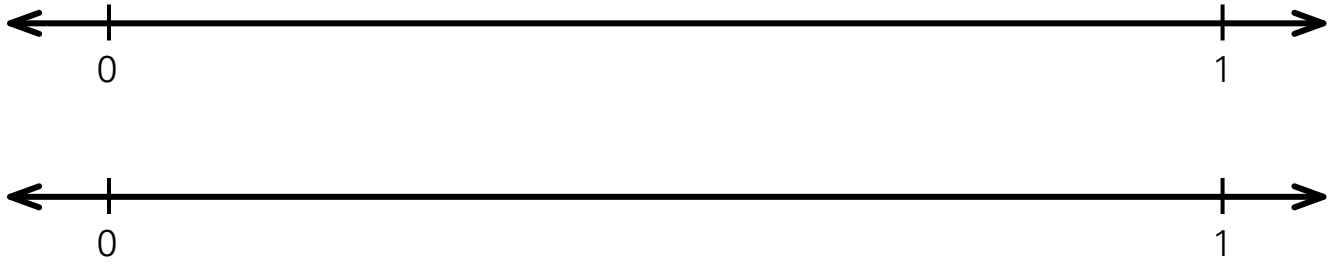
$\frac{5}{6} = \frac{\square}{12}$

2. Jada was given a $\frac{1}{8}$ measuring teaspoon, but she needs to measure $\frac{2}{4}$ teaspoons of cinnamon. How many 1/8 teaspoons are equal to $\frac{2}{4}$ teaspoon? Use the tape diagram to solve.

$\frac{2}{4} = \frac{\square}{\square}$

_____ $\frac{1}{8}$ teaspoons are equal to $\frac{2}{4}$ teaspoon.

3. Nell read $\frac{2}{3}$ of a 12-chapter book. How many chapters did she read? Use the double number line to solve.

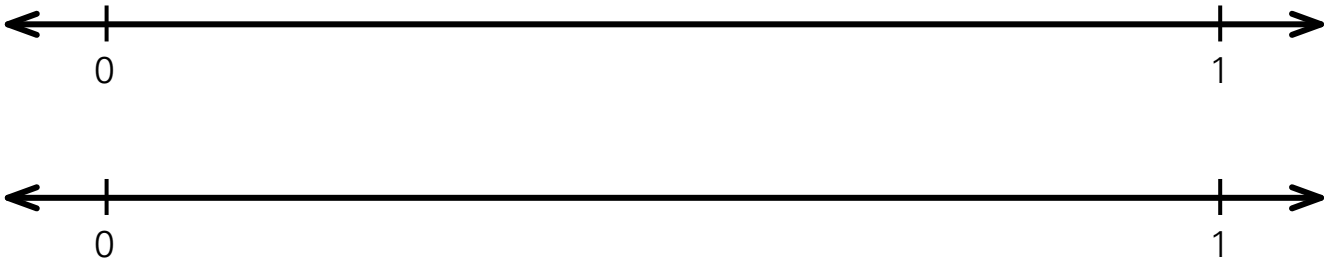


$\frac{2}{3}$ = _____

Nell read _____ chapters.

4. Use the double number line to find the equivalent fraction.

$\frac{5}{6} = \frac{?}{12}$



$\frac{5}{6}$ = _____

5. Use multiplication to find the equivalent fraction.

$$\frac{2}{6} = \frac{\square}{12}$$

6. Use division to find the equivalent fraction.

$$\frac{9}{12} = \frac{\square}{4}$$

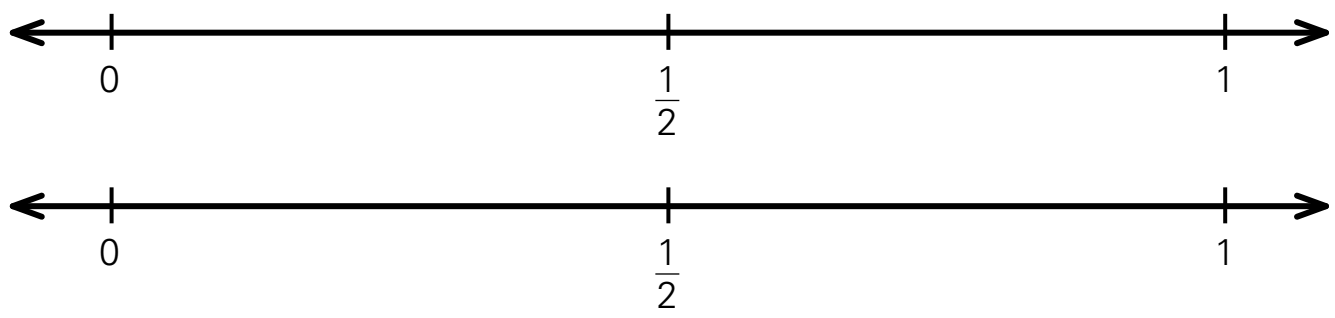
7. Use the tape diagram to compare the fractions. Use >, <, or =.

$$\frac{4}{6} \bigcirc \frac{7}{8}$$

8. Use the tape diagram to compare the fractions. Use >, <, or =.

$$\frac{7}{10} \bigcirc \frac{4}{5}$$

9. Use the double number lines to compare $\frac{2}{6}$ and $\frac{3}{4}$. Complete the comparison using >, <, or =.



_____ ◯ _____

10. Find an equivalent fraction to compare the given fractions.

$\frac{3}{5}$ ◯ $\frac{4}{10}$

Equivalent fraction: _____

Unit 5 Cumulative Review

1. Multiply.

$32 \times 70 =$ _____

2. Bella is planting her garden. She plants $\frac{5}{10}$ of the garden with tulips and $\frac{4}{10}$ of the garden with daffodils. Did Bella plant more tulips or daffodils in the garden? Compare the fractions. Use <, >, or =.

$\frac{5}{10}$ ◯ $\frac{4}{10}$

Bella planted more _____.

3. Ms. Cantone loves strawberries! She always brings strawberries with her when she travels. She is on vacation this week and she packed 28 strawberries. If she eats 4 strawberries each day, how many strawberries will she have left after 3 days?

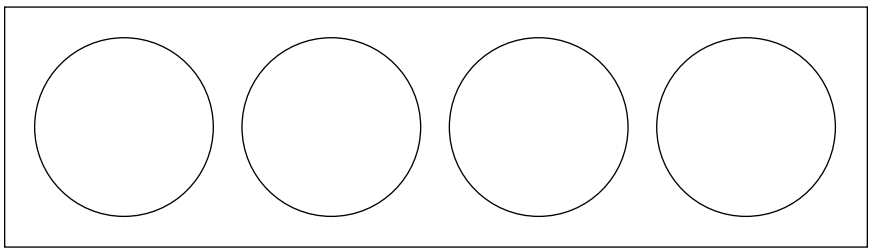
There will be _____ strawberries left.

4. Compare the numbers. Use <, >, or =.

346,738 ◯ 346,379

5. What is 4,670 rounded to the nearest thousand? _____

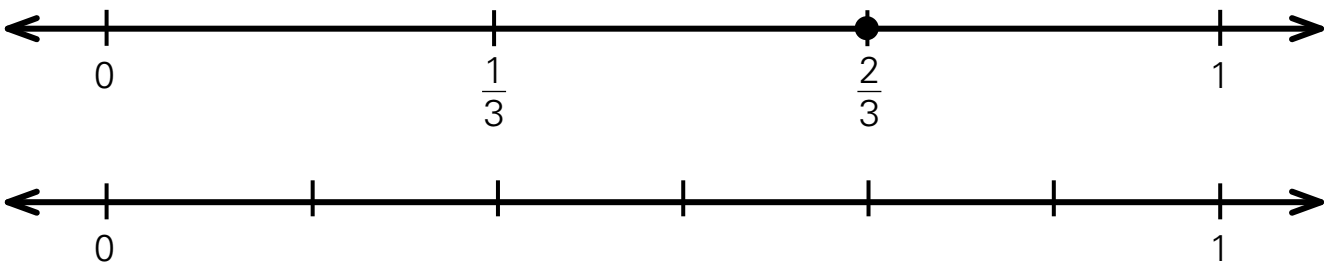
6. Mel works at Pete's Peanut Butter Company. Mel packages the jars of peanut butter. Each box holds 4 jars. The box represents one whole.



What whole number fraction can you use to represent the jars? _____

7. Is 31 a prime or composite number? _____

8. Which fraction is equivalent to $\frac{2}{3}$? _____



9. Brenda makes 4 loaves of cranberry bread. She uses one bag of cranberries in each loaf. Each bag of cranberries contains 785 cranberries. How many cranberries are in the 4 loaves of cranberry bread?

There are _____ cranberries in the 4 loaves of bread.

10. Diego helps pack bags of fruit at the food pantry. He packed 76 bags of fruit. He put 28 pieces of fruit in each bag. How many total pieces of fruit did Diego put in the bags?

Diego put _____ pieces of fruit in the bags.

11. Round 726 to the nearest 10. _____

12. Divide.

1,988 ÷ 7 = _____

13. Compare the fractions. Use <, >, or =.

$\frac{4}{5}$ ◯ $\frac{6}{9}$

14. Complete the equation.

$\frac{4}{6} = \frac{\square}{12}$

15. Kyesh is reading a book that has 976 pages. He has read 78 pages so far. How many more pages does Kyesh need to read?

Kyesh needs to read _____ more pages.

Unit 6:

Operations with Fractions

Catapult Learning™

Puppy Pantry

Part 1: Use **fraction tiles** to represent the problems and answer the questions. Then use unit fractions to write an equation to show the fraction representing all the items.

1. The Puppy Pantry received a donation of toys. Some of the toys are shaped like animals. $\frac{1}{6}$ of the toys are shaped like whales, $\frac{1}{6}$ are shaped like dogs, $\frac{1}{6}$ are shaped like bears, and $\frac{1}{6}$ are shaped like monkeys. How many of the toys are shaped like animals?

Equation: _____

_____ of the toys are shaped like animals.

2. The Puppy Pantry received a donation of food dishes. Some of the dishes are ceramic. $\frac{1}{8}$ of the dishes are blue ceramic, $\frac{1}{8}$ are red ceramic, and $\frac{1}{8}$ are yellow ceramic. How many of the dishes are ceramic?

Equation: _____

_____ of the dishes are ceramic.

Part 2: Use the tape diagrams to build the fractions and complete the equation.

3. $\frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} + \frac{1}{10} =$ _____

4. $\frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} =$ _____

Puppy Food

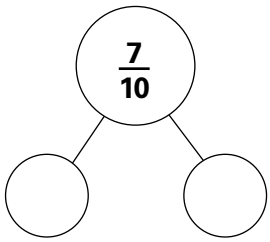
Review the example problem. Then draw **number bonds** to find two ways to decompose the fraction. Complete the equation to show the ways you found.

Example

The Puppy Pantry has $\frac{7}{10}$ of a bag of premium dog food left. What is one way they could divide the food among two food dishes? What is one way they could divide the food among three food dishes?

Step 1

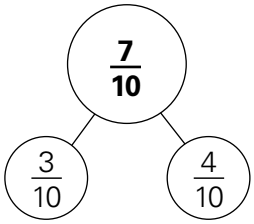
Draw a number bond with the given fraction in the top circle.



Step 2

Use the numerator to find a way to break up the pieces into two parts. Show the decomposition in the bottom circles.

The numerator of $\frac{7}{10}$ is 7. I can break up 7 into 3 and 4.
I can break up $\frac{7}{10}$ into 3/10 and 4/10.



Step 3

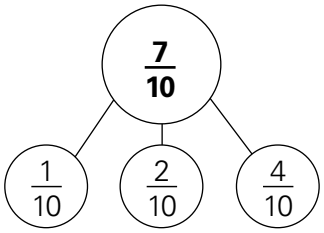
Write an equation to represent the number bond.

Equation:

$\frac{3}{10} + \frac{4}{10} = \mathbf{\frac{7}{10}}$

Step 4

Repeat the process with another number bond and equation.



Equation:

$\frac{1}{10} + \frac{2}{10} + \frac{4}{10} = \mathbf{\frac{7}{10}}$

1. $\frac{5}{7}$ = _____ $\frac{5}{7}$ = _____

2. $\frac{7}{8}$ = _____ $\frac{7}{8}$ = _____

3. $\frac{9}{12}$ = _____ $\frac{9}{12}$ = _____

Lesson 34 Exit Ticket

Part 1: Build the fractions using a tape diagram. You can use **fraction tiles** to help. Then write an equation to show how to compose the unit fractions.

1. At the Puppy Pantry, $\frac{1}{6}$ of the dogs are Boston Terriers, $\frac{1}{6}$ are Jack Russell Terriers, and $\frac{1}{6}$ are Yorkshire Terriers. How many of the dogs are terriers?

Equation: _____

_____ of the dogs are terriers.

2. At the Puppy Pantry, $\frac{1}{10}$ of the dogs are greyhounds, $\frac{1}{10}$ are foxhounds, $\frac{1}{10}$ are bloodhounds, $\frac{1}{10}$ are wolfhounds, and $\frac{1}{10}$ are deerhounds. How many of the dogs are hounds?

Equation: _____

_____ of the dogs are hounds.

Part 2: Draw **number bonds** to find two different ways to decompose the fraction. Complete the equations to show the ways you found.

3. $\frac{6}{8}$ = _____ $\frac{6}{8}$ = _____

Extra Practice: Fraction Frenzy

Part 1: Draw a tape diagram to represent the fractions. Then write the equation to show the combining of unit fractions.

$\frac{5}{6}$	Equation: _____
$\frac{3}{5}$	Equation: _____
$\frac{4}{10}$	Equation: _____
$\frac{5}{7}$	Equation: _____

Part 2: Draw number bonds to show two ways to decompose each fraction.

$\frac{9}{10}$	

$\frac{4}{6}$	

Hiking Trails

Use **tape diagrams** to solve the problems and complete the equations.

1. Mara and her family went hiking on the Alpine Trail. They hiked $\frac{4}{7}$ of the trail before lunch and $\frac{2}{7}$ of the trail after lunch. How much of the trail did they hike?

$\frac{4}{7} + \frac{2}{7} =$ _____ They hiked _____ of the trail.

2. The Lakeside Trail is $\frac{7}{10}$ of a mile long. Jayne and Pedro decided to run along the trail. They ran for $\frac{4}{10}$ of a mile before stopping to have a drink of water. How much of the trail do they have left to run?

$\frac{7}{10} - \frac{4}{10} =$ _____ They have _____ of the trail left to run.

3. Emi rode her bike on the Turtle Trail. She rode $\frac{4}{12}$ of the trail before she met up with her friend Ming. Then Emi and Ming rode their bikes together for another $\frac{6}{12}$ of the trail. How much of the trail did Emi bike?

$\frac{4}{12} + \frac{6}{12} =$ _____ Emi biked _____ of the trail.

4. Leon is helping his scout troop pick up trash along the Bonney Woods Trail. The trail is $\frac{7}{9}$ of a mile long. Leon and his troop have completed the cleanup of $\frac{5}{9}$ of a mile by lunchtime. What fraction of a mile do they have left to clean?

$\frac{7}{9} - \frac{5}{9} =$ _____ They have _____ of a mile left to clean.

Trail Snacks

Review the example problem. Then use the algorithm to add and subtract the fractions. Check one addition and one subtraction problem with **tape diagrams**.

Example

While on the trail, the Woodland Hikers share snacks. Chelsea brought $\frac{4}{5}$ of a cup of trail mix. She shares $\frac{2}{5}$ of a cup with her fellow hikers. How many cups of trail mix does she have left? Chelsea also has $\frac{3}{8}$ of a cup of pumpkin seeds. Teddy gives her $\frac{3}{8}$ of a cup of sunflower seeds. How many cups of seeds does she have now?

Step 1

Note whether the denominators are the same.

Subtraction:

$\frac{4}{5} - \frac{2}{5} = ?$

Both fractions have the denominator 5.

Addition:

$\frac{3}{8} + \frac{3}{8} = ?$

Both fractions have the denominator 8.

Step 2

If the denominators are the same, subtract the numerators. Keep the common denominator.

Subtraction:

$\frac{4}{5} - \frac{2}{5} = \frac{2}{5}$

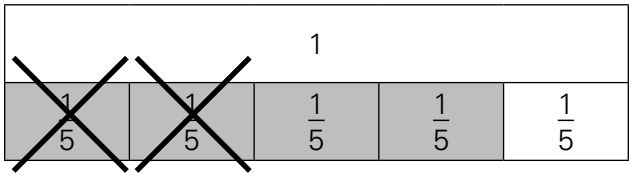
If the denominators are the same, add the numerators. Keep the common denominator.

Addition:

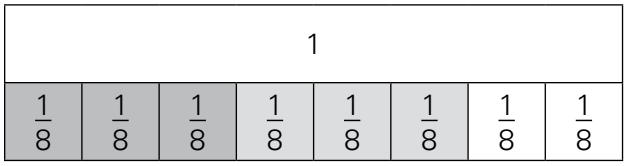
$\frac{3}{8} + \frac{3}{8} = \frac{6}{8}$

Step 3

Make a tape diagram to check your answer.



4 equal parts – 2 equal parts = 2 equal parts



3 equal parts + 3 equal parts = 6 equal parts

1. $\frac{7}{9} - \frac{3}{9} =$ _____

2. $\frac{2}{5} + \frac{2}{5} =$ _____

3. $\frac{4}{6} + \frac{2}{6} =$ _____

4. $\frac{7}{8} - \frac{5}{8} =$ _____

5. $\frac{6}{7} - \frac{3}{7} =$ _____

6. $\frac{11}{12} - \frac{8}{12} =$ _____

7. $\frac{4}{10} + \frac{5}{10} =$ _____

8. $\frac{3}{9} + \frac{5}{9} =$ _____

9. $\frac{4}{8} - \frac{1}{8} =$ _____

10. $\frac{1}{4} + \frac{3}{4} =$ _____

Lesson 35 Exit Ticket

Part 1: Use a tape diagram to solve the following equations.

1. $\frac{4}{9} + \frac{3}{9} =$ _____

2. $\frac{8}{12} - \frac{7}{12} =$ _____

Part 2: Use the algorithm to solve the following equations.

3. $\frac{1}{4} + \frac{2}{4} =$ _____

4. $\frac{9}{12} - \frac{5}{12} =$ _____

Extra Practice: Plus or Minus?

Part 1: Write a plus or minus sign to complete the equations.

1. $\frac{5}{7}$ ◯ $\frac{2}{7} = \frac{3}{7}$

2. $\frac{4}{7}$ ◯ $\frac{1}{7} = \frac{5}{7}$

3. $\frac{9}{10}$ ◯ $\frac{2}{10} = \frac{7}{10}$

4. $\frac{1}{2}$ ◯ $\frac{1}{2} = 0$

5. $\frac{2}{4}$ ◯ $\frac{1}{4} = \frac{3}{4}$

6. $\frac{1}{12}$ ◯ $\frac{5}{12} = \frac{6}{12}$

Part 2: Use tape diagrams to complete the equations.

7. $\frac{5}{9} + \frac{3}{9} =$ _____

8. $\frac{8}{10} - \frac{4}{10} =$ _____

9. $\frac{4}{8} + \frac{2}{8} =$ _____

Tape Diagrams

Tape Diagrams

Tape Diagrams

Tape Diagrams

School Play

Read the following problems about creating the set for the play. Use **fraction strips** to solve and complete the equations.

1. Isaiah needs to build the window for Rapunzel's house. For the outside of the window, he needs $3\frac{2}{5}$ feet of wood. For the inside of the window, he needs $2\frac{2}{5}$ feet of wood. How much wood does Isaiah need in total?

$3\frac{2}{5} + 2\frac{2}{5} =$ _____ He needs _____ feet of wood.

2. The window curtains need $5\frac{2}{3}$ yards of fabric. Alyssa ordered fabric from a local store, but they only had $4\frac{1}{3}$ yards of fabric. How much more fabric does Alyssa need to finish the curtains?

$5\frac{2}{3} - 4\frac{1}{3} =$ _____ She needs _____ yards of fabric.

3. To complete Rapunzel's dress, Hailey needs a piece of lace that is $6\frac{4}{5}$ inches long. She has a piece of lace that is $2\frac{3}{5}$ inches long. How much more lace does Hailey need?

$6\frac{4}{5} - 2\frac{3}{5} =$ _____ She needs _____ inches of lace.

4. Chance is purchasing canvas to make the play's backdrops. One of the backdrops needs $2\frac{3}{4}$ sheets of canvas. The other needs $3\frac{1}{4}$ sheets of canvas. What is the total amount of canvas Chance needs?

$2\frac{3}{4} + 3\frac{1}{4} =$ _____ He needs _____ sheets of canvas.

Add and Subtract Mixed Numbers Practice

Use **fraction strips** to solve the addition and subtraction equations.

1. $4\frac{3}{4} - 2\frac{1}{4} =$ _____

2. $1\frac{6}{10} + 3\frac{6}{10} =$ _____

3. $3\frac{2}{8} + 2\frac{4}{8} =$ _____

4. $2\frac{6}{9} + 1\frac{5}{9} =$ _____

5. $6\frac{3}{12} - 3\frac{8}{12} =$ _____

6. $3\frac{5}{7} - 3\frac{2}{7} =$ _____

7. $5\frac{3}{6} - 2\frac{4}{6} =$ _____

8. $2\frac{2}{4} + 2\frac{3}{4} =$ _____

9. $3\frac{3}{9} + 2\frac{5}{9} =$ _____

10. $5\frac{2}{5} - 1\frac{4}{5} =$ _____

Lesson 36 Exit Ticket

Solve the equations using **fraction strips**.

1. $3\frac{2}{3} - 1\frac{1}{3} =$ _____

2. $3\frac{6}{7} + 2\frac{3}{7} =$ _____

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

4. $4\frac{1}{5} + 2\frac{2}{5} =$ _____

Extra Practice: Riddle Time!

Use **fraction strips** to solve the addition and subtraction problems. Then use the answers to solve the riddle.

U	$2\frac{4}{5} + 3\frac{2}{5} =$ _____	**N**	$6\frac{7}{9} - 3\frac{4}{9} =$ _____
S	$3\frac{1}{4} + 6\frac{1}{4} =$ _____	**T**	$5\frac{4}{7} - 3\frac{2}{7} =$ _____
Y	$4\frac{4}{7} + 2\frac{1}{7} =$ _____	**O**	$4\frac{3}{4} - 3\frac{1}{4} =$ _____
R	$3\frac{5}{9} + 1\frac{2}{9} =$ _____	**E**	$6\frac{4}{5} - 3\frac{3}{5} =$ _____

What did the bread say to the peanut butter?

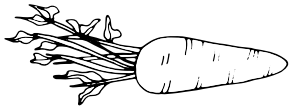
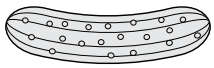
_____	_____	_____	_____	_____	_____	_____	_____	_____
$6\frac{5}{7}$	$1\frac{2}{4}$	$6\frac{1}{5}$	$4\frac{7}{9}$	$3\frac{1}{5}$	$3\frac{3}{9}$	$6\frac{1}{5}$	$2\frac{2}{7}$	$9\frac{2}{4}$

,

!

Look at Your Garden Grow!

The fourth graders are trying to determine how much each plant has grown. Use **tape diagrams** to add and subtract the mixed numbers. Write an equation and answer the question.

Vegetable	Week 1 Growth (inches)	Week 2 Growth (inches)
Carrots 	$1\frac{5}{6}$	$2\frac{1}{6}$
Peppers 	$2\frac{1}{5}$	$2\frac{3}{5}$
Cucumbers 	$3\frac{1}{3}$	$2\frac{2}{3}$
Squash 	$4\frac{4}{6}$	$3\frac{2}{6}$

1. How much have the peppers grown in total?

Equation: _____ The peppers have grown _____ inches.

2. How much have the carrots grown in total?

Equation: _____ The carrots have grown _____ inches.

3. How much has the squash grown in total?

Equation: _____ The squash has grown _____ inches.

4. How much have the cucumbers grown in total?

Equation: _____ The cucumbers have grown _____ inches.

Plant Growth

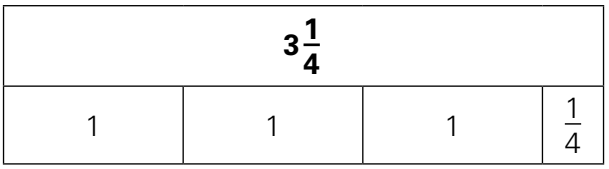
Review the example problems. Then use **tape diagrams** to solve.

Example

Subtract. $3\frac{1}{4} - 1\frac{3}{4} = ?$

Step 1

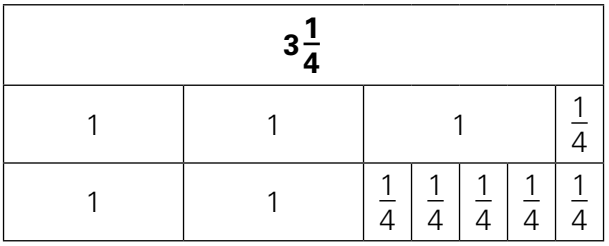
Represent the first number in a tape diagram.
Break up the whole number into individual wholes.



Step 2

Look at the fraction being subtracted. Regroup a whole as unit fractions if needed.

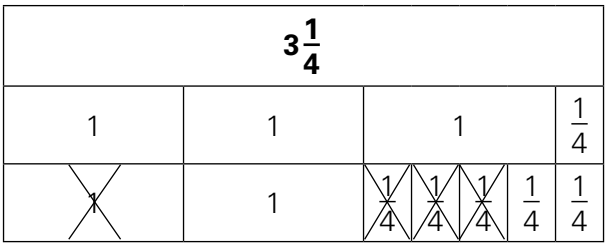
I cannot subtract $\frac{3}{4}$ from $\frac{1}{4}$, so I need to regroup.



Step 3

Cross out to subtract and complete the equation.

$3\frac{1}{4} - 1\frac{3}{4} = 1\frac{2}{4}$



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

2. $3\frac{3}{6} - 2\frac{5}{6} =$ _____

3. $4\frac{2}{4} - 2\frac{3}{4} =$ _____

4. $2\frac{3}{7} - 1\frac{5}{7} =$ _____

5. $10\frac{1}{3} - 4\frac{1}{3} =$ _____

6. $3\frac{3}{8} - 1\frac{7}{8} =$ _____

Lesson 37 Exit Ticket

Solve the equations using **tape diagrams**.

1. $3\frac{1}{7} + 2\frac{3}{7} =$ _____

2. $4\frac{1}{4} - 3\frac{3}{4} =$ _____

3. $2\frac{1}{5} - 1\frac{3}{5} =$ _____

4. $2\frac{3}{6} + 3\frac{5}{6} =$ _____

Extra Practice: Mixed Number Match

Solve each expression using a **tape diagram**. Then draw a line to match each expression with the correct answer.

$6\frac{2}{6} - 3\frac{3}{6}$	$1\frac{2}{7}$
$3\frac{2}{7} + 2\frac{6}{7}$	$2\frac{4}{6}$
$5\frac{3}{6} - 2\frac{5}{6}$	$6\frac{1}{7}$
$4\frac{6}{7} - 3\frac{4}{7}$	$2\frac{5}{6}$

Hoopin' in the Heat

Add or subtract to solve the problems using any tool or strategy. Write an equation.

1. For one of the drills, the campers dribble the ball around the court. They go around the court $5\frac{4}{5}$ times one way. Then they turn and go around the court $8\frac{2}{5}$ times the other way. How many times do they go around the court?

Equation: _____ They go around the court _____ times.

2. For another drill, the campers have to dribble the basketball for $15\frac{3}{12}$ meters. One of the circles on the court is $4\frac{7}{12}$ meters. If a camper dribbles around the circle one time, how many meters do they have left to dribble?

Equation: _____ They have _____ meters left.

3. It's important that the campers stay hydrated throughout the day, because they are working hard! One of the water jugs holds $4\frac{2}{7}$ gallons of water, and the other jug holds $6\frac{1}{7}$ gallons of water. How many total gallons of water do the jugs hold?

Equation: _____ The jugs hold _____ gallons.

4. On last day of camp, campers only go for $4\frac{1}{4}$ hours. If the campers have been there for $2\frac{2}{4}$ hours, how much time do they have left at camp?

Equation: _____ They have _____ hours left.

Basketball Camp

Review the example problem. Then solve the problems using any tool or strategy.

Example

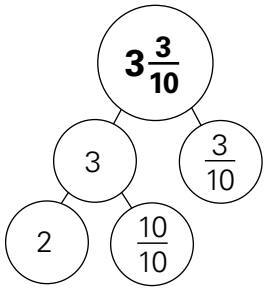
To get to the camp, Sergio had to travel $\mathbf{3\frac{3}{10}}$ of a mile and Jonah had to travel $\mathbf{1\frac{8}{10}}$ of a mile. How much farther did Sergio travel than Jonah?

Step 1

Look at the fractions in the mixed numbers. If you can't subtract, regroup a whole from the first number.

$\mathbf{3\frac{3}{10} - 1\frac{8}{10}}$

I can't subtract $\frac{8}{10}$ from $\frac{3}{10}$, so I need to regroup a whole as $\frac{10}{10}$.



Step 2

Write a new equation to show the regrouping.

$2\frac{13}{10} - \mathbf{1\frac{8}{10}}$

Step 3

Stack the equation to align the whole numbers and fractions.

$$\begin{array}{r} 2\frac{13}{10} \\ -\ 1\frac{8}{10} \\ \hline \end{array}$$

Step 4

Subtract the fractions. Then subtract the whole numbers. Complete the equation.

$$\begin{array}{r} 2\frac{13}{10} \\ -\ 1\frac{8}{10} \\ \hline 1\frac{5}{10} \end{array}$$

$\mathbf{3\frac{3}{10} - 1\frac{8}{10}} = 1\frac{5}{10}$

Sergio traveled $1\frac{5}{10}$ miles farther than Jonah.

1. One competition at the basketball camp is a race to see who can score five baskets the fastest. It took Karrel $5\frac{2}{4}$ minutes and John $3\frac{3}{4}$ minutes to score five baskets.

a. How much combined time did it take Karrel and John to each score five baskets?

Equation: _____ It took them _____ minutes.

b. How much longer did it take Karrel to score 5 baskets than it took John?

Equation: _____ It took her _____ minutes longer.

2. $4\frac{7}{8} - 1\frac{4}{8} =$ _____

3. $1\frac{1}{4} - \frac{3}{4} =$ _____

4. $4\frac{1}{5} + 2\frac{4}{5} =$ _____

Lesson 38 Exit Ticket

Part 1: Use any tool or strategy to solve. Write an equation.

1. A cookie recipe calls for $2\frac{1}{3}$ teaspoons of vanilla. Maya has added $1\frac{2}{3}$ teaspoons of vanilla so far. How much more vanilla does she need to add?

Equation: _____ She needs to add _____ teaspoons.

2. The recipe calls for $2\frac{3}{4}$ cups of granulated sugar and $1\frac{3}{4}$ cups brown sugar. How much sugar in all does Maya need?

Equation: _____ She needs _____ cups.

3. Maya added $2\frac{3}{8}$ teaspoons of cinnamon and $1\frac{6}{8}$ teaspoons of nutmeg to the batter. How much more cinnamon did she use than nutmeg?

Equation: _____ She used _____ teaspoons more.

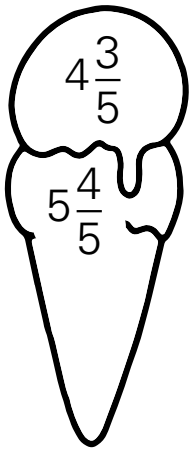
Part 2: Complete the equations.

4. $5\frac{1}{6} - 2\frac{4}{6} =$ _____

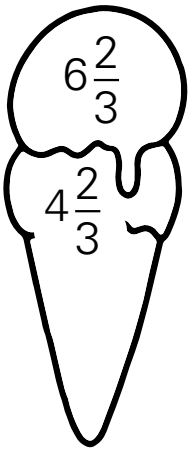
5. $3\frac{5}{10} + 6\frac{6}{10} =$ _____

Extra Practice: Ice-Cream Cone Calculations

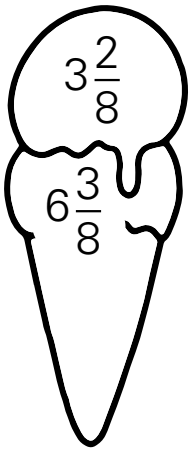
Part 1: Humberto is measuring the amount of ice cream on different cones. The number of ounces in each scoop is written on the cones. Write an equation and solve to find how many ounces are in each cone.



Equation: _____



Equation: _____



Equation: _____

Part 2: Humberto wants to know how much the ice cream weighs without the cones. Help Humberto subtract the weight of the cone from the entire weight of the ice cream and cone.

Ice Cream + Cone: $10\frac{5}{7}$ ounces

Cone: $1\frac{3}{7}$ ounces

Equation: _____

Ice Cream + Cone: $8\frac{3}{8}$ ounces

Cone: $\frac{5}{8}$ ounces

Equation: _____

Mixed Number Cards

$8\frac{7}{8}$	$3\frac{2}{8}$
$4\frac{1}{5}$	$6\frac{3}{5}$
$9\frac{3}{10}$	$7\frac{5}{10}$
$2\frac{3}{4}$	$5\frac{3}{4}$
$7\frac{5}{6}$	$2\frac{3}{6}$

Dollhouse

Each room of the dollhouse has different flooring. Using the information in the table, calculate the width of each room. Use **fraction tiles** or a **tape diagram** to solve each problem. Write an addition equation and a multiplication equation for each problem.

Flooring	Width per Piece
Cherry Hardwood	$\frac{1}{12}$ ft
Tile	$\frac{1}{6}$ ft
Vinyl	$\frac{1}{5}$ ft
Laminate	$\frac{1}{8}$ ft

1. The kitchen has tile. There are 5 tiles across the floor. What is the width of the kitchen?

Addition: _____ Multiplication: _____

2. The closet has vinyl flooring. There are 4 pieces of flooring across the closet. What is the width of the closet?

Addition: _____ Multiplication: _____

3. The bedroom has cherry hardwood. There are 6 pieces of flooring across the bedroom. What is the width of the bedroom?

Addition: _____ Multiplication: _____

4. The bathroom has laminate flooring. There are 4 pieces of flooring across the bathroom. What is the width of the bathroom?

Addition: _____ Multiplication: _____

Window Coverings

Review the example problem. Then use **tape diagrams** to solve. Write multiplication equations to represent your tape diagrams.

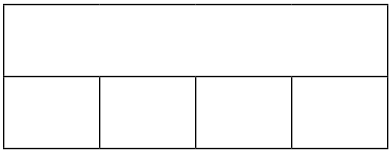
Example

The dollhouse living room has a beautiful picture window. I want to make a window covering for it. There are **4** window sections that are each $\frac{1}{5}$ inch wide. How wide does the window covering need to be?

Step 1

Determine how many groups the problem represents.

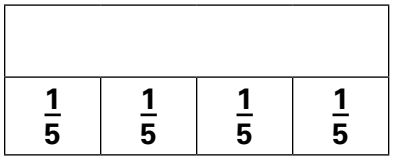
There are **4** window sections, so there are **4** groups.



Step 2

Determine the size of each group.

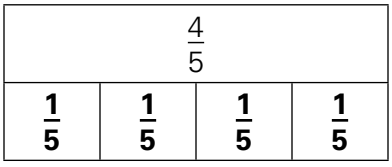
Since each window is $\frac{1}{5}$ inch wide, each part is $\frac{1}{5}$.



Step 3

Use repeated addition to find the whole.

$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \frac{4}{5}$



Step 4

Write a multiplication equation to represent the tape diagram.

$4 \times \frac{1}{5} = \frac{4}{5}$ The window covering needs to be $\frac{4}{5}$ inch wide.

1. The bay window in the kitchen has 3 sections. Each section is $\frac{1}{4}$ inch wide. How wide is the entire window?

Multiplication: _____ The window is _____ inch wide.

2. The bedroom has 4 windows. Each window is $\frac{1}{6}$ inch wide. How much fabric do I need to cover all the bedroom windows?

Multiplication: _____ You need _____ inch.

3. The bathroom window has five sections that are each $\frac{1}{8}$ inch wide. How much fabric do I need to cover the bathroom window?

Multiplication: _____ You need _____ inch.

Lesson 39 Exit Ticket

Part 1: Use **fraction tiles** or a tape diagram to solve each problem. Complete the equation.

1. $3 \times \frac{1}{4} =$ _____

2. $5 \times \frac{1}{6} =$ _____

Part 2: Use a tape diagram to solve the problem. Write an addition equation and a multiplication equation to represent your tape diagram.

3. Each bathroom tile is $\frac{1}{5}$ of an inch. The bathroom floor is 4 tiles long. How long is the bathroom floor?

Addition: _____ Multiplication: _____

Extra Practice: Turtle Growth

The fourth graders are keeping track of how much their classroom turtles are growing throughout the school year. Calculate how much each turtle grows using a **tape diagram** and repeated addition. Then write a multiplication equation.

Turtle	Growth per Month	Number of Months	Multiplication Equation
Mr. Greg	$\frac{1}{5}$ inch	2 months	
Rad Brad	$\frac{1}{4}$ inch	3 months	
Andy	$\frac{1}{8}$ inch	5 months	
Kat	$\frac{1}{10}$ inch	6 months	

What strategies did you use to solve these problems?

What made that strategy easy for you?

What was challenging about that strategy?

Tape Diagrams

Tape Diagrams

Pizza Party

Part 1: Use **fraction strips** to multiply. Convert improper fractions to mixed numbers.

1. The soccer team had 6 players at their party. Each player ate $\frac{3}{8}$ of a pizza. How much pizza did the team eat in all?

As an improper fraction, they ate _____ pizzas.

As a mixed number, they ate _____ pizzas in all.

2. The volleyball team had 7 players at their party. Each player ate $\frac{2}{5}$ of a pizza. How much pizza did the team eat in all?

As an improper fraction, they ate _____ pizzas.

As a mixed number, they ate _____ pizzas in all.

3. The football team had 7 players at their party. Each player ate $\frac{3}{6}$ of a pizza. How much pizza did the team eat in all?

As an improper fraction, they ate _____ pizzas.

As a mixed number, they ate _____ pizzas in all.

4. The swim team had 5 swimmers at their party. Each player ate $\frac{1}{2}$ of a pizza. How much pizza did the team eat in all?

As an improper fraction, they ate _____ pizzas.

As a mixed number, they ate _____ pizzas in all.

Part 2: Fill in the blanks to make each equation true.

5. $\frac{3}{8} = \_\_\_\_\_ \times \frac{1}{8}$

6. $\frac{10}{12} = 10 \times \frac{1}{\square}$

Pie Parties

Use **fraction strips** to multiply. Convert improper fractions to mixed numbers.

1. The band had 6 musicians at their party. Each musician ate $\frac{2}{8}$ of a pie. How much pie did the musicians eat in all?

As an improper fraction, they ate _____ pies.

As a mixed number, they ate _____ pies in all.

2. The choir had 5 singers at their party. Each singer ate $\frac{2}{6}$ of a pie. How much pie did the singers eat in all?

As an improper fraction, they ate _____ pies.

As a mixed number, they ate _____ pies in all.

Part 2: Fill in the blanks to make each equation true.

3. $\frac{4}{5} = \_\_\_\_\_ \times \frac{1}{\square}$ **4.** $\frac{2}{6} = \_\_\_\_\_ \times \frac{1}{\square}$ **5.** $\frac{3}{4} = \_\_\_\_\_ \times \frac{1}{\square}$

Part 3: Rewrite each equation as the product of two whole numbers and a unit fraction. Use **fraction strips** to help.

6. $3 \times \frac{4}{5} = 3 \times \_\_\_\_\_ \times \frac{1}{\square}$

7. $9 \times \frac{2}{6} = \_\_\_\_\_ \times \_\_\_\_\_ \times \frac{1}{\square}$

8. $5 \times \frac{3}{4} = \_\_\_\_\_ \times \_\_\_\_\_ \times \frac{1}{\square}$

Lesson 40 Exit Ticket

Part 1: Use **fraction strips** to multiply. Convert improper fractions to mixed numbers.

1. At the family party, 6 people each ate $\frac{3}{8}$ of a pizza. How much pizza did they eat in all?

As an improper fraction, they ate _____ pizzas.

As a mixed number, they ate _____ pizzas in all.

2. At the party, 4 people ate cherry pie. They each ate $\frac{2}{6}$ of a pie. How much cherry pie did they eat in all?

As an improper fraction, they ate _____ pies.

As a mixed number, they ate _____ pies.

3. The DJ at the party played 3 dance mixes. Each mix was $\frac{3}{4}$ of an hour long. How long did the dance mixes play all together?

As an improper fraction, they played for _____ hours.

As a mixed number, they played for _____ hours.

Part 2: Fill in the blanks to make each equation true.

4. $\frac{5}{6} =$ _____ $\times \frac{1}{6}$

5. $\frac{4}{8} = 4 \times \frac{1}{\square}$

6. $\frac{4}{9} =$ _____ $\times \frac{1}{\square}$

7. $\frac{2}{3} =$ _____ $\times \frac{1}{\square}$

8. $\frac{9}{12} =$ _____ $\times \frac{1}{\square}$

9. $\frac{7}{10} =$ _____ $\times \frac{1}{\square}$

Extra Practice: Chore Money

Part 1: Talia is keeping track of her chore money for the week. She earns a fraction of a dollar for each chore she does. Use **fraction strips** to help you calculate what she earns for each chore. Convert all improper fractions to a mixed number.

Chore	Amount per Chore	Number of Times	Total
Dishes	$\frac{1}{4}$ of a dollar	7	
Vacuuming	$\frac{2}{3}$ of a dollar	8	
Windows	$\frac{1}{5}$ of a dollar	12	
Sweeping	$\frac{4}{6}$ of a dollar	5	
Bathrooms	$\frac{1}{2}$ of a dollar	9	

Part 2: Fill in the blanks to make each equation true.

1. $\frac{7}{8} = \_\_\_\_\_ \times \frac{1}{\square}$

2. $\frac{8}{6} = \_\_\_\_\_ \times \frac{\square}{6}$

3. $\frac{4}{5} = \_\_\_\_\_ \times \frac{1}{\square}$

4. $\frac{9}{10} = \_\_\_\_\_ \times \frac{\square}{10}$

Part 3: Rewrite the improper fractions as mixed numbers.

5. $\frac{17}{4} =$ _____

6. $\frac{14}{3} =$ _____

7. $\frac{19}{6} =$ _____

8. $\frac{18}{10} =$ _____

School Olympics

Use **tape diagrams** to solve each problem. Write a multiplication equation for each problem. Convert improper fractions to mixed numbers using a **number bond**.

1. In the backstroke swimming event, Daryl travels $\frac{5}{6}$ of a meter with every stroke. How far does he go with every 5 strokes?

Equation: _____

He goes _____ meters with every 5 strokes.

2. For one hurdle event, each hurdle is placed $\frac{2}{5}$ of the distance around the track. If Peyton goes over 3 hurdles, how many times has she gone around the track?

Equation: _____

She has gone around the track _____ times.

3. Khloe is doing her gymnastics routine on the floor. She does 4 steps to prepare for a flip. Each step must be $\frac{6}{7}$ of a meter. How far does she step all together?

Equation: _____

She steps _____ meters.

4. Connor is practicing his discus throw. He throws the disk 6 times. Each time, he throws his disk $\frac{2}{12}$ of a mile. How far does he throw the disk in total?

Equation: _____

He throws the disk _____ mile in total.

Multiplication Practice

Review the example problem. Then, use **tape diagrams** to solve. Convert all improper fractions to mixed numbers using **number bonds**.

Example

Multiply $\mathbf{5} \times \frac{\mathbf{2}}{\mathbf{3}}$ using a tape diagram.

Step 1

Draw a tape diagram. Divide it into the number of groups indicated by the whole-number factor. Label each part according to the fraction.

The whole number is **5**, so the tape should have **5** parts. The fraction is $\frac{\mathbf{2}}{\mathbf{3}}$, so each part shows $\frac{\mathbf{2}}{\mathbf{3}}$.

$\frac{2}{3}$	$\frac{2}{3}$	$\frac{2}{3}$	$\frac{2}{3}$	$\frac{2}{3}$

Step 2

Draw another row in the diagram to show the unit fractions for each part.

$\frac{\mathbf{2}}{\mathbf{3}} = \frac{1}{3} + \frac{1}{3}$

$\frac{2}{3}$		$\frac{2}{3}$		$\frac{2}{3}$		$\frac{2}{3}$		$\frac{2}{3}$	
$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$

Step 3

Add the unit fractions to find the whole. Remember that the denominator stays the same.

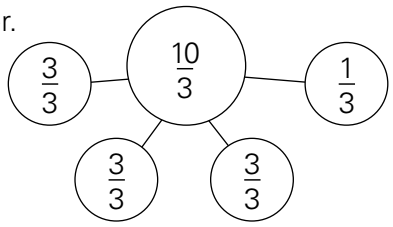
$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} = \frac{10}{3}$

$\mathbf{5} \times \frac{\mathbf{2}}{\mathbf{3}} = \frac{10}{3}$

Step 4

Convert the improper fraction to a mixed number using a number bond. Break up the whole into whole number fractions, with a fraction left over.

$\mathbf{5} \times \frac{\mathbf{2}}{\mathbf{3}} = \frac{10}{3} = 3\frac{1}{3}$



1. $6 \times \frac{7}{9} =$ _____

2. $7 \times \frac{2}{10} =$ _____

3. $3 \times \frac{2}{5} =$ _____

4. $4 \times \frac{4}{5} =$ _____

5. $8 \times \frac{1}{3} =$ _____

6. $3 \times \frac{7}{8} =$ _____

7. $4 \times \frac{3}{4} =$ _____

8. $5 \times \frac{2}{5} =$ _____

Lesson 41 Exit Ticket

Multiply the following whole numbers by a fraction using a **tape diagram**. Convert all improper fractions to mixed numbers using **number bonds**.

1. $7 \times \frac{2}{5} =$ _____

2. $4 \times \frac{5}{6} =$ _____

3. $8 \times \frac{2}{3} =$ _____

Extra Practice: Fraction Stories

Fill in the blanks to make an original word problem. Then, share with a partner to have them solve. All answers should be written as a mixed number or fraction.

1. Frankie is making a bracelet for her mother. The bracelet will have _____ (1-digit #)

beads on it. Each bead is _____ (fraction) of an inch long. How long will the beaded

part of the bracelet be when Frankie is finished?

The beaded part will be _____ inches long.

2. Kyle is building a birdhouse. The birdhouse will be _____ (1-digit #) stories high.

Each story of the birdhouse is _____ (fraction) foot tall. How tall will the birdhouse

be when it is complete?

The birdhouse will be _____ feet tall.

Fraction Match Cards

$\frac{12}{5}$	$2\frac{2}{5}$
$\frac{7}{5}$	$1\frac{2}{5}$
$\frac{21}{4}$	$5\frac{1}{4}$
$\frac{9}{4}$	$2\frac{1}{4}$

Fraction Match Cards

$\frac{20}{6}$	$3\frac{2}{6}$
$\frac{10}{6}$	$1\frac{4}{6}$
$\frac{7}{2}$	$3\frac{1}{2}$
$\frac{5}{2}$	$2\frac{1}{2}$

Fabric Multiplication

Use the multiplication algorithm to determine how much fabric is needed for the described quilt squares. Convert the product to a mixed number using **number bonds**. Choose two problems and check your work with a **tape diagram**.

9 squares $\frac{2}{5}$ **yard per square**	**6 squares** $\frac{3}{7}$ **yard per square**
Multiplication: _____ Solve: _____	Multiplication: _____ Solve: _____
7 squares $\frac{4}{10}$ **yard per square**	**4 squares** $\frac{5}{6}$ **yard per square**
Multiplication: _____ Solve: _____	Multiplication: _____ Solve: _____
5 squares $\frac{2}{8}$ **yard per square**	**8 squares** $\frac{3}{5}$ **yard per square**
Multiplication: _____ Solve: _____	Multiplication: _____ Solve: _____

Multiplication with an Algorithm Practice

Review the example problem. Then solve each problem using the multiplication algorithm. Use a **number bond** to convert improper fractions to mixed numbers.

Example

Use the multiplication algorithm to multiply. Write the product as a mixed number. $\mathbf{7} \times \frac{\mathbf{2}}{\mathbf{5}}$

Step 1

To find the numerator of the product, multiply the whole number by the numerator.

The whole number is **7**.

The numerator of $\frac{\mathbf{2}}{\mathbf{5}}$ is **2**.

$\mathbf{7} \times \mathbf{2} = 14$

$\mathbf{7} \times \frac{\mathbf{2}}{\mathbf{5}} = \frac{14}{?}$

Step 2

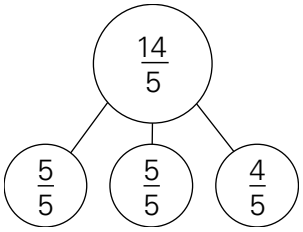
The product will have the same denominator as the fraction factor.

The denominator of $\frac{\mathbf{2}}{\mathbf{5}}$ is **5**, so the product of $\mathbf{7} \times \frac{\mathbf{2}}{\mathbf{5}}$ will have a denominator of **5**.

$\mathbf{7} \times \frac{\mathbf{2}}{\mathbf{5}} = \frac{14}{5}$

Step 3

Use a number bond to turn the improper fraction into a mixed number. Create whole number fractions until a fractional part is left over.



$\mathbf{7} \times \frac{\mathbf{2}}{\mathbf{5}} = \frac{14}{5} = 2\frac{4}{5}$

1. $2 \times \frac{5}{6} =$ _____

2. $9 \times \frac{2}{3} =$ _____

3. $5 \times \frac{3}{4} =$ _____

4. $3 \times \frac{1}{4} =$ _____

5. $7 \times \frac{4}{9} =$ _____

6. $4 \times \frac{6}{7} =$ _____

7. $4 \times \frac{8}{12} =$ _____

8. $9 \times \frac{3}{5} =$ _____

Lesson 42 Exit Ticket

Solve the problems using the multiplication algorithm. Convert improper fractions to mixed numbers using number bonds. Check your work with a tape diagram.

1. $3 \times \frac{5}{6} =$ _____

2. $6 \times \frac{3}{8} =$ _____

Extra Practice: Pizza Mayhem

Use the multiplication algorithm to calculate the amount of pizza that was eaten at each grade-level party. Use a number bond to convert the improper fraction to a mixed number.

1. The 3rd graders ate $\frac{3}{4}$ of each pizza.

Pepperoni	Mushrooms	Cheese	Peppers	Veggie Lovers

Equation: _____

The 3rd graders ate _____ pizzas.

2. The 4th graders ate $\frac{4}{5}$ of each pizza.

Pepperoni	Cheese	Meat Lovers	Extra Cheese

Equation: _____

The 4th graders ate _____ pizzas.

3. The 5th graders ate $\frac{3}{8}$ of each pizza.

Pepperoni	Mushrooms	Cheese	Hawaiian	White Pizza	Sausage

Equation: _____

The 5th graders ate _____ pizzas.

4. Which grade ate the most pizza? _____

Craft Days

Use any strategy to calculate the amount of material needed for the different crafts. Then write an equation to represent the problem. Convert all improper fractions to mixed numbers.

1. The arts and crafts class makes picture frames. They need $\frac{7}{10}$ of a foot of wood trim for each picture frame. They plan to make 6 picture frames. How much wood trim do they need?

Equation: _____ They need _____ feet of wood trim.

2. Some students make bracelets. They need $\frac{3}{5}$ of a bag of beads for each bracelet. If they make 9 bracelets, how many bags of beads do they need?

Equation: _____ They need _____ bags of beads.

3. The students make May Day paper flower baskets. The ribbons to tie each basket are $\frac{2}{4}$ of a foot long. They plan to make 9 baskets. How much ribbon do they need?

Equation: _____ They need _____ feet of ribbon.

4. Think about the expression $12 \times \frac{2}{5}$. Will the product be greater than or less than the whole number, 12? How do you know? _____

_____

_____

_____

Jewelry Making

Review the example problem. Then use any strategy to solve. Write an equation to represent the problem. Convert improper fractions to mixed numbers.

Example

Shawna made **5** necklaces. Each necklace used $\frac{2}{3}$ of a foot of string. How many feet of string did she use?

Step 1

Write an equation for the problem.

Each necklace is like one group of string. So, I need to find out how much string in **5** groups of $\frac{2}{3}$ feet.

$5 \times \frac{2}{3}$

Step 2

Multiply the whole number and the numerator of the fraction.

The whole number is **5**. The numerator of $\frac{2}{3}$ is 2.

$5 \times 2 = 10$

Step 3

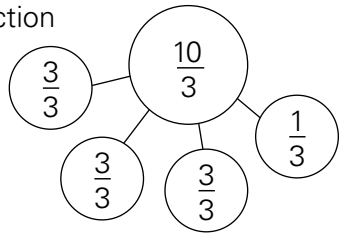
The denominator of the product is the same as the fraction factor. Complete an equation.

The denominator of $\frac{2}{3}$ is 3, so the product has a denominator of 3.

$5 \times \frac{2}{3} = \frac{10}{3}$

Step 4

Convert the improper fraction to a mixed number using whole number fractions.



$5 \times \frac{2}{3} = \frac{10}{3} = 3\frac{1}{3}$

Shawna used $3\frac{1}{3}$ feet of string.

1. Shawna made rings that each weighed $\frac{6}{8}$ of an ounce. If Shawna made 6 rings, how much did they weigh all together?

Equation: _____ They weighed _____ ounces.

2. Shawna also made hair clips. Each hair clip was covered in $\frac{1}{6}$ of a bag of glitter. If Shawna made 24 hair clips, how many bags of glitter did she use?

Equation: _____ She used _____ bags of glitter.

3. Shawna made a jewelry board to showcase her jewelry. She placed the hooks $\frac{2}{3}$ of an inch apart. There are 8 hooks on the board. How wide is the board?

Equation: _____ The board is _____ inches wide.

Lesson 43 Exit Ticket

Write an equation to represent each problem and use any strategy to solve. Convert all improper fractions to mixed numbers.

1. Julio ran $\frac{6}{9}$ of a mile for 7 days in a row. How far did he run in all?

Equation: _____

He ran _____ miles.

2. Nadia has 7 containers of paint. Each container weighs $\frac{3}{4}$ of a pound. What is the total weight of the paint containers?

Equation: _____

The total weight is _____ pounds.

3. Andre and Kaya are calculating what they owe for 25 books that they are buying. Andre said that $26 is enough to pay for the 25 books, since they each cost $\frac{3}{4}$ of a dollar. Without multiplying, think about whether Andre is right. Why or why not?

_____

_____

_____

Extra Practice: Relay Racers

Complete the table to show how far each motocross team went in their relay race.

	Word Problem	Multiplication Expression	Improper Fraction	Mixed Number
1.	The Rocking Racers had a team of 5 riders. Each rider had to go $\frac{7}{8}$ of a mile before the next racer took off. How far did the Rocking Racers go in their race?			
2.	The Motto Heads had a team of 7 riders. Each rider had to go $\frac{5}{6}$ of a mile before the next racer took off. How far did the Motto Heads go in their race?			
3.	The Biker Boys had a team of 3 riders. Each rider had to go $\frac{2}{3}$ of a mile before the next racer took off. How far did the Biker Boys go in their race?			
4.	The Racin' Riders had a team of 12 riders. Each rider had to go $\frac{4}{5}$ of a mile before the next racer took off. How far did the Racin' Riders go in their race?			

Assessment

Unit 6 Assessment

1. Fiona makes a fruit salad with $\frac{1}{4}$ cup of strawberries, $\frac{1}{4}$ cup of blueberries, and $\frac{1}{4}$ cup of raspberries. How much fruit is in the fruit salad? Write an addition equation and solve.

Equation: _____

There is _____ cup of fruit in the fruit salad.

2. Delaney is walking to the store. The store is $\frac{7}{8}$ of a mile from her home. If Delaney has already walked $\frac{3}{8}$ of a mile, how much farther does she have to go to get to the store? Write an equation and solve the problem.

Equation: _____

She has to walk _____ miles farther.

3. Draw a tape diagram to subtract.

$4\frac{2}{5} - 2\frac{4}{5} =$ _____

4. Draw a tape diagram to add.

$5\frac{2}{3} + 3\frac{2}{3} =$ _____

5. Kareem runs $3\frac{2}{7}$ miles on Monday and $2\frac{6}{7}$ miles on Tuesday. How much did he run in all? Write an equation and solve.

Equation: _____

He ran _____ miles in all.

6. Subtract. Choose any tool or strategy to solve.

$8\frac{3}{9} - 3\frac{5}{9} =$ _____

7. Tam made a wooden frame. The back of the frame is made of 5 planks of wood. Each plank is $\frac{1}{7}$ of a foot wide. How wide is the frame? Write an addition equation and a multiplication equation to solve.

Addition: _____

Multiplication: _____

8. Use a tape diagram to multiply. Convert the improper fraction to a mixed number using a number bond.

$3 \times \frac{4}{8} =$ _____

9. Use the multiplication algorithm to solve. Convert the improper fraction to a mixed number using a number bond.

$3 \times \frac{3}{4} =$ _____

10. Sarai needs to make five batches of cookies for the school bake sale. Each batch requires $\frac{7}{8}$ of a cup of flour. How much flour does Sarai need to make 5 batches of cookies? Write an equation and solve.

Equation: _____

Sarai needs _____ cups of flour.

Unit 6 Cumulative Review

1. Celia collects coins. She has 7 bags of coins, and each bag has 40 coins in it. How many coins does Celia have? Write a multiplication equation and solve.

Equation: _____

Celia has _____ coins.

2. Fill in the blanks to complete the pattern. Use the rule ×5.

2, _____, _____, _____, _____

3. Bryce evenly divides 132 chocolate chip cookies onto 4 plates. How many cookies are on each plate? Write a division equation and solve.

Equation: _____

There are _____ cookies on each plate.

4. At field day, there was an egg and spoon race. The fourth graders had 7 students on their team. Each student ran $\frac{3}{8}$ of a mile. How far did the fourth graders run in all?

Equation: _____

The fourth graders ran _____ miles in all.

5. Angelina is sewing fabric together to make a quilt. She sews together a strip of fabric that is $3\frac{2}{3}$ inches long and another strip that is $2\frac{1}{3}$ inches long. How long is the strip of fabric now?

$3\frac{2}{3} + 2\frac{1}{3} =$ _____

The strip of fabric is _____ inches long.

6. Compare the fractions. Use <, >, or =.

$\frac{5}{7}$ ◯ $\frac{3}{7}$

7. The fourth-grade class selected their lunch today. Of the 63 students, 24 selected spaghetti, 14 selected a salad, and the rest selected tacos. The teacher estimates that about 10 students selected tacos. Is that a good estimate?

_____

_____

_____

_____

8. Compare the numbers. Use <, >, or =.

13,634 ◯ 14,693

9. Jeff is helping plant corn in his grandfather's field. They plant 35 rows and put 42 plants in each row. How many corn plants did Jeff and his grandfather plant?

They planted _____ corn plants.

10. Find the equivalent fraction.

$$\frac{6}{12} = \frac{\square}{36}$$

11. What is 763 rounded to the nearest hundred? _____

12. Luis scored 856 points playing his *Adventures in Space* video game. He earned 348 points playing his *Beach Finds* video game. How many more points did Luis earn playing *Adventures in Space* than playing *Beach Finds*?

He earned _____ more points playing *Adventures in Space*.

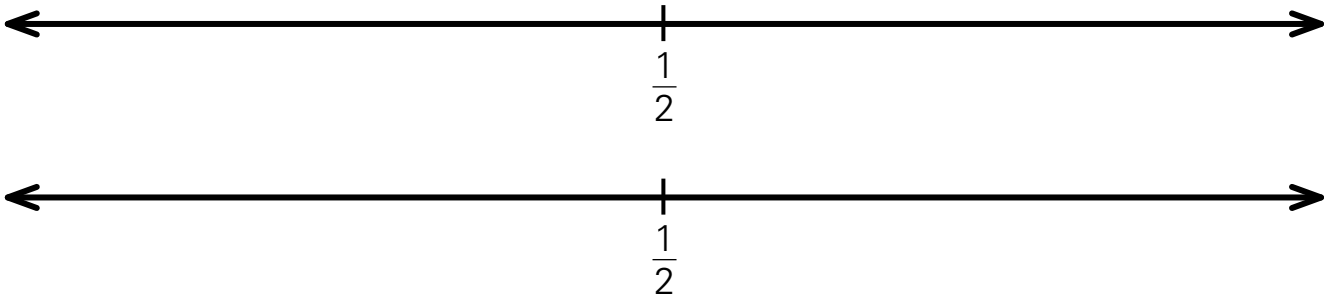
13. Add.

$$\begin{array}{r} 57,834 \\ +\ 32,591 \\ \hline \end{array}$$

14. Malia bought two big jars of jelly beans. Each jar contains 2,462 jelly beans. How many jelly beans did Malia buy in all?

She bought _____ jelly beans in all.

15. Juana is making a salsa recipe that asks for $\frac{3}{12}$ teaspoon of salt and $\frac{6}{8}$ teaspoon of pepper. Does the recipe ask for more salt or more pepper? Use the benchmark of $\frac{1}{2}$ on the number lines to compare the fractions.



The recipe calls for more _____.