

Learning Recovery

Grade 4 Summer Packet

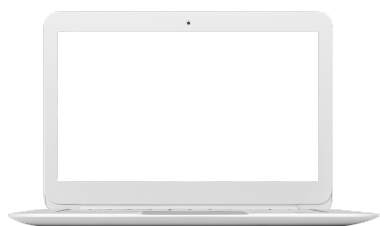
Grade 4 Mission 5 Lessons 1-21 (21 lessons)

Equivalent Fractions

Grade 4 Mission 6 Lessons 1-16 (15 lessons*)

Decimal Fractions

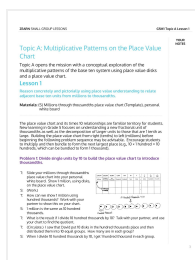
Students should complete one of the two sections below for each Mission:



Section One

Complete with all digital lessons

- Student Notes
- Exit Tickets



Section Two

If internet access is not available,
complete paper-based work

- Problem Sets
- Homework

*Some lessons omitted from Zearn Math's Digital Lesson sequence - [visit our Help Center](#) to learn more

Mission 5: Equivalent Fractions

Section One: Student Notes and Exit Tickets

To complete with all digital lessons

Are you ready to
➔EARN?

Mission 5:

Equivalent Fractions

Name: _____

© 2019 Zearn

Portions of this work, Zearn Math, are derivative of Eureka Math and licensed by Great Minds. © 2019 Great Minds. All rights reserved. Eureka Math was created by Great Minds in partnership with the New York State Education Department and also released as EngageNY.

Zearn® is a registered trademark.

Printed in the U.S.A.

This book may be purchased from the publisher at **[zearn.org](https://www.zearn.org)**.

Fourth Edition

Lesson 1

G:4 M:5

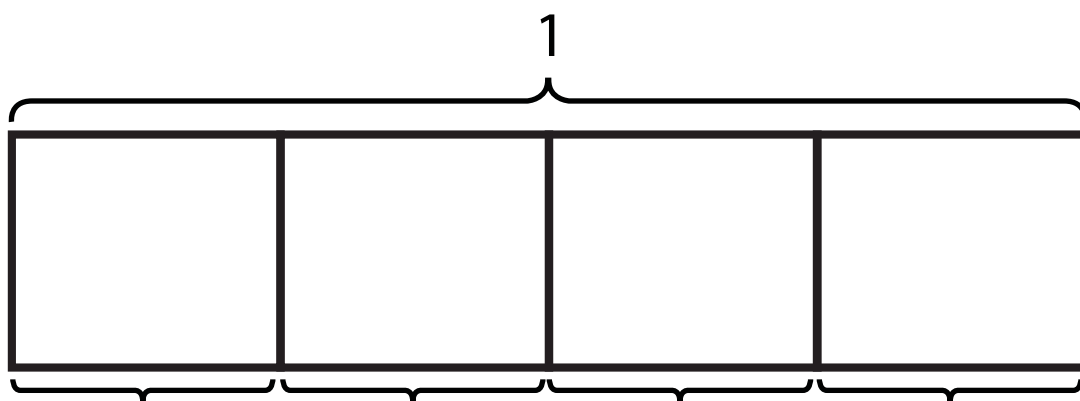
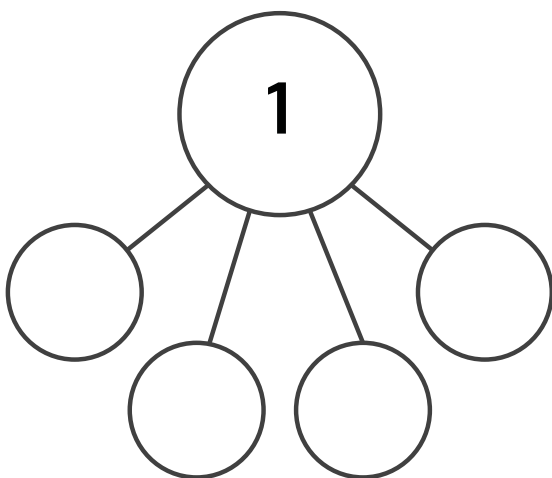
EXIT TICKET


Name: _____ Date: _____

Complete: ☐

Class: _____

1. Complete the number bond and write the number sentence to match the tape diagram.





2. Draw and label tape diagrams to model each number sentence.

a. $1 = \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$

b. $\frac{5}{6} = \frac{2}{6} + \frac{2}{6} + \frac{1}{6}$



Lesson 2
G:4 M:5

Decompose and Group

ZEARN STUDENT NOTES

Name: _____ Date: _____

Complete: ☐

Class: _____

1

How can you decompose $\frac{7}{8}$ into two parts?

SHOW YOUR WORK

$$\frac{7}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$$

$$\frac{7}{8} = \underline{\quad} + \underline{\quad}$$



EXTRA WORKSPACE



Lesson 2
G:4 M:5

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

Step 1: Draw and shade a tape diagram of the given fraction.

Step 2: Record the decomposition of the fraction in three different ways using number sentences.

$$\frac{4}{7}$$

TAPE DIAGRAM

DECOMPOSITIONS



Lesson 3
G:4 M:5

Decompose and Multiply

ZEARN STUDENT NOTES

Name: _____ Date: _____

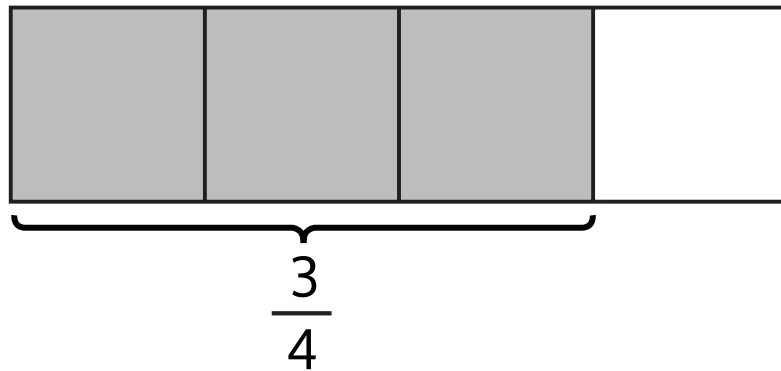
Complete: ☐

Class: _____

1

Decompose $\frac{3}{4}$ as the sum of unit fractions.

Then, express that addition sentence using multiplication.



$$\frac{3}{4} = \frac{\quad}{\quad} + \frac{\quad}{\quad} + \frac{\quad}{\quad}$$

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



EXTRA WORKSPACE



Lesson 3

G:4 M:5

EXIT TICKET

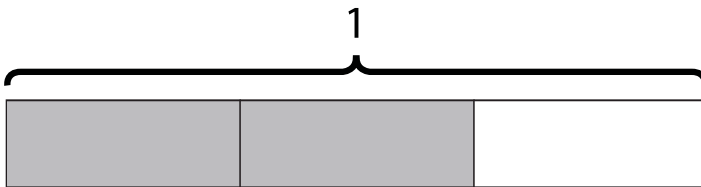
Name: _____ Date: _____

Complete: ☐

Class: _____

1. Decompose each fraction modeled by a tape diagram as a sum of unit fractions. Write the equivalent multiplication sentence.

a.



b.



- 
2. Draw a tape diagram and record the given fraction's decomposition into unit fractions as a multiplication sentence.

SHOW YOUR WORK

$$\frac{6}{9}$$



| | |
|----------------------------|---------------------------------|
| Lesson 4 G:4 M:5 | Different Decompositions |
| | ZEARN STUDENT NOTES |

Name: _____ Date: _____

Complete: ☐

Class: _____

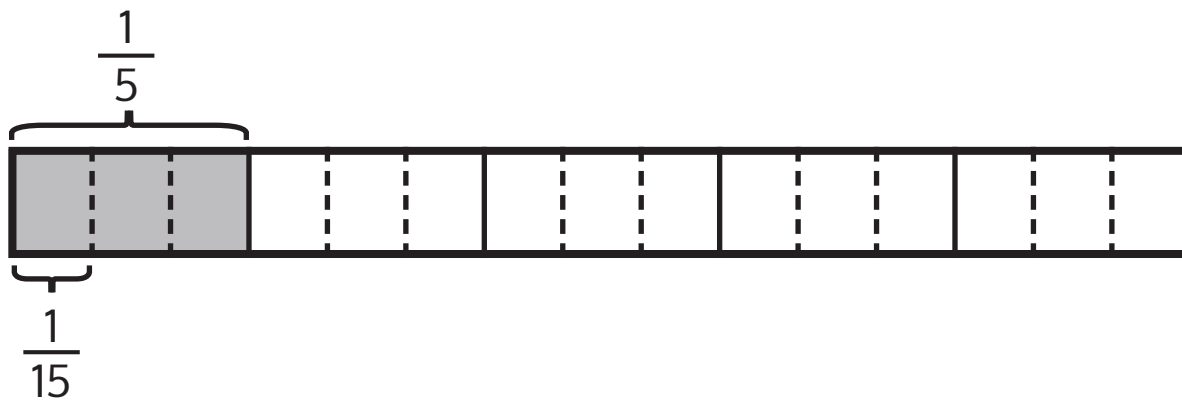
- 1 Use the tape diagram to show the decomposition of $\frac{1}{3}$ as the sum of smaller unit fractions.

SHOW YOUR WORK




2

Write an addition sentence and a multiplication sentence to show how many fifteenths it takes to make 1 fifth.



SOLVE

$$\frac{1}{5} = \underline{\quad} + \underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\frac{1}{5} = \underline{\quad} \times \underline{\quad} = \underline{\quad}$$



Lesson 4

G:4 M:5

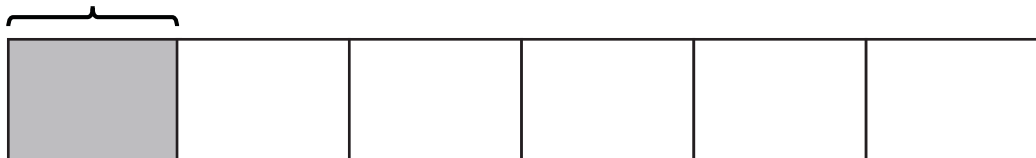
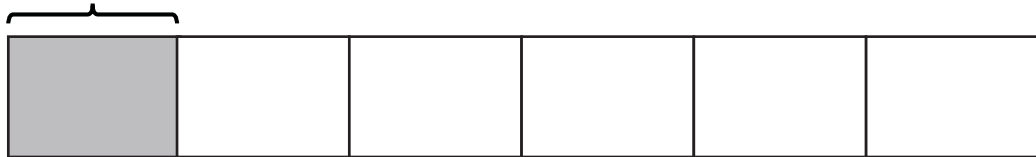
EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

1. The total length of the tape diagram represents 1 whole.
Decompose the shaded unit fraction as the sum of smaller unit fractions in at least two different ways.



- 
2. Draw a tape diagram to prove the following statement.

SHOW YOUR WORK

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



Lesson 5

G:4 M:5

EXIT TICKET

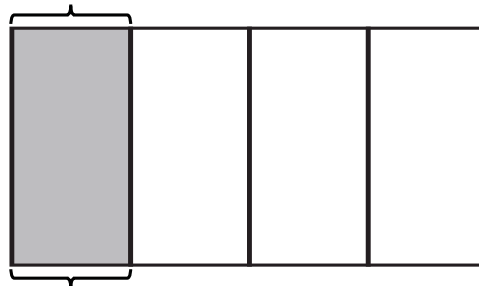
Name: _____ Date: _____

Complete: ☐

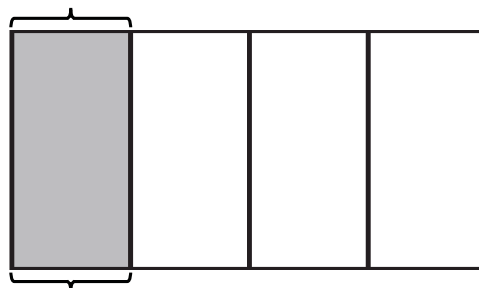
Class: _____


1. Draw horizontal lines to decompose each rectangle into the number of rows as indicated. Use the model to give the shaded area as both a sum of unit fractions and as a multiplication sentence.

a. 2 rows



b. 3 rows



- 
2. Draw an area model to show the decomposition represented by the number sentence below. Represent the decomposition as a sum of unit fractions and as a multiplication sentence.

SHOW YOUR WORK

$$\frac{3}{5} = \frac{6}{10}$$



| | |
|----------------------------|--------------------------------|
| Lesson 6 G:4 M:5 | Area Model – Breakdown! |
| | ZEARN STUDENT NOTES |

Name: _____ Date: _____

Complete: ☐

Class: _____

- 1 Draw an area model to show that $\frac{2}{3} = \frac{8}{12}$.

SHOW YOUR WORK



2

Draw an area model to represent 5 thirds.

Then partition it into sixths to find an equivalent fraction.

SHOW YOUR WORK

$$\frac{5}{3} = \underline{\hspace{2cm}}$$



Lesson 6

G:4 M:5

EXIT TICKET

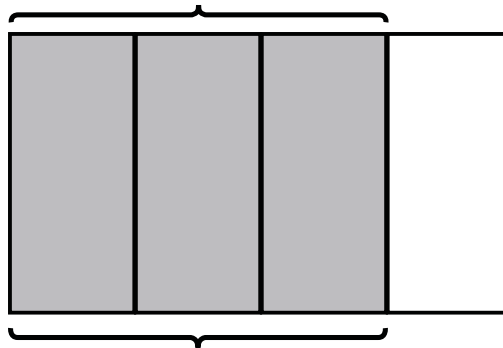
Name: _____ Date: _____


Complete: ☐

Class: _____

1. The rectangle below represents 1 whole. Draw horizontal lines to decompose the rectangle into eighths. Use the model to give the shaded area as a sum and as a product of unit fractions. Use parentheses to show the relationship between the number sentences.

SHOW YOUR WORK



- 
2. Draw an area model to show the decomposition represented by the number sentence below.

SHOW YOUR WORK

$$\frac{4}{5} = \frac{8}{10}$$



Lesson 7
G:4 M:5

Same Area

ZEARN STUDENT NOTES

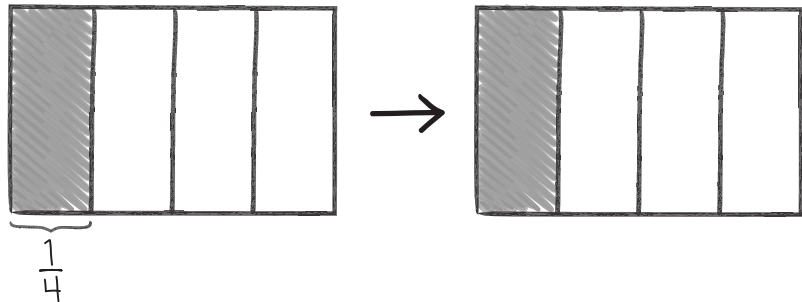
Name: _____ Date: _____

Complete: ☐

Class: _____

- 1** Find an equivalent fraction to $\frac{1}{4}$ that has twice as many units. Use the area model and multiplication.

Area Model:



Multiplication: $\frac{1}{4} = \frac{1 \times}{4 \times} = \underline{\hspace{2cm}}$

2

Rename $\frac{1}{3}$ using ninths.

Verify that the fraction you made is equivalent to $\frac{1}{3}$ by drawing an area model.

Multiplication: $\frac{1}{3} = \frac{1 \times}{3 \times} = \underline{\hspace{2cm}}$

Area Model:



Lesson 7
G:4 M:5

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

1. Draw two different area models to represent $\frac{1}{4}$ by shading.

Decompose the shaded fraction into (a) eighths and (b) twelfths.

Use multiplication to show how each fraction is equivalent to $\frac{1}{4}$.

a.

b.



Lesson 8
G:4 M:5

Multiply for Equality?

ZEARN STUDENT NOTES

Name: _____ Date: _____

Complete: ☐

Class: _____

1

Use multiplication to prove that $\frac{3}{5} = \frac{6}{10}$.

Then, draw an area model to confirm your number sentence.

Multiplication: $\frac{3}{5} = \frac{3 \times}{5 \times} = \underline{\hspace{2cm}}$

Area model:



EXTRA WORKSPACE



Lesson 8
G:4 M:5

EXIT TICKET

Name: _____ Date: _____

Complete: ☐


Class: _____

1. Use multiplication to create an equivalent fraction for the fraction below.

SHOW YOUR WORK

$$\frac{2}{5}$$



- 
2. Determine if the following is a true number sentence. If needed, correct the statement by changing the right-hand side of the number sentence.

SHOW YOUR WORK

$$\frac{3}{4} = \frac{9}{8}$$



Lesson 9
G:4 M:5

Same Fraction, Fewer Parts

ZEARN STUDENT NOTES

Name: _____ Date: _____

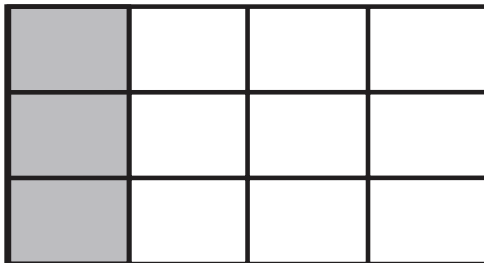
Complete: ☐

Class: _____

- 1** Compose the shaded fraction into an equivalent fraction by circling the new unit.

Then, write a division sentence based on your composition.

SHOW YOUR WORK



$$\underline{\hspace{2cm}} = \frac{\underline{\hspace{2cm}}}{\underline{\hspace{2cm}}} = \underline{\hspace{2cm}}$$



2

Draw area models to show $\frac{2}{6}$ and $\frac{4}{12}$.

Then, find equivalent fractions.

SHOW YOUR WORK



$$\frac{2}{6} = \underline{\hspace{2cm}}$$



$$\frac{4}{12} = \underline{\hspace{2cm}}$$

EXTRA WORKSPACE



Lesson 9
G:4 M:5

EXIT TICKET

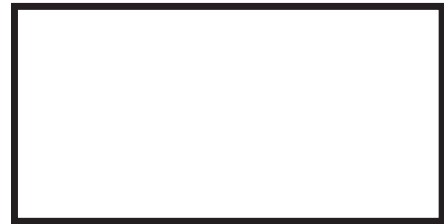
Name: _____ Date: _____

Complete: ☐

Class: _____

1. In the first area model, show $\frac{3}{6}$. In the second area model, show $\frac{6}{12}$. Show how both fractions can be composed, or renamed, as the same unit fraction.

SHOW YOUR WORK



2. Express the equivalent fractions in a number sentence using division.

DIVISION EQUATIONS



Lesson 10
G:4 M:5

Same Fraction, Fewest Parts

ZEARN STUDENT NOTES

Name: _____ Date: _____

Complete: ☐

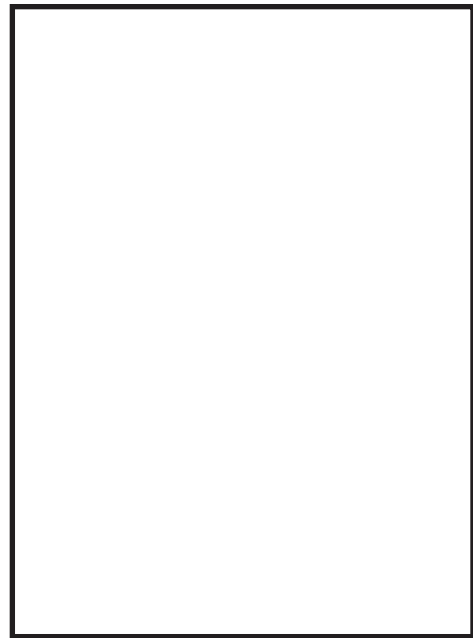
Class: _____

1

Draw an area model to represent $\frac{8}{12}$.

Then compose a fraction equivalent to $\frac{8}{12}$, with larger fractional units.

SHOW YOUR WORK



$$\frac{8}{12}$$



2

Rename $\frac{6}{12}$ with the largest units possible without using an area model.

Express the equivalence using a division number sentence.

SHOW YOUR WORK

$$\frac{6}{12} = \frac{\div}{\div} = \underline{\hspace{2cm}}$$

EXTRA WORKSPACE



Lesson 10
G:4 M:5

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

1. Draw an area model to show why the fractions are equivalent.

Show the equivalence in a number sentence using division.

SHOW YOUR WORK

$$\frac{4}{10} = \frac{2}{5}$$



Lesson 11
G:4 M:5

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

1. Partition a number line from 0 to 1 into sixths. Decompose $\frac{2}{6}$ into 4 equal lengths.
2. Write a number sentence using multiplication to show what fraction represented on the number line is equivalent to $\frac{2}{6}$.
3. Write a number sentence using division to show what fraction represented on the number line is equivalent to $\frac{2}{6}$.



Lesson 12
G:4 M:5

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

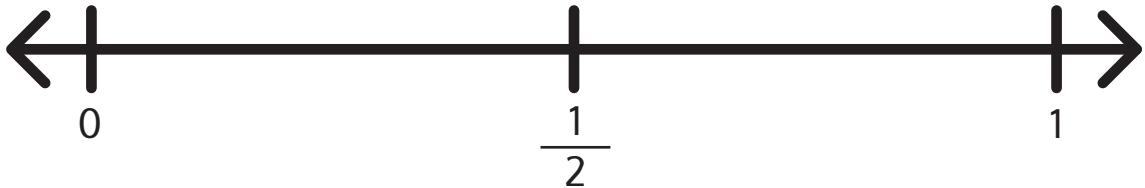
Class: _____

1. Plot the following points on the number line without measuring.

a. $\frac{8}{10}$

b. $\frac{3}{5}$

c. $\frac{1}{4}$



2. Use the number line in Problem 1 to compare the fractions by writing $>$, $<$, or $=$ in the circles.

a. $\frac{1}{4}$  $\frac{1}{2}$

b. $\frac{8}{10}$  $\frac{3}{5}$

c. $\frac{1}{2}$  $\frac{3}{5}$

d. $\frac{1}{4}$  $\frac{8}{10}$



Lesson 13
G:4 M:5

Benchmark to Compare

ZEARN STUDENT NOTES

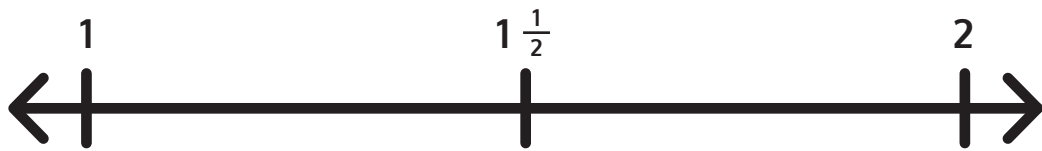
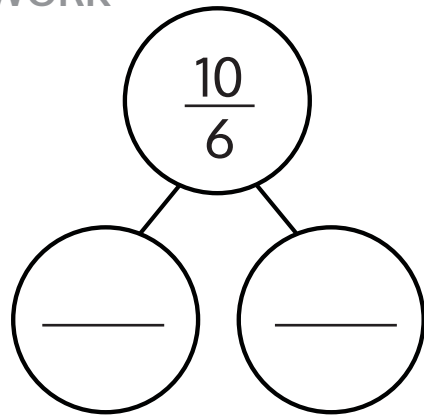
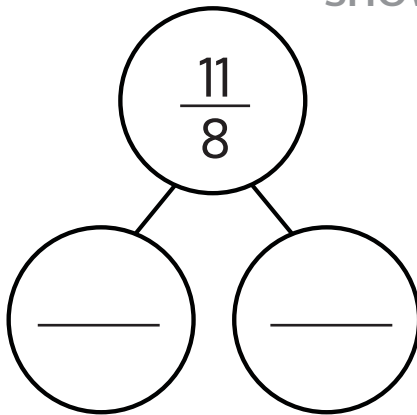
Name: _____ Date: _____

Complete: ☐

Class: _____

1 Compare $\frac{11}{8}$ and $\frac{10}{6}$.

SHOW YOUR WORK



$$\frac{11}{8} \bigcirc \frac{10}{6}$$

EXTRA WORKSPACE



Lesson 13
G:4 M:5

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

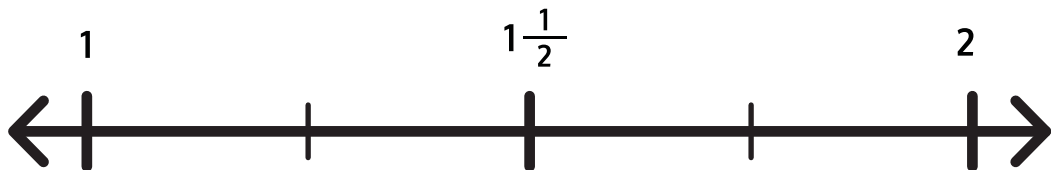
Class: _____

1. Place the following fractions on the number line given.

a. $\frac{5}{4}$

b. $\frac{10}{7}$

c. $\frac{16}{9}$



2. Compare the fractions using $>$, $<$, or $=$.

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

b. $\frac{5}{4} \bigcirc \frac{16}{9}$

c. $\frac{16}{9} \bigcirc \frac{10}{7}$

Lesson 14

G:4 M:5

Make the Same to Compare

ZEARN STUDENT NOTES

Name: _____ Date: _____

Complete: ☐

Class: _____

- 1 Use tape diagrams to model and compare $\frac{3}{5}$ and $\frac{7}{10}$.

SHOW YOUR WORK

$$\frac{3}{5}$$



$$\frac{3 \times}{5 \times} = \underline{\hspace{2cm}}$$

$$\frac{7}{10}$$



Common denominator: _____ \bigcirc _____

$$\frac{3}{5} \bigcirc \frac{7}{10}$$



EXTRA WORKSPACE



Lesson 14
G:4 M:5

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

1. Draw tape diagrams to compare the following fractions:

$$\frac{2}{5} \bigcirc \frac{3}{10}$$

2. Use a number line to compare the following fractions:

$$\frac{4}{3} \bigcirc \frac{7}{6}$$



Lesson 15
G:4 M:5

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

1. Draw an area model for each pair of fractions, and use it to compare the two fractions by writing $>$, $<$, or $=$ in the circle.

a. $\frac{3}{4}$  $\frac{4}{5}$

b. $\frac{2}{6}$  $\frac{3}{5}$



Lesson 16
G:4 M:5

Like Units Make It Work

ZEARN STUDENT NOTES

Name: _____ Date: _____

Complete: ☐

Class: _____

1 5 sixths – 4 sixths = _____

SHOW YOUR WORK



_____ - _____ = _____



EXTRA WORKSPACE



Lesson 16

G:4 M:5

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

1. Solve. Use a number bond to decompose the difference.
Record your final answer as a mixed number.

$$\frac{16}{9} - \frac{5}{9}$$

2. Solve. Use a number bond to decompose the sum. Record your final answer as a mixed number.

$$\frac{5}{12} + \frac{10}{12}$$



Lesson 17
G:4 M:5

Whole Use

ZEARN STUDENT NOTES

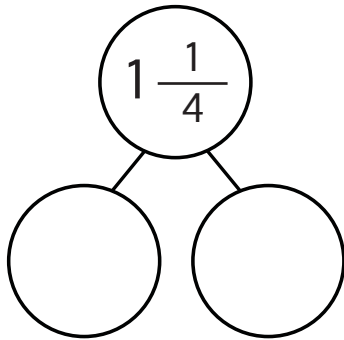
Name: _____ Date: _____

Complete: ☐

Class: _____

1 Solve $1\frac{1}{4} - \frac{3}{4}$.

SHOW YOUR WORK



$$1\frac{1}{4} = \underline{\hspace{1cm}} + \underline{\hspace{1cm}} = \underline{\hspace{1cm}}$$

1

$$1\frac{1}{4} - \frac{3}{4} = \underline{\hspace{1cm}}$$



EXTRA WORKSPACE



Lesson 17
G:4 M:5

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

1. Solve. Model the problem with a number line, and solve by both counting up and subtracting.

$$1 - \frac{2}{5}$$

2. Find the difference in two ways. Use a number bond to show the decomposition.

$$1\frac{2}{7} - \frac{5}{7}$$



Lesson 18
G:4 M:5

Three's Company

ZEARN STUDENT NOTES

Name: _____ Date: _____

Complete: ☐

Class: _____

1 $\frac{1}{6} + \frac{4}{6} + \frac{2}{6}$

SHOW YOUR WORK



2

Mrs. Cashmore bought a melon that weighed $1\frac{3}{5}$ pounds. She cut a piece that weighed $\frac{4}{5}$ pound and gave it to her neighbor. She then had $\frac{1}{5}$ pound as a snack.

How much of the melon is left?

DRAW

SOLVE



Lesson 18
G:4 M:5

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

1. Solve the following problems. Use number bonds to help you.

a. $\frac{5}{9} + \frac{2}{9} + \frac{4}{9}$

b. $1 - \frac{5}{8} - \frac{1}{8}$



Lesson 19
G:4 M:5

EXIT TICKET


Name: _____ Date: _____

Complete: ☐ Class: _____

Use the RDW process to solve.

1. Mrs. Smith took her bird to the vet. Tweety weighed $1\frac{3}{10}$ pounds. The vet said that Tweety weighed $\frac{4}{10}$ pound more last year. How much did Tweety weigh last year?

SHOW YOUR WORK

- 
2. Hudson picked $1\frac{1}{4}$ baskets of apples. Suzy picked 2 baskets of apples. How many more baskets of apples did Suzy pick than Hudson?

SHOW YOUR WORK



Lesson 20
G:4 M:5

Like Units, Like Sum

ZEARN STUDENT NOTES

Name: _____ Date: _____

Complete: ☐

Class: _____

1 $\frac{1}{2} + \frac{1}{8}$. Use the tape diagrams to help you solve.

SHOW YOUR WORK

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

$$\frac{1}{8}$$

$$\frac{1}{2} + \frac{1}{8} = \underline{\quad} + \underline{\quad} = \underline{\quad}$$



EXTRA WORKSPACE



Lesson 20
G:4 M:5

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

1. Draw a number line to model the addition. Solve, and then write a complete number sentence.

SHOW YOUR WORK

$$\frac{5}{8} + \frac{2}{4}$$



2. Solve without drawing a model.

SHOW YOUR WORK

$$\frac{3}{4} + \frac{1}{2}$$



| | |
|-----------------------------|----------------------------|
| Lesson 21 G:4 M:5 | Sum It Up |
| | ZEARN STUDENT NOTES |

Name: _____ Date: _____

Complete: ☐

Class: _____

- 1 Draw a number bond to show $\frac{9}{6}$ as a whole and parts.
Then, use your number bond to write $\frac{9}{6}$ as a mixed number.

SHOW YOUR WORK

$$\frac{9}{6} = \underline{\quad} + \underline{\quad} = \underline{\quad}$$



EXTRA WORKSPACE



Lesson 21
G:4 M:5

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

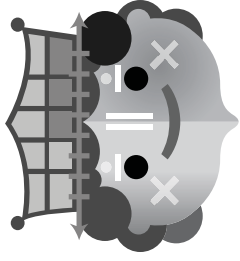
1. Solve. Write a complete number sentence. Use a number bond to write each sum as a mixed number. Use a model if needed.

a. $\frac{1}{4} + \frac{7}{8}$

b. $\frac{2}{3} + \frac{7}{12}$



ZEARN



Congratulations!
You completed

Grade 4 Mission 5

Equivalent Fractions

.....
Name

.....
Date



Mission 5: Equivalent Fractions

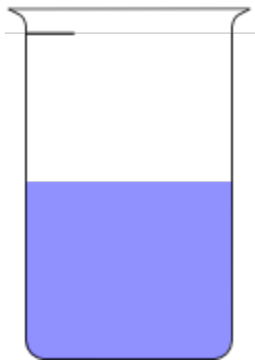
Section Two: Problem Sets and Homework

To complete if internet access is not available

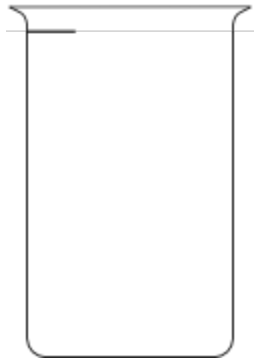
Name _____

Date _____

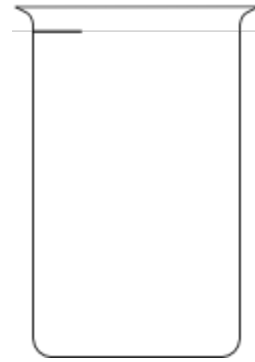
1. A beaker is considered full when the liquid reaches the fill line shown near the top. Estimate the amount of water in the beaker by shading the drawing as indicated. The first one is done for you.



1 half

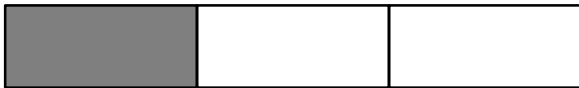


1 fourth



1 third

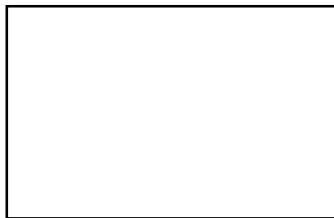
2. Juanita cut her string cheese into equal pieces as shown in the rectangles below. In the blanks below, name the fraction of the string cheese represented by the shaded part.



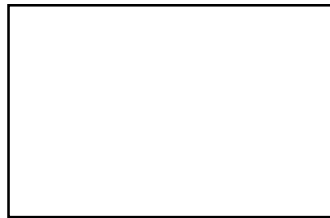




3. a. In the space below, draw a small rectangle. Estimate to split it into 2 equal parts. How many lines did you draw to make 2 equal parts? What is the name of each fractional unit?
- b. Draw another small rectangle. Estimate to split it into 3 equal parts. How many lines did you draw to make 3 equal parts? What is the name of each fractional unit?
- c. Draw another small rectangle. Estimate to split it into 4 equal parts. How many lines did you draw to make 4 equal parts? What is the name of each fractional unit?
4. Each rectangle represents 1 sheet of paper.
- a. Estimate to show how you would cut the paper into fractional units as indicated below.



sevenths

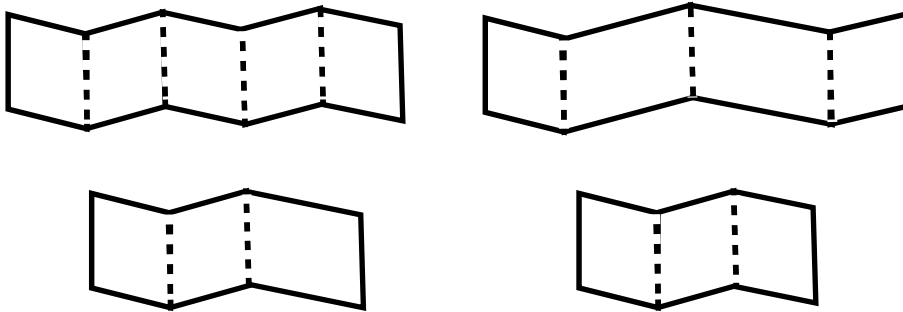


ninths

- b. What do you notice? How many lines do you think you would draw to make a rectangle with 20 equal parts?
5. Rochelle has a strip of wood 12 inches long. She cuts it into pieces that are each 6 inches in length. What fraction of the wood is one piece? Use your strip from the lesson to help you. Draw a picture to show the piece of wood and how Rochelle cut it.

Name _____ Date _____

1. Circle the strips that are folded to make equal parts.



2.



- a. There are _____ equal parts in all. _____ are shaded.



- b. There are _____ equal parts in all. _____ are shaded.



- c. There are _____ equal parts in all. _____ are shaded.



- d. There are _____ equal parts in all. _____ are shaded.

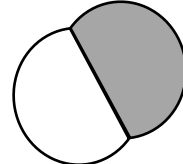
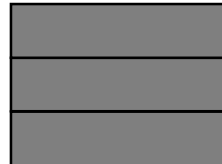
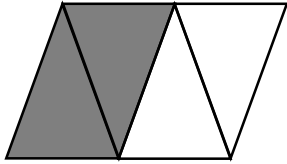
Use your fraction strips as tools to help you solve the following problems.

3. Noah, Pedro, and Sharon share a whole candy bar fairly. Which of your fraction strips shows how they each get an equal part? Draw the candy bar below. Then, label Sharon's fraction of the candy bar.
4. To make a garage for his toy truck, Zeno bends a rectangular piece of cardboard in half. He then bends each half in half again. Which of your fraction strips best matches this story?
- a. What fraction of the original cardboard is each part? Draw and label the matching fraction strip below.
- b. Zeno bends a different piece of cardboard in thirds. He then bends each third in half again. Which of your fraction strips best matches this story? Draw and label the matching fraction strip in the space below.

Name _____

Date _____

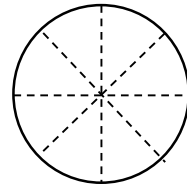
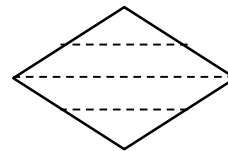
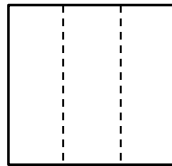
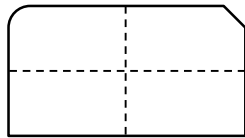
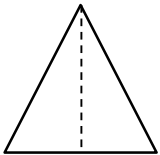
1. Each shape is a whole divided into equal parts. Name the fractional unit, and then count and tell how many of those units are shaded. The first one is done for you.



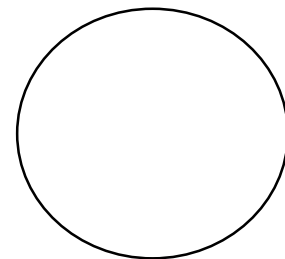
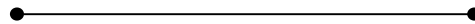
Fourths

2 fourths are shaded.

2. Circle the shapes that are divided into equal parts. Write a sentence telling what *equal parts* means.



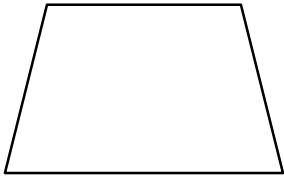
3. Each shape is 1 whole. Estimate to divide each into 4 equal parts. Name the fractional unit below.



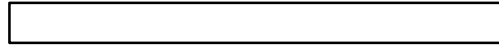
Fractional unit: _____

4. Each shape is 1 whole. Divide and shade to show the given fraction.

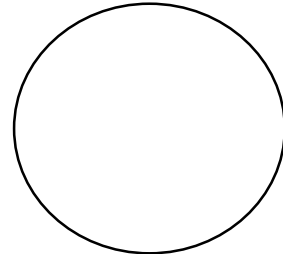
1 half



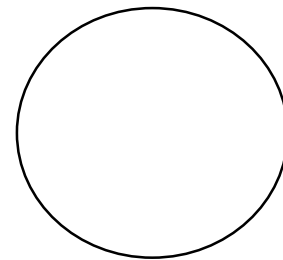
1 sixth



1 third



5. Each shape is 1 whole. Estimate to divide each into equal parts (do not draw fourths). Divide each whole using a different fractional unit. Write the name of the fractional unit on the line below the shape.



6. Charlotte wants to equally share a candy bar with 4 friends. Draw Charlotte's candy bar. Show how she can divide her candy bar so everyone gets an equal share. What fraction of the candy bar does each person receive?

Each person receives _____.

Name _____

Date _____

1. Draw a picture of the yellow strip at 3 (or 4) different stations. Shade and label 1 fractional unit of each.

2. Draw a picture of the brown bar at 3 (or 4) different stations. Shade and label 1 fractional unit of each.

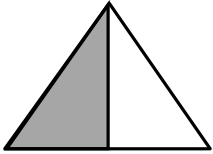

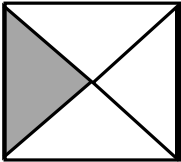
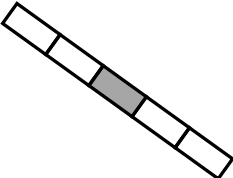
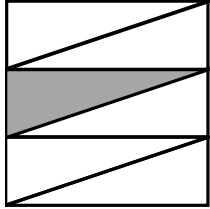
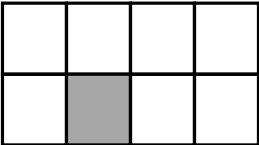
3. Draw a picture of the square at 3 (or 4) different stations. Shade and label 1 fractional unit of each.

4. Draw a picture of the clay at 3 (or 4) different stations. Shade and label 1 fractional unit of each.
5. Draw a picture of the water at 3 (or 4) different stations. Shade and label 1 fractional unit of each.
6. Extension: Draw a picture of the yarn at 3 (or 4) different stations.

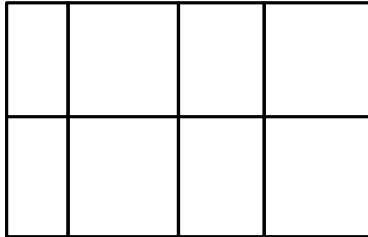
Name _____

Date _____

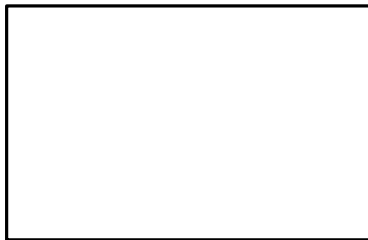
1. Fill in the chart. Each image is one whole.

| | Total Number of Equal Parts | Total Number of Equal Parts Shaded | Unit Form | Fraction Form |
|---|--------------------------------|--|-----------|---------------|
| a.  | | | | |
| b.  | | | | |
| c.  | | | | |
| d.  | | | | |
| e.  | | | | |
| f.  | | | | |

2. Andre's mom baked his 2 favorite cakes for his birthday party. The cakes were the exact same size. Andre cut his first cake into 8 pieces for him and his 7 friends. The picture below shows how he cut it. Did Andre cut the cake into eighths? Explain your answer.



3. Two of Andre's friends came late to his party. They decide they will all share the second cake. Show how Andre can slice the second cake so that he and his nine friends can each get an equal amount with none leftover. What fraction of the second cake will they each receive?



4. Andre thinks it's strange that $\frac{1}{10}$ of the cake would be less than $\frac{1}{8}$ of the cake since ten is bigger than eight. To explain to Andre, draw 2 identical rectangles to represent the cakes. Show 1 tenth shaded on one and 1 eighth shaded on the other. Label the unit fractions and explain to him which slice is bigger.

Name _____

Date _____

1. Complete the number sentence. Estimate to partition each strip equally, write the unit fraction inside each unit, and shade the answer.

Sample:

$$2 \text{ thirds} = \frac{2}{3}$$



- a. 3 fourths =

- b. 3 sevenths =

- c. 4 fifths =

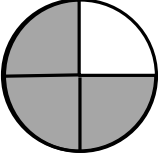
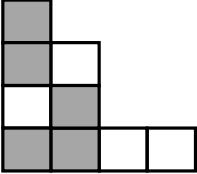
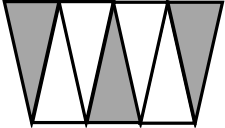
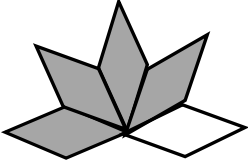
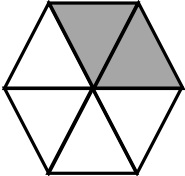
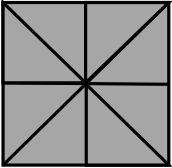
- d. 2 sixths =

2. Mr. Stevens bought 8 liters of soda for a party. His guests drank 1 liter.

- a. What fraction of the soda did his guests drink?

- b. What fraction of the soda was left?

3. Fill in the chart.

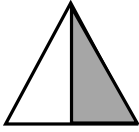
| | Total Number of Equal Parts | Total Number of Shaded Equal Parts | Unit Fraction | Fraction Shaded |
|--|-----------------------------|------------------------------------|---------------|-----------------|
| Sample:  | 4 | 3 | $\frac{1}{4}$ | $\frac{3}{4}$ |
| a.  | | | | |
| b.  | | | | |
| c.  | | | | |
| d.  | | | | |
| e.  | | | | |

Name _____

Date _____

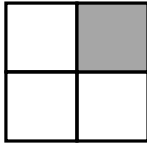
Whisper the fraction of the shape that is shaded. Then, match the shape to the amount that is not shaded.

1.



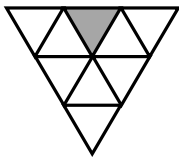
- 2 thirds

2.



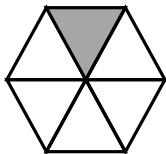
- 6 sevenths

3.



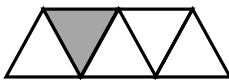
- 4 fifths

4.



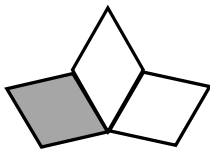
- 8 ninths

5.



- 1 half

6.



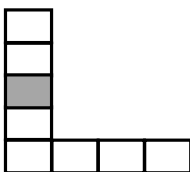
- 5 sixths

7.



- 7 eighths

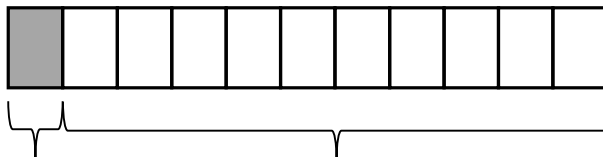
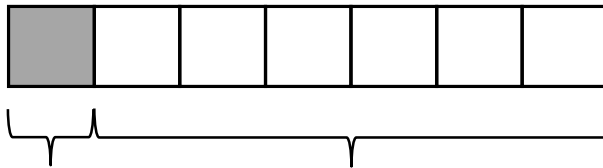
8.



- 3 fourths

9. a. How many eighths are in 1 whole? _____
- b. How many ninths are in 1 whole? _____
- c. How many twelfths are in 1 whole? _____

10. Each strip represents 1 whole. Write a fraction to label the shaded and unshaded parts.

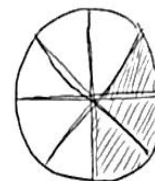
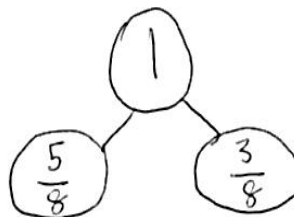


11. Avanti read $\frac{1}{6}$ of her book. What fraction of the book has she not read yet?

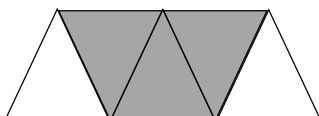
Name _____ Date _____

Show a number bond representing what is shaded and unshaded in each of the figures. Draw a different visual model that would be represented by the same number bond.

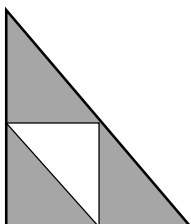
Sample:



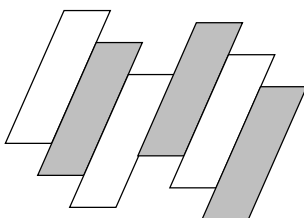
1.



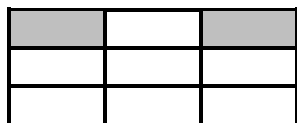
2.



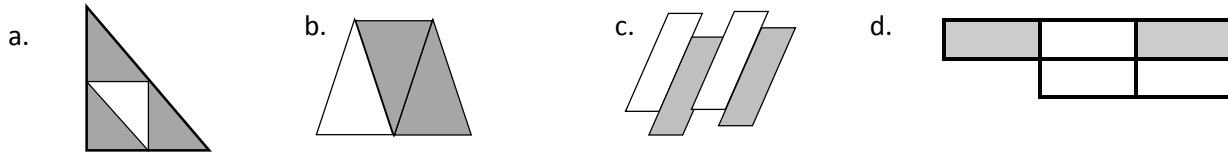
3.



4.



5. Draw a number bond with 2 parts showing the shaded and unshaded fractions of each figure. Decompose both parts of the number bond into unit fractions.



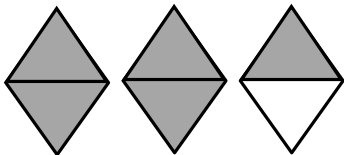
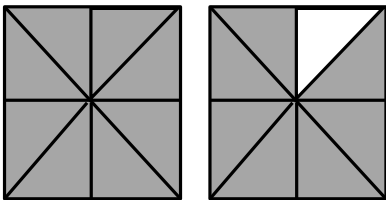
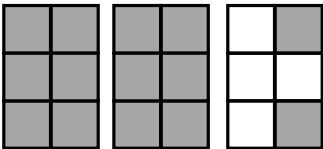
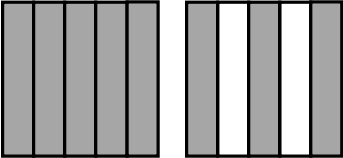
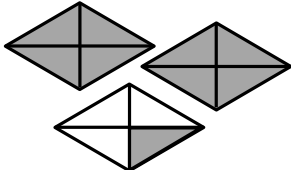
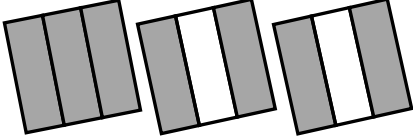
6. The chef put $\frac{1}{4}$ of the ground beef on the grill to make one hamburger and put the rest in the refrigerator. Draw a 2-part number bond showing the fraction of the ground beef on the grill and the fraction in the refrigerator. Draw a visual model of all the ground beef. Shade what is in the refrigerator.

- a. What fraction of the ground beef was in the refrigerator?
- b. How many more hamburgers can the chef make if he makes them all the same size as the first one?
- c. Show the refrigerated ground beef broken into unit fractions on your number bond above.

Name _____

Date _____

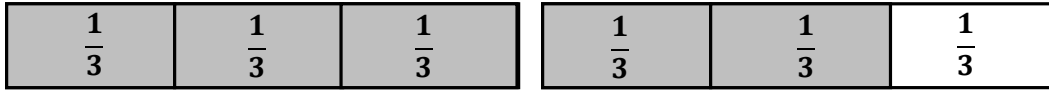
1. Each figure represents 1 whole. Fill in the chart.

| | Unit Fraction | Total Number of Units Shaded | Fraction Shaded |
|---|---------------|------------------------------|-----------------|
| a. Sample:  | $\frac{1}{2}$ | 5 | $\frac{5}{2}$ |
| b.  | | | |
| c.  | | | |
| d.  | | | |
| e.  | | | |
| f.  | | | |

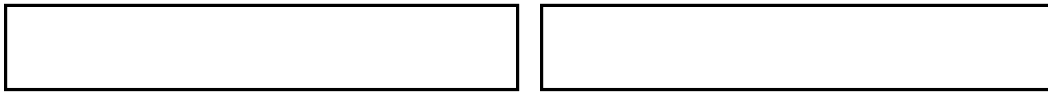
2. Estimate to draw and shade units on the fraction strips. Solve.

Sample:

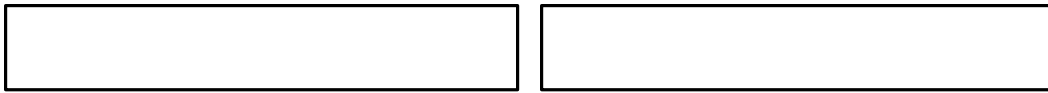
$$5 \text{ thirds} = \frac{5}{3}$$



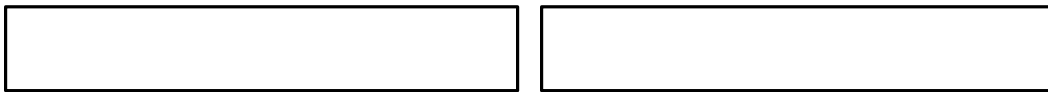
- a. 8 sixths =



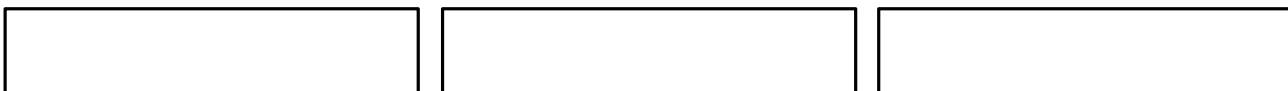
- b. 7 fourths =



- c. _____ = $\frac{6}{5}$



- d. _____ = $\frac{5}{2}$



3. Mrs. Jawlik baked 2 pans of brownies. Draw the pans and estimate to partition each pan into 8 equal pieces.

- a. Mrs. Jawlik's children gobbled up 10 pieces. Shade the amount that was eaten.

- b. Write a fraction to show how many pans of brownies her children ate.

Name _____

Date _____

1. Each fraction strip is 1 whole. All the fraction strips are equal in length. Color 1 fractional unit in each strip. Then, answer the questions below.

 $\frac{1}{2}$

 $\frac{1}{4}$

 $\frac{1}{8}$

 $\frac{1}{3}$

 $\frac{1}{6}$


2. Circle *less than* or *greater than*. Whisper the complete sentence.

a. $\frac{1}{2}$ is less than $\frac{1}{4}$
greater than

b. $\frac{1}{6}$ is less than $\frac{1}{2}$
greater than

c. $\frac{1}{3}$ is less than $\frac{1}{2}$
greater than

d. $\frac{1}{3}$ is less than $\frac{1}{6}$
greater than

e. $\frac{1}{8}$ is less than $\frac{1}{6}$
greater than

f. $\frac{1}{8}$ is less than $\frac{1}{4}$
greater than

g. $\frac{1}{2}$ is less than $\frac{1}{8}$
greater than

h. 9 eighths is less than 2 halves
greater than

3. Lily needs $\frac{1}{3}$ cup of oil and $\frac{1}{4}$ cup of water to make muffins. Will Lily use more oil or more water? Explain your answer using pictures, numbers, and words.

4. Use $>$, $<$, or $=$ to compare.

a. 1 third 1 fifth

b. 1 seventh 1 fourth

c. 1 sixth $\frac{1}{6}$

d. 1 tenth $\frac{1}{12}$

e. $\frac{1}{16}$ 1 eleventh

f. 1 whole 2 halves

Extension:

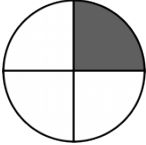
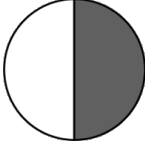
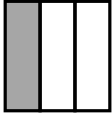

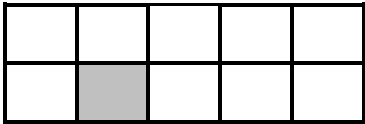
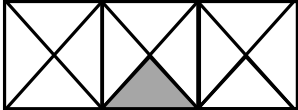
g. $\frac{1}{8}$ 1 eighth $\frac{1}{6}$ $\frac{1}{3}$ 2 halves 1 whole

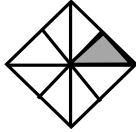

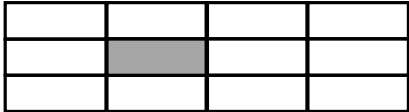
5. Your friend Eric says that $\frac{1}{6}$ is greater than $\frac{1}{5}$ because 6 is greater than 5. Is Eric correct? Use words and pictures to explain what happens to the size of a unit fraction when the number of parts gets larger.

Name _____

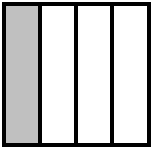
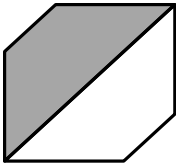
Date _____

Label the unit fraction. In each blank, draw and label the same whole with a shaded unit fraction that makes the sentence true. There is more than 1 correct way to make the sentence true.

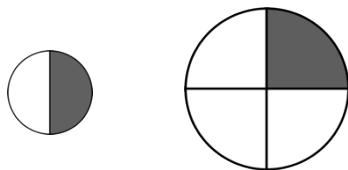
| | | |
|--|------------------------|---|
| <p>Sample:</p> $\frac{1}{4}$  | <p>is less than</p> | $\frac{1}{2}$  |
| <p>1.</p>  | <p>is greater than</p> | |
| <p>2.</p>  | <p>is less than</p> | |
| <p>3.</p>  | <p>is greater than</p> | |
| <p>4.</p>  | <p>is less than</p> | |

| | | |
|----|-----------------|---|
| 5. | is greater than |  |
| 6. | is less than |  |
| 7. | is greater than |  |

8. Fill in the blank with a fraction to make the statement true, and draw a matching model.

| | | | |
|---|--|--|--|
|  | |  | |
| $\frac{1}{4}$ is less than <input type="text"/> | | $\frac{1}{2}$ is greater than <input type="text"/> | |

9. Robert ate $\frac{1}{2}$ of a small pizza. Elizabeth ate $\frac{1}{4}$ of a large pizza. Elizabeth says, “My piece was larger than yours, so that means $\frac{1}{4} > \frac{1}{2}$.” Is Elizabeth correct? Explain your answer.

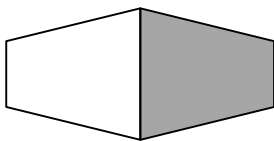


10. Manny and Daniel each ate $\frac{1}{2}$ of his candy, as shown below. Manny said he ate more candy than Daniel because his half is longer. Is he right? Explain your answer.

Manny’s Candy Bar



Daniel’s Candy Bar

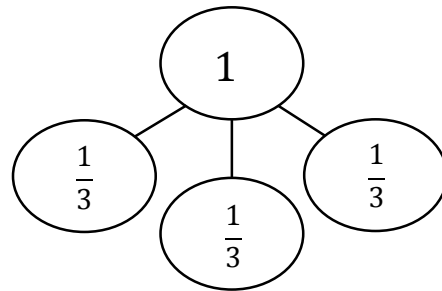
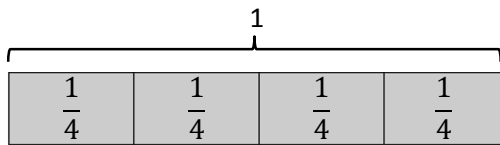
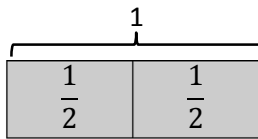
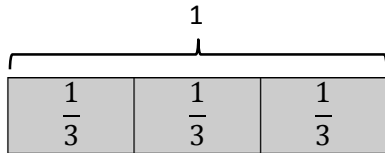


Name _____

Date _____

For each of the following:

- Draw a picture of the designated unit fraction copied to make at least two different wholes.
- Label the unit fractions.
- Label the whole as 1.
- Draw at least one number bond that matches a drawing.



1. Yellow strip

2. Brown strip

3. Orange square

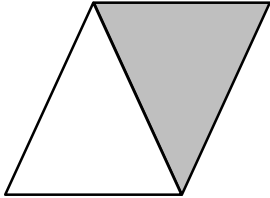
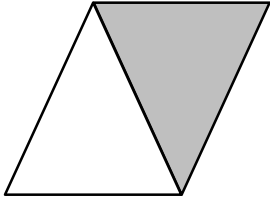
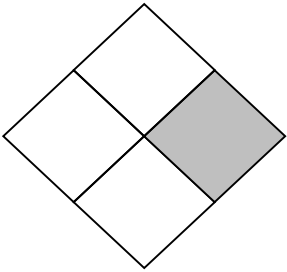
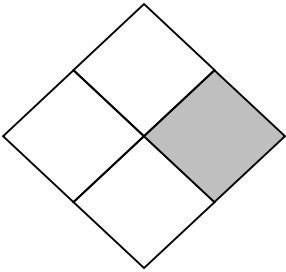




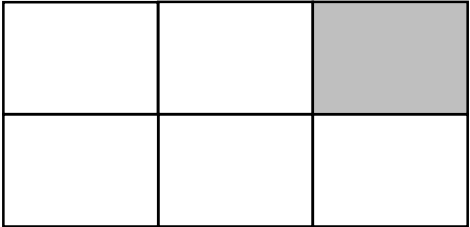
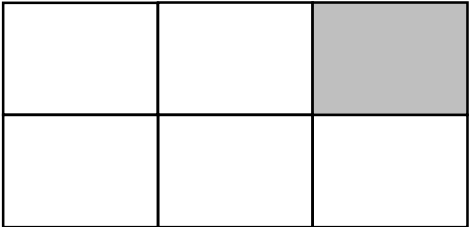
4. Yarn

5. Water

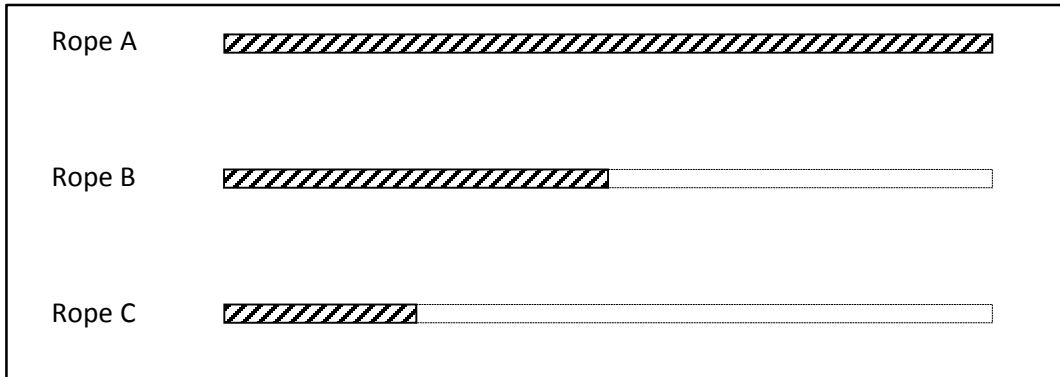
6. Clay

Name _____

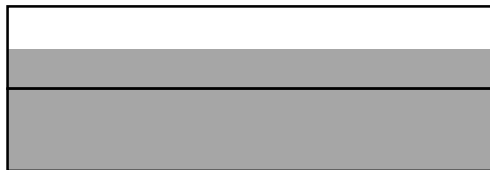
Date _____

| The shape represents 1 whole. Write a unit fraction to describe the shaded part. | The shaded part represents 1 whole. Divide 1 whole to show the same unit fraction you wrote in Part (a). |
|---|--|
| 1. a.  | b.  |
| 2. a.  | b.  |
| 3. a.  | b.  |
| 4. a.  | b.  |
| 5. a.  | b.  |

6. Use the diagram below to complete the following statements.



- Rope _____ is $\frac{1}{2}$ the length of Rope B.
 - Rope _____ is $\frac{1}{2}$ the length of Rope A.
 - Rope C is $\frac{1}{4}$ the length of Rope _____.
 - If Rope B measures 1 m long, then Rope A is _____ m long, and Rope C is _____ m long.
 - If Rope A measures 1 m long, Rope B is _____ m long, and Rope C is _____ m long.
7. Ms. Fan drew the figure below on the board. She asked the class to name the shaded fraction. Charlie answered $\frac{3}{4}$. Janice answered $\frac{3}{2}$. Jenna thinks they're both right. With whom do you agree? Explain your thinking.

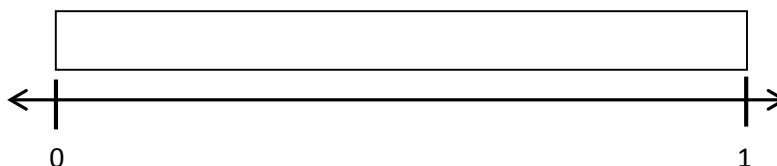
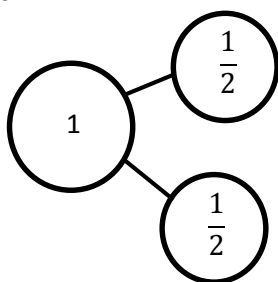


Name _____

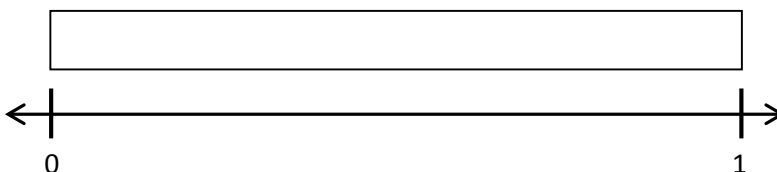
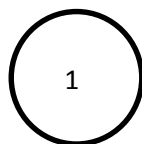
Date _____

1. Draw a number bond for each fractional unit. Partition the fraction strip to show the unit fractions of the number bond. Use the fraction strip to help you label the fractions on the number line. Be sure to label the fractions at 0 and 1.

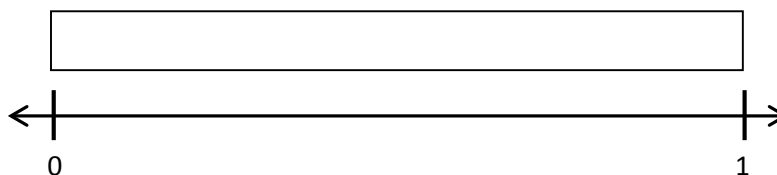
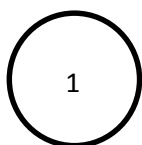
a. Halves



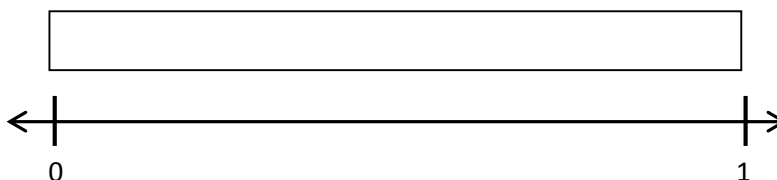
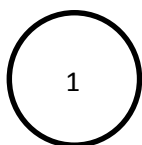
b. Thirds



c. Fourths



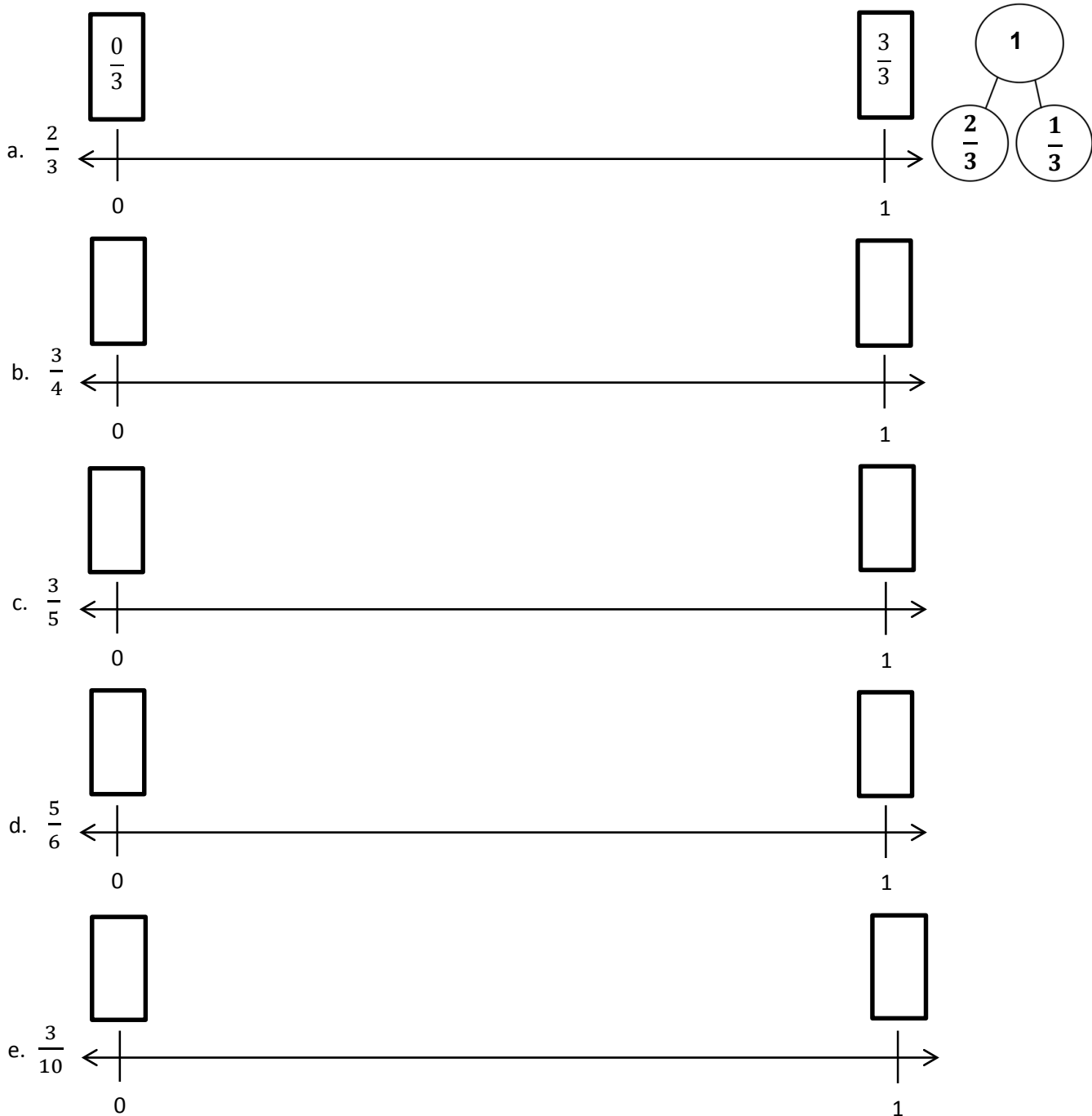
d. Fifths



2. Trevor needs to let his puppy outside every quarter (1 fourth) hour to potty train him. Draw and label a number line from 0 hours to 1 hour to show every 1 fourth hour. Include 0 fourths and 4 fourths hour. Label 0 hours and 1 hour, too.
3. A ribbon is 1 meter long. Mrs. Lee wants to sew a bead every $\frac{1}{5}$ meter. The first bead is at $\frac{1}{5}$ meter. The last bead is at 1 meter. Draw and label a number line from 0 meters to 1 meter to show where Mrs. Lee will sew beads. Label all the fractions, including 0 fifths and 5 fifths. Label 0 meters and 1 meter, too.

Name _____ Date _____

1. Estimate to label the given fractions on the number line. Be sure to label the fractions at 0 and 1. Write the fractions above the number line. Draw a number bond to match your number line.



2. Draw a number line. Use a fraction strip to locate 0 and 1. Fold the strip to make 8 equal parts. Use the strip to measure and label your number line with eighths.

Count up from 0 eighths to 8 eighths on your number line. Touch each number with your finger as you count.

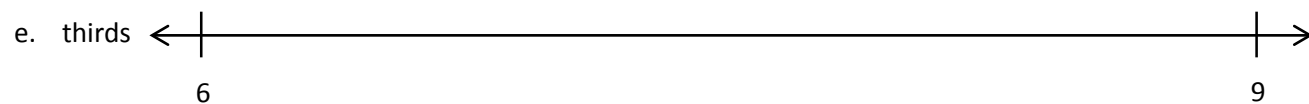
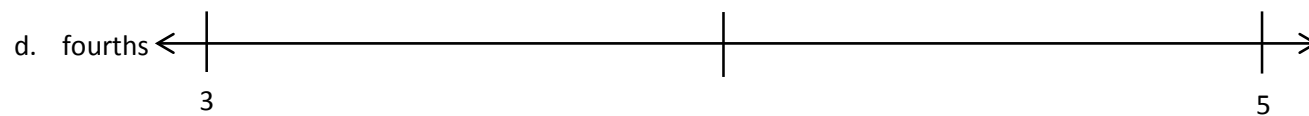
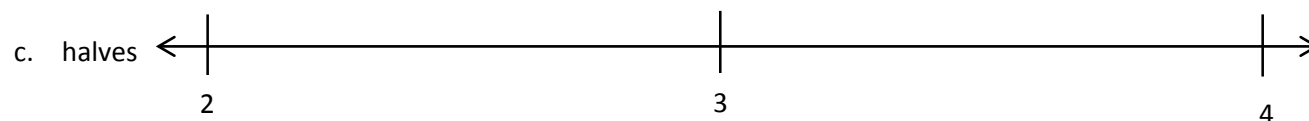
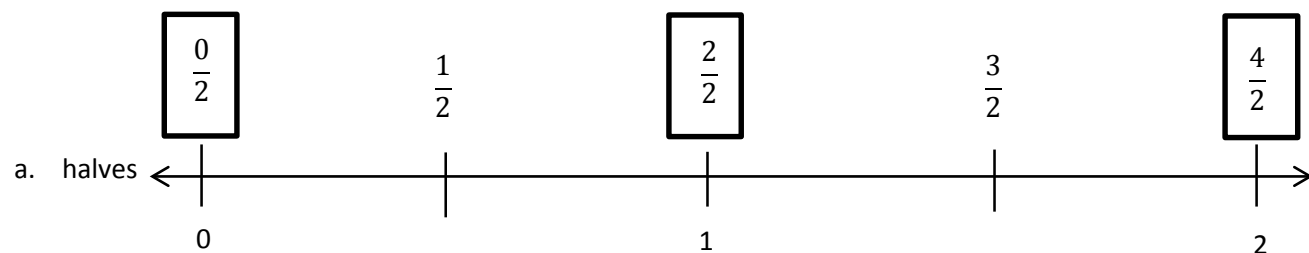
3. For his boat, James stretched out a rope with 5 equally spaced knots as shown.



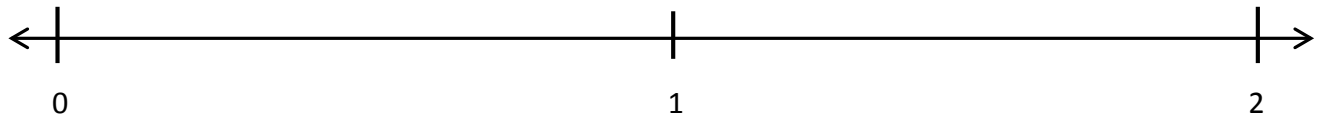
- a. Starting at the first knot and ending at the last knot, how many equal parts are formed by the 5 knots? Label each fraction at the knot.
- b. What fraction of the rope is labeled at the third knot?
- c. What if the rope had 6 equally spaced knots along the same length? What fraction of the rope would be measured by the first 2 knots?

Name _____ Date _____

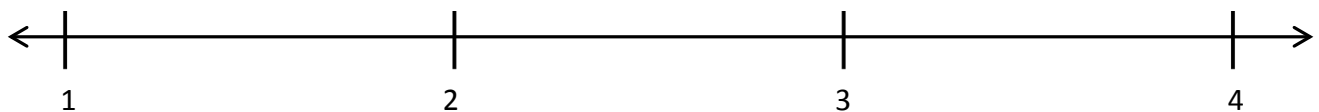
1. Estimate to equally partition and label the fractions on the number line. Label the wholes as fractions, and box them. The first one is done for you.



2. Partition each whole into fifths. Label each fraction. Count up as you go. Box the fractions that are located at the same points as whole numbers.



3. Partition each whole into thirds. Label each fraction. Count up as you go. Box the fractions that are located at the same points as whole numbers.



4. Draw a number line with endpoints 0 and 3. Label the wholes. Partition each whole into fourths. Label all the fractions from 0 to 3. Box the fractions that are located at the same points as whole numbers. Use a separate paper if you need more space.

Name _____

Date _____

1. Locate and label the following fractions on the number line.

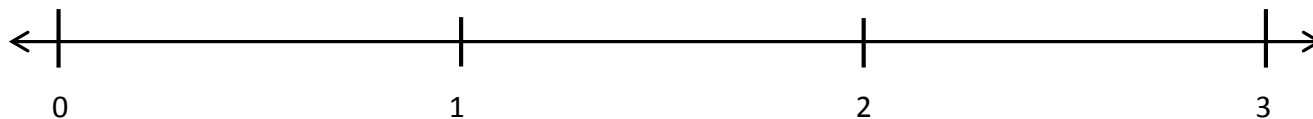
$$\frac{0}{6}$$

$$\frac{6}{6}$$

$$\frac{12}{6}$$

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

$$\frac{9}{6}$$



2. Locate and label the following fractions on the number line.

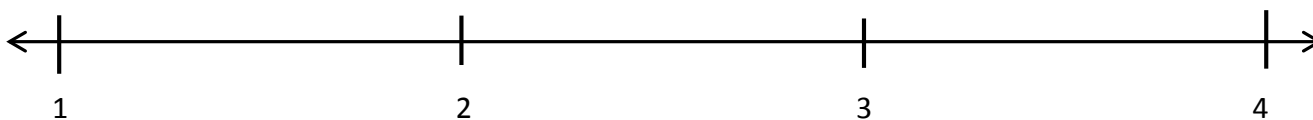
$$\frac{8}{4}$$

$$\frac{6}{4}$$

$$\frac{12}{4}$$

$$\frac{16}{4}$$

$$\frac{4}{4}$$



3. Locate and label the following fractions on the number line.

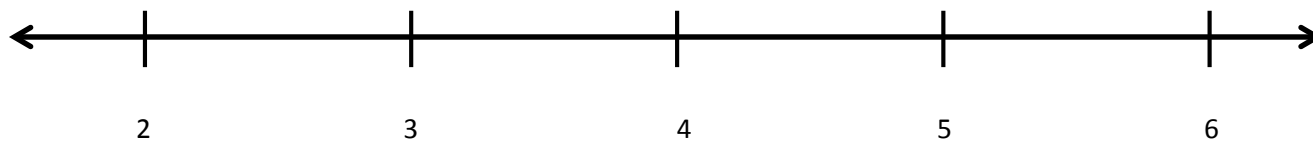
$$\frac{18}{3}$$

$$\frac{14}{3}$$

$$\frac{9}{3}$$

$$\frac{11}{3}$$

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



4. For a measurement project in math class, students measured the lengths of their pinky fingers. Alex's measured 2 inches long. Jerimiah's pinky finger was $\frac{7}{4}$ inches long. Whose finger is longer? Draw a number line to help prove your answer.
5. Marcy ran 4 kilometers after school. She stopped to tie her shoelace at $\frac{7}{5}$ kilometers. Then, she stopped to switch songs on her iPod at $\frac{12}{5}$ kilometers. Draw a number line showing Marcy's run. Include her starting and finishing points and the 2 places where she stopped.

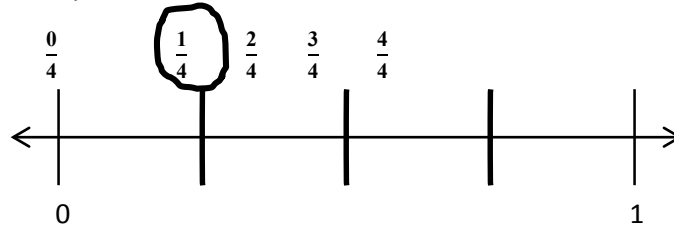
Name _____

Date _____

Place the two fractions on the number line. Circle the fraction with the distance closest to 0. Then, compare using $>$, $<$, or $=$. The first problem is done for you.

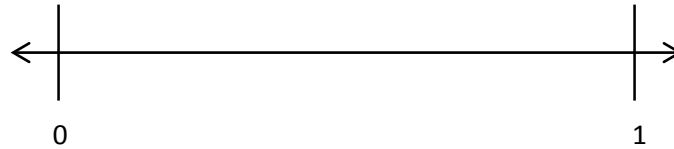
1.

$$\frac{1}{4} \bigcirc \frac{3}{4}$$



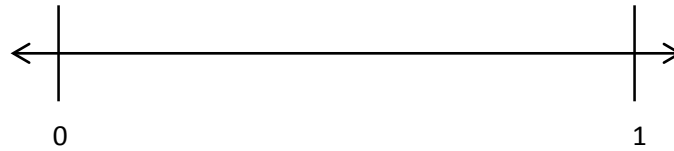
2.

$$\frac{2}{6} \bigcirc \frac{3}{6}$$



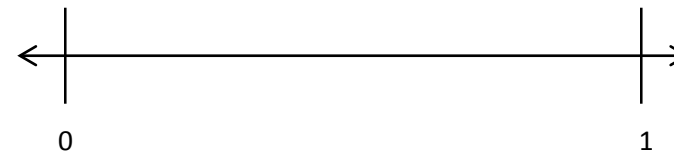
3.

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



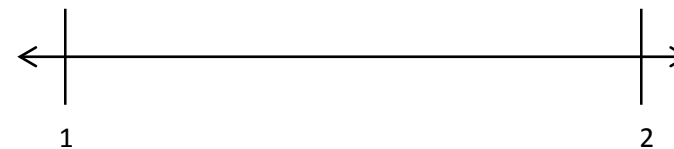
4.

$$\frac{2}{3} \bigcirc \frac{2}{6}$$



5.

$$\frac{11}{8} \bigcirc \frac{7}{4}$$



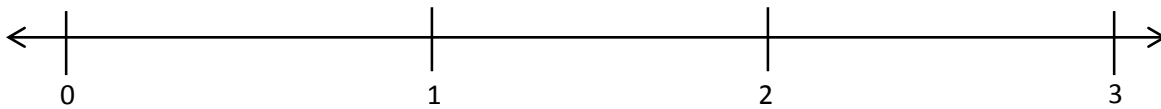
6. JoAnn and Lupe live straight down the street from their school. JoAnn walks $\frac{5}{6}$ miles and Lupe walks $\frac{7}{8}$ miles home from school every day. Draw a number line to model how far each girl walks. Who walks the least? Explain how you know using pictures, numbers, and words.
7. Cheryl cuts 2 pieces of thread. The blue thread is $\frac{5}{4}$ meters long. The red thread is $\frac{4}{5}$ meters long. Draw a number line to model the length of each piece of thread. Which piece of thread is shorter? Explain how you know using pictures, numbers, and words.
8. Brandon makes homemade spaghetti. He measures 3 noodles. One measures $\frac{7}{8}$ feet, the second is $\frac{7}{4}$ feet, and the third is $\frac{4}{2}$ feet long. Draw a number line to model the length of each piece of spaghetti. Write a number sentence using $<$, $>$, or $=$ to compare the pieces. Explain using pictures, numbers, and words.

Name _____

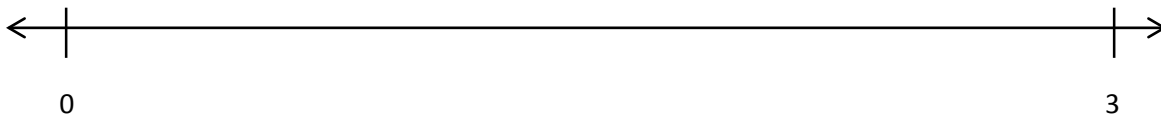
Date _____

1. Divide each number line into the given fractional unit. Then, place the fractions. Write each whole as a fraction.

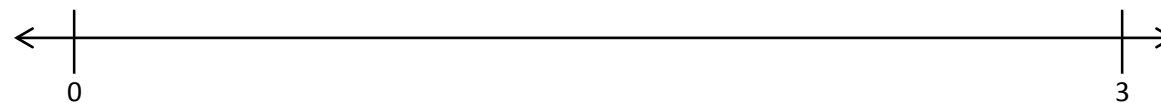
a. halves $\frac{3}{2}$ $\frac{5}{2}$ $\frac{4}{2}$



b. fourths $\frac{9}{4}$ $\frac{11}{4}$ $\frac{6}{4}$



c. eighths $\frac{24}{8}$ $\frac{19}{8}$ $\frac{16}{8}$



2. Use the number lines above to compare the following fractions using $>$, $<$, or $=$.

$$\frac{6}{4} \bigcirc \frac{9}{4}$$

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

$$\frac{19}{8} \bigcirc \frac{16}{8}$$

$$\frac{16}{8} \bigcirc \frac{3}{2}$$

$$\frac{9}{4} \bigcirc \frac{19}{8}$$

$$\frac{4}{2} \bigcirc \frac{16}{8}$$

$$\frac{6}{4} \bigcirc \frac{16}{8}$$

$$\frac{5}{2} \bigcirc \frac{9}{4}$$

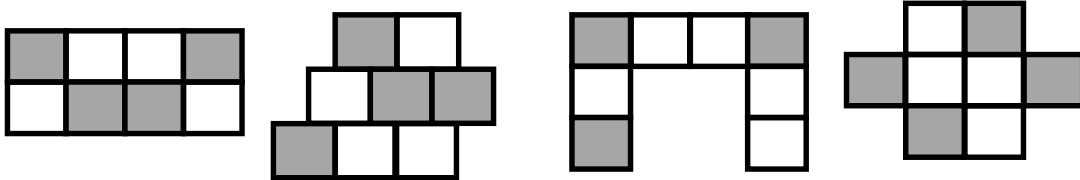
$$\frac{24}{8} \bigcirc \frac{11}{4}$$

3. Choose a *greater than* comparison you made in Problem 2. Use pictures, numbers, and words to explain how you made that comparison.
4. Choose a *less than* comparison you made in Problem 2. Use pictures, numbers, and words to explain a different way of thinking about the comparison than what you wrote in Problem 3.
5. Choose an *equal to* comparison you made in Problem 2. Use pictures, numbers, and words to explain two ways that you can prove your comparison is true.

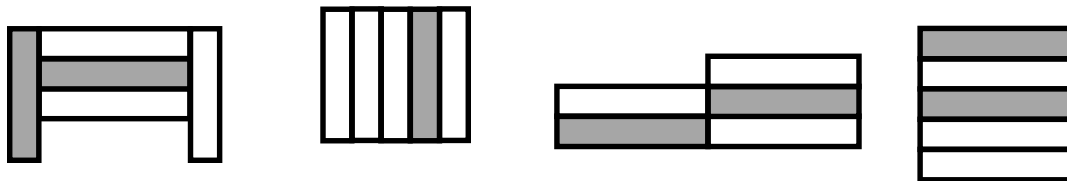
Name _____ Date _____

1. Label what fraction of each shape is shaded. Then, circle the fractions that are equal.

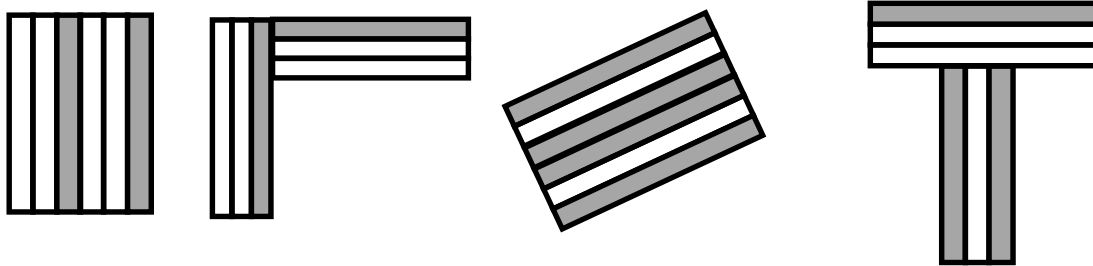
a.



b.

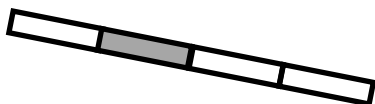


c.

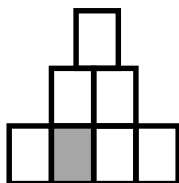


2. Label the shaded fraction. Draw 2 different representations of the same fractional amount.

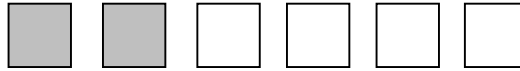
a.



b.

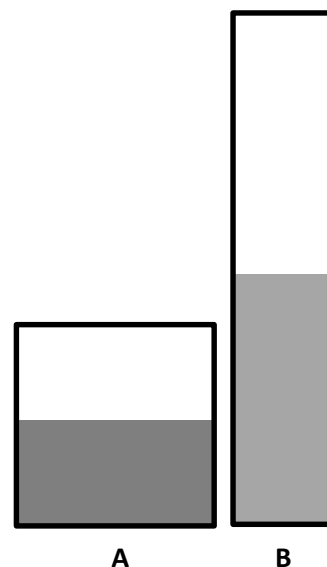


3. Ann has 6 small square pieces of paper. 2 squares are grey. Ann cuts the 2 grey squares in half with a diagonal line from one corner to the other.



- What shapes does she have now?
- How many of each shape does she have?
- Use all the shapes with no overlaps. Draw at least 2 different ways Ann's set of shapes might look. What fraction of the figure is grey?

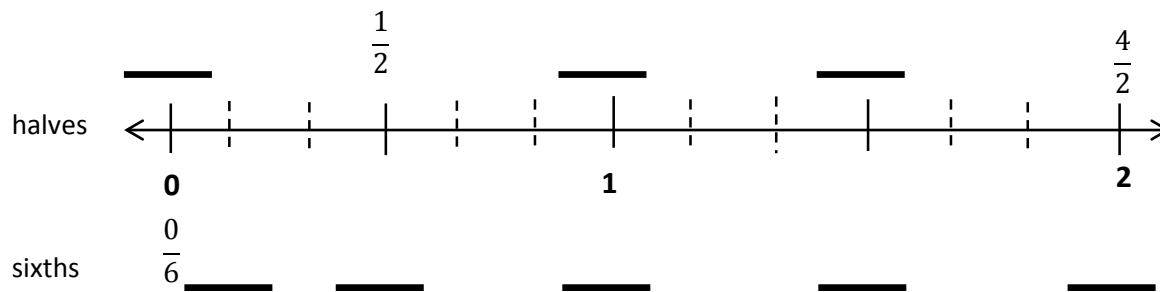
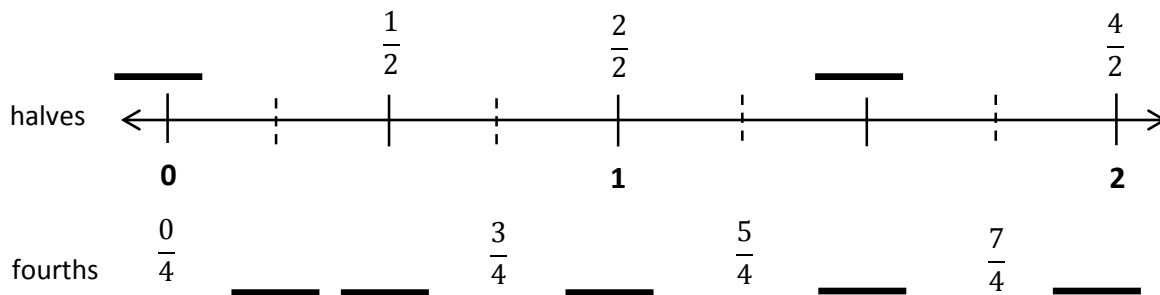
4. Laura has 2 different beakers that hold exactly 1 liter. She pours $\frac{1}{2}$ liter of blue liquid into Beaker A. She pours $\frac{1}{2}$ liter of orange liquid into Beaker B. Susan says the amounts are not equal. Cristina says they are. Explain who you think is correct and why.



Name _____

Date _____

1. Use the fractional units on the left to count up on the number line. Label the missing fractions on the blanks.



2. Use the number lines above to:
- Color fractions equal to 1 half blue.
 - Color fractions equal to 1 yellow.
 - Color fractions equal to 3 halves green.
 - Color fractions equal to 2 red.
3. Use the number lines above to make the number sentences true.

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

$$\frac{6}{6} = \frac{2}{\quad} = \frac{\quad}{\quad}$$

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

4. Jack and Jill use rain gauges the same size and shape to measure rain on the top of a hill. Jack uses a rain gauge marked in fourths of an inch. Jill's gauge measures rain in eighths of an inch. On Thursday, Jack's gauge measured $\frac{2}{4}$ inches of rain. They both had the same amount of water, so what was the reading on Jill's gauge Thursday? Draw a number line to help explain your thinking.
5. Jack and Jill's baby brother Rosco also had a gauge the same size and shape on the same hill. He told Jack and Jill that there had been $\frac{1}{2}$ inch of rain on Thursday. Is he right? Why or why not? Use words and a number line to explain your answer.

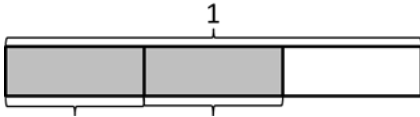
Start of Homework section for Mission 5

Name _____

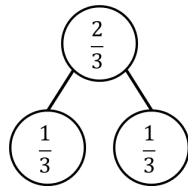
Date _____

1. Draw a number bond, and write the number sentence to match each tape diagram. The first one is done for you.

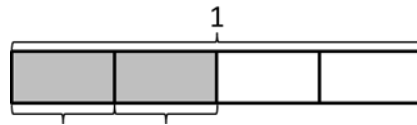
a.



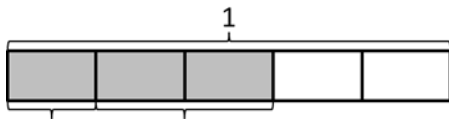
$$\frac{2}{3} = \frac{1}{3} + \frac{1}{3}$$



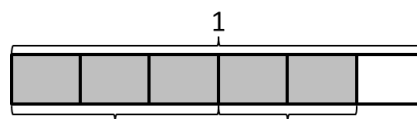
b.



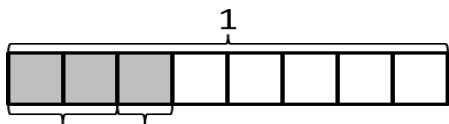
c.



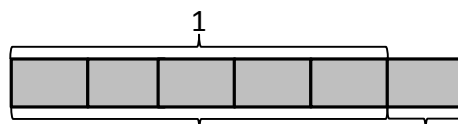
d.



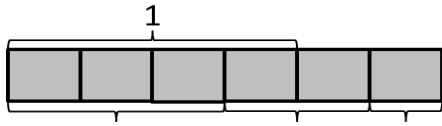
e.



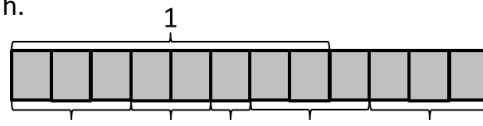
f.



g.



h.



2. Draw and label tape diagrams to match each number sentence.

a. $\frac{5}{8} = \frac{2}{8} + \frac{2}{8} + \frac{1}{8}$

b. $\frac{12}{8} = \frac{6}{8} + \frac{2}{8} + \frac{4}{8}$

c. $\frac{11}{10} = \frac{5}{10} + \frac{5}{10} + \frac{1}{10}$

d. $\frac{13}{12} = \frac{7}{12} + \frac{1}{12} + \frac{5}{12}$

e. $1\frac{1}{4} = 1 + \frac{1}{4}$

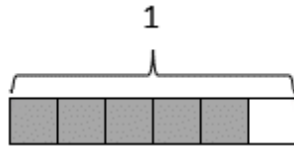
f. $1\frac{2}{7} = 1 + \frac{2}{7}$

Name _____

Date _____

1. Step 1: Draw and shade a tape diagram of the given fraction.
 Step 2: Record the decomposition as a sum of unit fractions.
 Step 3: Record the decomposition of the fraction two more ways.
 (The first one has been done for you.)

a. $\frac{5}{6}$



$$\frac{5}{6} = \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6}$$

$$\frac{5}{6} = \frac{2}{6} + \frac{2}{6} + \frac{1}{6}$$

$$\frac{5}{6} = \frac{1}{6} + \frac{4}{6}$$

b. $\frac{6}{8}$

c. $\frac{7}{10}$

2. Step 1: Draw and shade a tape diagram of the given fraction.

Step 2: Record the decomposition of the fraction in three different ways using number sentences.

a. $\frac{10}{12}$

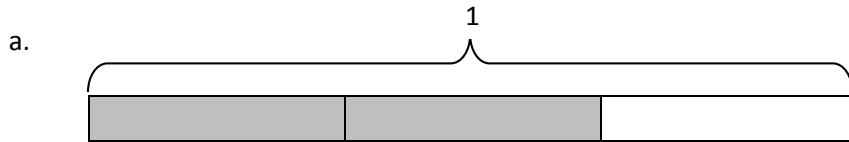
b. $\frac{5}{4}$

c. $\frac{6}{5}$

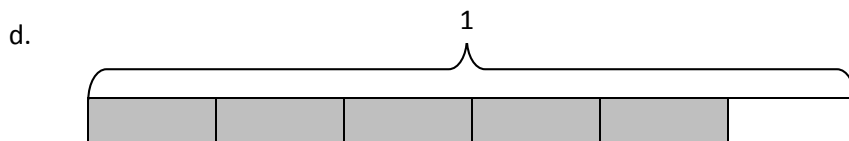
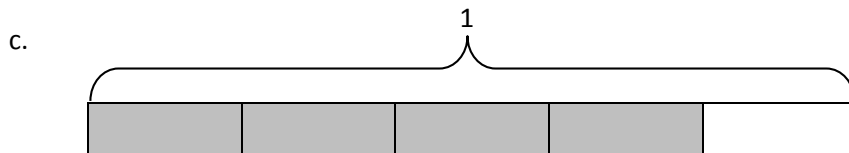
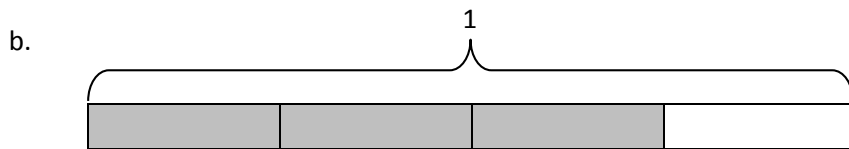
d. $1\frac{1}{4}$

Name _____ Date _____

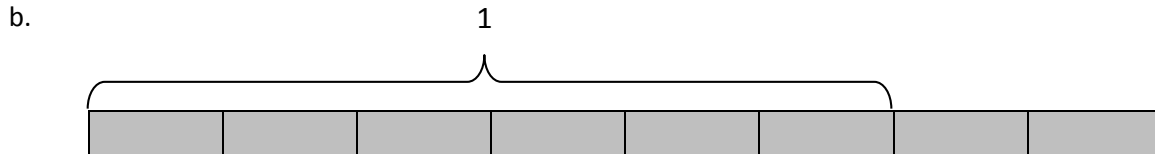
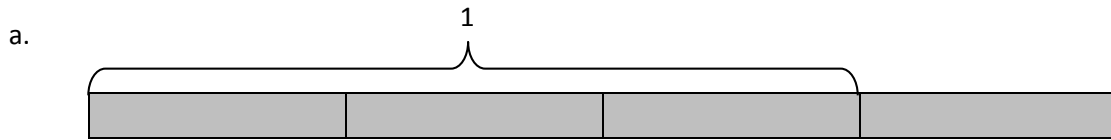
1. Decompose each fraction modeled by a tape diagram as a sum of unit fractions. Write the equivalent multiplication sentence. The first one has been done for you.



$$\frac{2}{3} = \frac{1}{3} + \frac{1}{3} \quad \frac{2}{3} = 2 \times \frac{1}{3}$$



2. Write the following fractions greater than 1 as the sum of two products.



3. Draw a tape diagram, and record the given fraction's decomposition into unit fractions as a multiplication sentence.

a. $\frac{3}{5}$

b. $\frac{3}{8}$

c. $\frac{5}{9}$

d. $\frac{8}{5}$

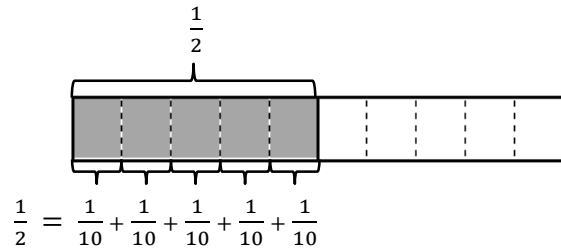
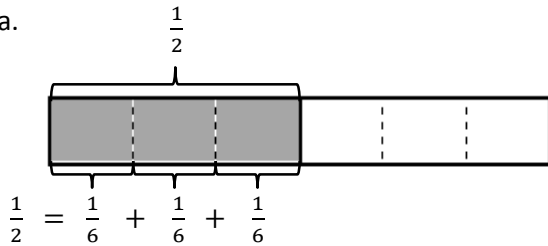
e. $\frac{12}{4}$

Name _____

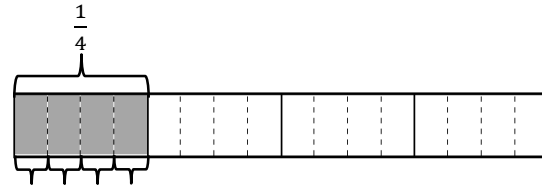
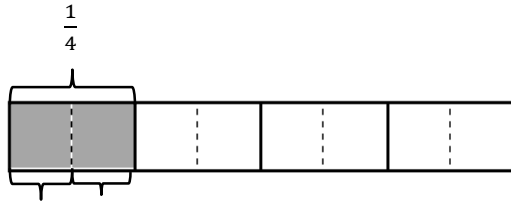
Date _____

1. The total length of each tape diagram represents 1. Decompose the shaded unit fractions as the sum of smaller unit fractions in at least two different ways. The first one has been done for you.

a.



b.

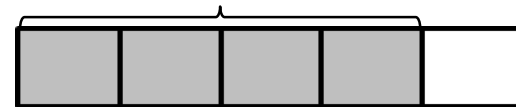
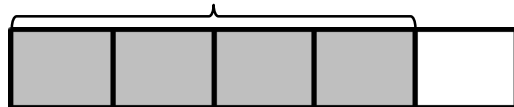


2. The total length of each tape diagram represents 1. Decompose the shaded fractions as the sum of smaller unit fractions in at least two different ways.

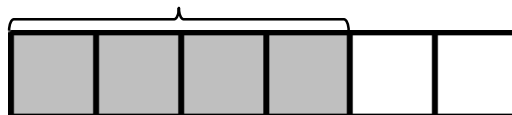
a.



b.

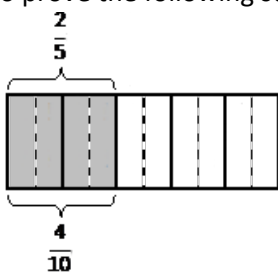


C.



3. Draw tape diagrams to prove the following statements. The first one has been done for you.

a. $\frac{2}{5} = \frac{4}{10}$



b. $\frac{3}{6} = \frac{6}{12}$

c. $\frac{2}{6} = \frac{6}{18}$

d. $\frac{3}{4} = \frac{12}{16}$

4. Show that $\frac{1}{2}$ is equivalent to $\frac{6}{12}$ using a tape diagram and a number sentence.

5. Show that $\frac{2}{3}$ is equivalent to $\frac{8}{12}$ using a tape diagram and a number sentence.

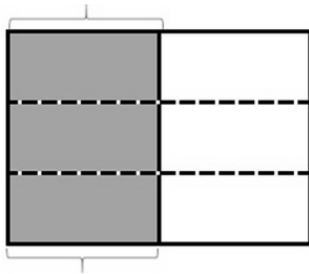
6. Show that $\frac{4}{5}$ is equivalent to $\frac{12}{15}$ using a tape diagram and a number sentence.

Name _____

Date _____

1. Draw horizontal lines to decompose each rectangle into the number of rows as indicated. Use the model to give the shaded area as both a sum of unit fractions and as a multiplication sentence.

- a. 3 rows

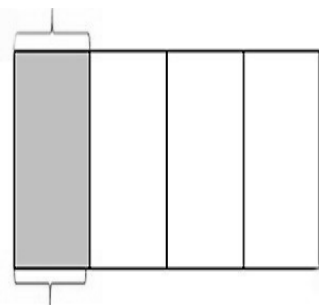


$$\frac{1}{2} = \frac{3}{6}$$

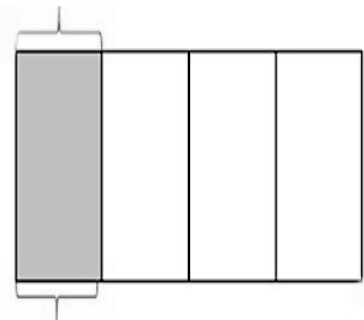
$$\frac{1}{2} = \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \frac{3}{6}$$

$$\frac{1}{2} = 3 \times \frac{1}{6} = \frac{3}{6}$$

- b. 2 rows



- c. 4 rows



2. Draw area models to show the decompositions represented by the number sentences below. Represent the decomposition as a sum of unit fractions and as a multiplication sentence.

a. $\frac{1}{3} = \frac{2}{6}$

b. $\frac{1}{3} = \frac{3}{9}$

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

d. $\frac{1}{3} = \frac{5}{15}$

e. $\frac{1}{5} = \frac{2}{10}$

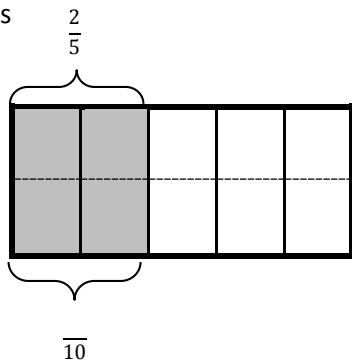
f. $\frac{1}{5} = \frac{3}{15}$

3. Explain why $\frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12}$ is the same as $\frac{1}{3}$.

Name _____ Date _____

1. Each rectangle represents 1. Draw horizontal lines to decompose each rectangle into the fractional units as indicated. Use the model to give the shaded area as a sum and as a product of unit fractions. Use parentheses to show the relationship between the number sentences. The first one has been partially done for you.

a. Tenths



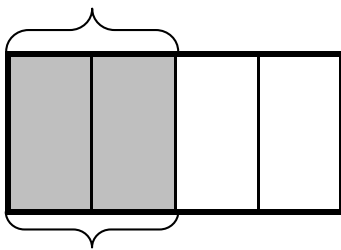
$$\frac{2}{5} = \frac{4}{10}$$

$$\frac{2}{5} + \frac{2}{5} = \left(\frac{1}{10} + \frac{1}{10}\right) + \left(\frac{1}{10} + \frac{1}{10}\right) = \frac{4}{10}$$

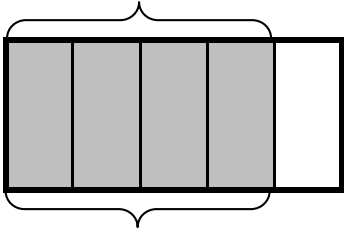
$$\left(\frac{1}{10} + \frac{1}{10}\right) + \left(\frac{1}{10} + \frac{1}{10}\right) = (2 \times \frac{1}{10}) + (2 \times \frac{1}{10}) = \frac{4}{10}$$

$$\frac{2}{5} = 4 \times \frac{1}{10} = \frac{4}{10}$$

b. Eighths



c. Fifteenths



2. Draw area models to show the decompositions represented by the number sentences below. Express each as a sum and product of unit fractions. Use parentheses to show the relationship between the number sentences.

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

b. $\frac{4}{5} = \frac{8}{10}$

3. Step 1: Draw an area model for a fraction with units of thirds, fourths, or fifths.

Step 2: Shade in more than one fractional unit.

Step 3: Partition the area model again to find an equivalent fraction.

Step 4: Write the equivalent fractions as a number sentence. (If you have written a number sentence like this one already in this Homework, start over.)

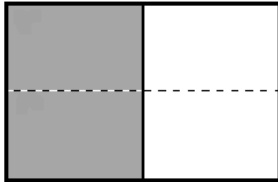
Name _____

Date _____

Each rectangle represents 1.

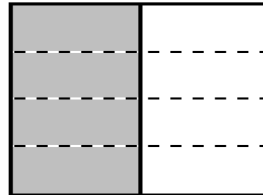
1. The shaded unit fractions have been decomposed into smaller units. Express the equivalent fractions in a number sentence using multiplication. The first one has been done for you.

a.

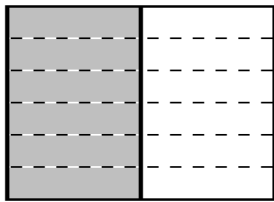


$$\frac{1}{2} = \frac{1 \times 2}{2 \times 2} = \frac{2}{4}$$

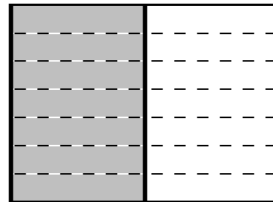
b.



c.

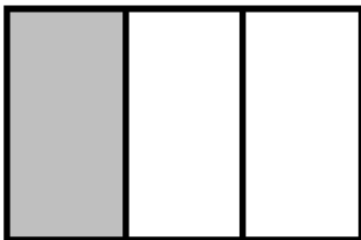


d.

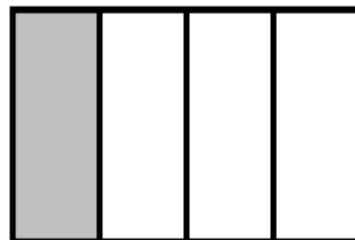


2. Decompose the shaded fractions into smaller units using the area models. Express the equivalent fractions in a number sentence using multiplication.

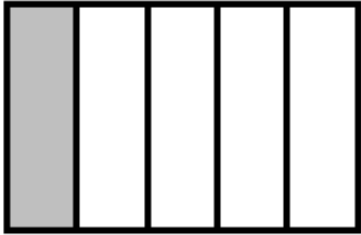
a.



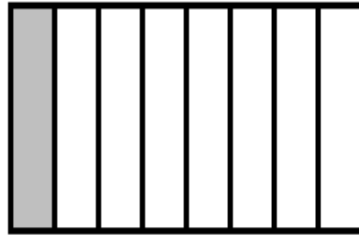
b.



c.



d.



3. Draw three different area models to represent 1 fourth by shading.
Decompose the shaded fraction into (a) eighths, (b) twelfths, and (c) sixteenths.
Use multiplication to show how each fraction is equivalent to 1 fourth.

a.

b.

c.

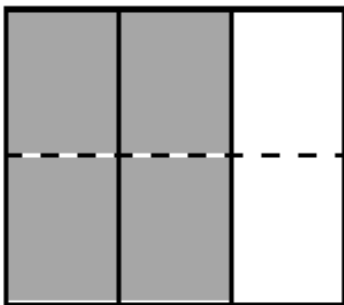
Name _____

Date _____

Each rectangle represents 1.

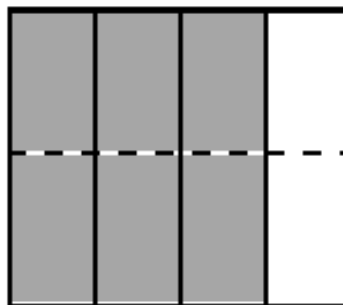
1. The shaded fractions have been decomposed into smaller units. Express the equivalent fractions in a number sentence using multiplication. The first one has been done for you.

a.

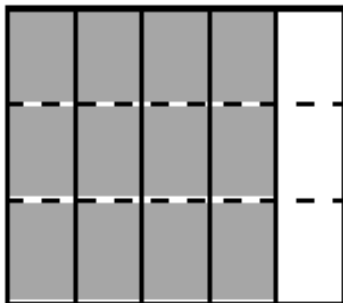


$$\frac{2}{3} = \frac{2 \times 2}{3 \times 2} = \frac{4}{6}$$

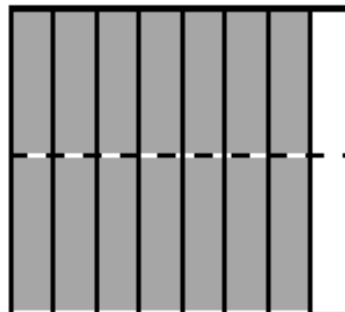
b.



c.



d.

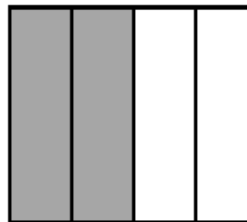


2. Decompose both shaded fractions into twelfths. Express the equivalent fractions in a number sentence using multiplication.

a.



b.



3. Draw area models to prove that the following number sentences are true.

a. $\frac{1}{3} = \frac{2}{6}$

b. $\frac{2}{5} = \frac{4}{10}$

c. $\frac{5}{7} = \frac{10}{14}$

d. $\frac{3}{6} = \frac{9}{18}$

4. Use multiplication to create an equivalent fraction for each fraction below.

a. $\frac{2}{3}$

b. $\frac{5}{6}$

c. $\frac{6}{5}$

d. $\frac{10}{8}$

5. Determine which of the following are true number sentences. Correct those that are false by changing the right-hand side of the number sentence.

a. $\frac{2}{3} = \frac{4}{9}$

b. $\frac{5}{6} = \frac{10}{12}$

c. $\frac{3}{5} = \frac{6}{15}$

d. $\frac{7}{4} = \frac{21}{12}$

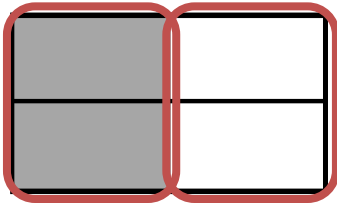
Name _____

Date _____

Each rectangle represents 1.

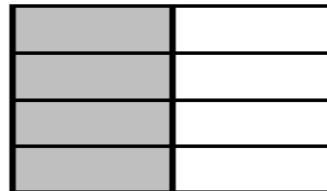
- Compose the shaded fractions into larger fractional units. Express the equivalent fractions in a number sentence using division. The first one has been done for you.

a.

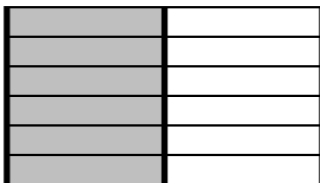


$$\frac{2}{4} = \frac{2 \div 2}{4 \div 2} = \frac{1}{2}$$

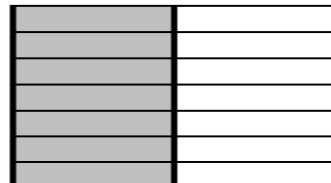
b.



c.

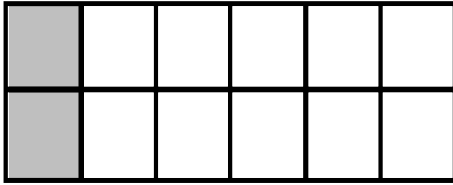


d.

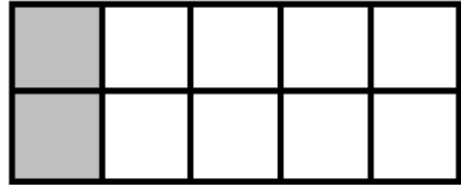


2. Compose the shaded fractions into larger fractional units. Express the equivalent fractions in a number sentence using division.

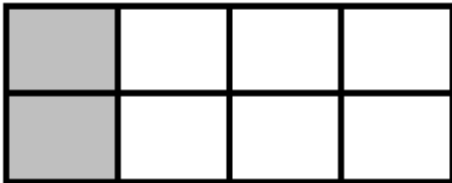
a.



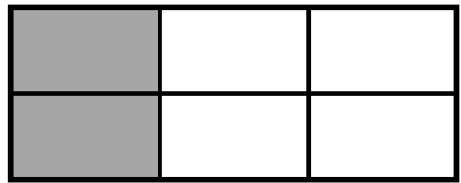
b.



c.



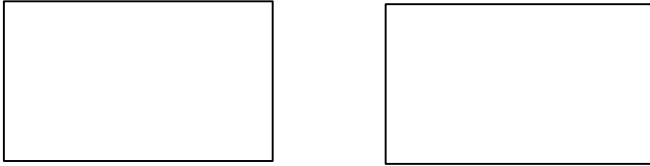
d.



- e. What happened to the size of the fractional units when you composed the fraction?

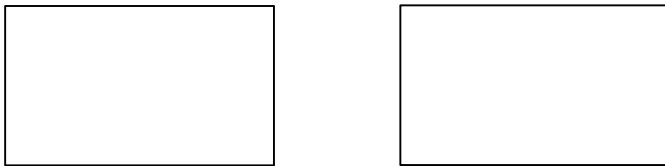
- f. What happened to the total number of units in the whole when you composed the fraction?

3. a. In the first area model, show 4 eighths. In the second area model, show 6 twelfths. Show how both fractions can be composed, or renamed, as the same unit fraction.



- b. Express the equivalent fractions in a number sentence using division.

4. a. In the first area model, show 4 eighths. In the second area model, show 8 sixteenths. Show how both fractions can be composed, or renamed, as the same unit fraction.



- b. Express the equivalent fractions in a number sentence using division.

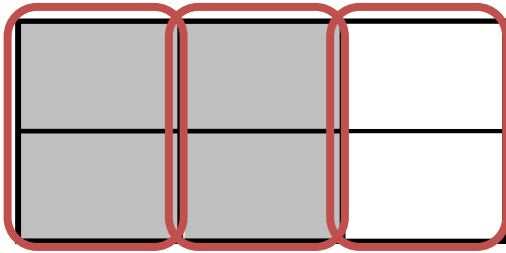
Name _____

Date _____

Each rectangle represents 1.

1. Compose the shaded fraction into larger fractional units. Express the equivalent fractions in a number sentence using division. The first one has been done for you.

a.

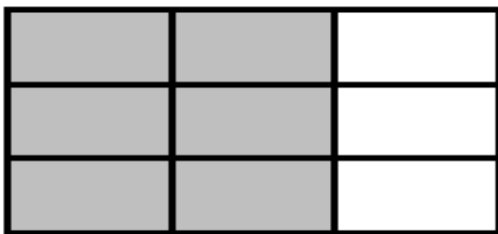


$$\frac{4}{6} = \frac{4 \div 2}{6 \div 2} = \frac{2}{3}$$

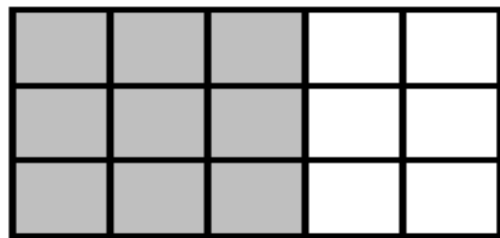
b.



c.

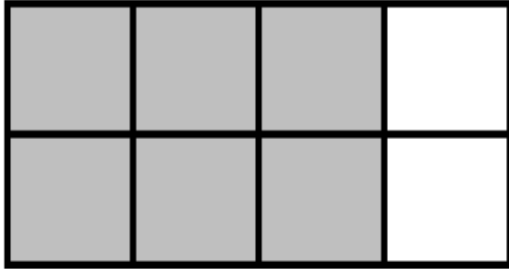


d.

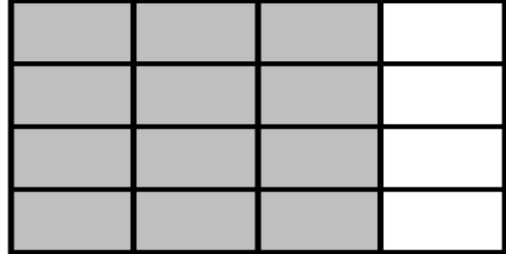


2. Compose the shaded fractions into larger fractional units. Express the equivalent fractions in a number sentence using division.

a.



b.



3. Draw an area model to represent each number sentence below.

a. $\frac{6}{15} = \frac{6 \div 3}{15 \div 3} = \frac{2}{5}$

b. $\frac{6}{18} = \frac{6 \div 3}{18 \div 3} = \frac{2}{6}$

4. Use division to rename each fraction given below. Draw a model if that helps you. See if you can use the largest common factor.

a. $\frac{6}{12}$

b. $\frac{4}{12}$

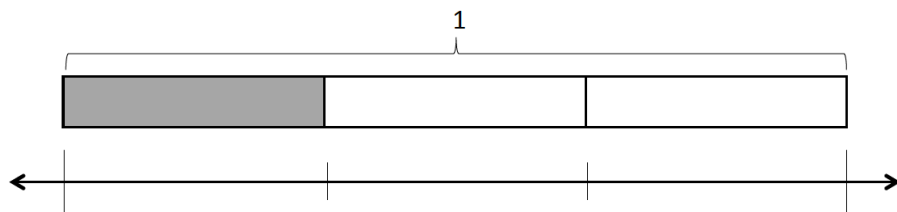
c. $\frac{8}{12}$

d. $\frac{12}{18}$

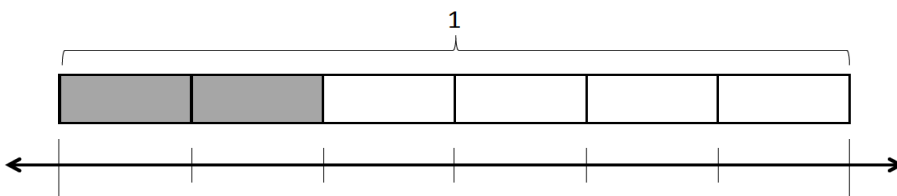
Name _____ Date _____

1. Label each number line with the fractions shown on the tape diagram. Circle the fraction that labels the point on the number line that also names the shaded part of the tape diagram.

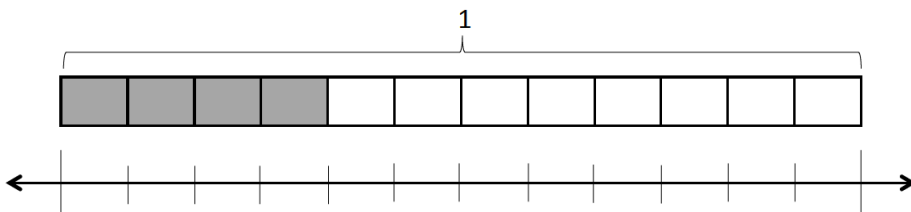
a.



b.



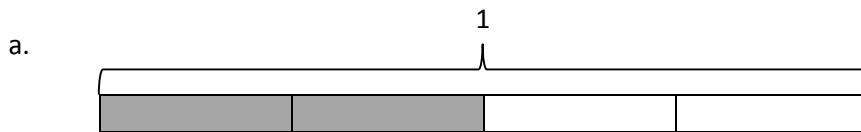
c.



2. Write number sentences using multiplication to show:
- a. The fraction represented in 1(a) is equivalent to the fraction represented in 1(b).

- b. The fraction represented in 1(a) is equivalent to the fraction represented in 1(c).

3. Use each shaded tape diagram below as a ruler to draw a number line. Mark each number line with the fractional units shown on the tape diagram, and circle the fraction that labels the point on the number line that also names the shaded part of the tape diagram.



4. Write a number sentence using division to show the fraction represented in 3(a) is equivalent to the fraction represented in 3(b).
5. a. Partition a number line from 0 to 1 into fourths. Decompose $\frac{3}{4}$ into 6 equal lengths.
- b. Write a number sentence using multiplication to show what fraction represented on the number line is equivalent to $\frac{3}{4}$.
- c. Write a number sentence using division to show what fraction represented on the number line is equivalent to $\frac{3}{4}$.

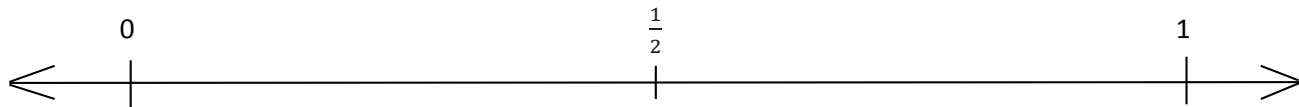
Name _____ Date _____

1. a. Plot the following points on the number line without measuring.

i. $\frac{2}{3}$

ii. $\frac{1}{6}$

iii. $\frac{4}{10}$



b. Use the number line in Part (a) to compare the fractions by writing $>$, $<$, or $=$ on the lines.

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

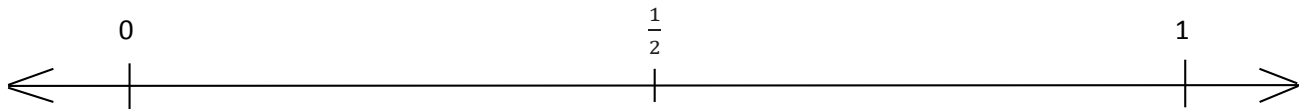
ii. $\frac{4}{10}$ _____ $\frac{1}{6}$

2. a. Plot the following points on the number line without measuring.

i. $\frac{5}{12}$

ii. $\frac{3}{4}$

iii. $\frac{2}{6}$



b. Select two fractions from Part (a), and use the given number line to compare them by writing $>$, $<$, or $=$.

c. Explain how you plotted the points in Part (a).

3. Compare the fractions given below by writing $>$ or $<$ on the lines.

Give a brief explanation for each answer referring to the benchmark of 0 , $\frac{1}{2}$, and 1 .

a. $\frac{1}{2}$ _____ $\frac{1}{4}$

b. $\frac{6}{8}$ _____ $\frac{1}{2}$

c. $\frac{3}{4}$ _____ $\frac{3}{5}$

d. $\frac{4}{6}$ _____ $\frac{9}{12}$

e. $\frac{2}{3}$ _____ $\frac{1}{4}$

f. $\frac{4}{5}$ _____ $\frac{8}{12}$

g. $\frac{1}{3}$ _____ $\frac{3}{6}$

h. $\frac{7}{8}$ _____ $\frac{3}{5}$

i. $\frac{51}{100}$ _____ $\frac{5}{10}$

j. $\frac{8}{14}$ _____ $\frac{49}{100}$

Name _____

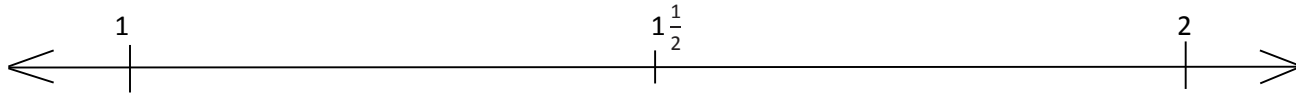
Date _____

1. Place the following fractions on the number line given.

a. $\frac{3}{2}$

b. $\frac{9}{5}$

c. $\frac{14}{10}$

2. Use the number line in Problem 1 to compare the fractions by writing $>$, $<$, or $=$ on the lines.

a. $1\frac{1}{6}$ _____ $1\frac{4}{12}$

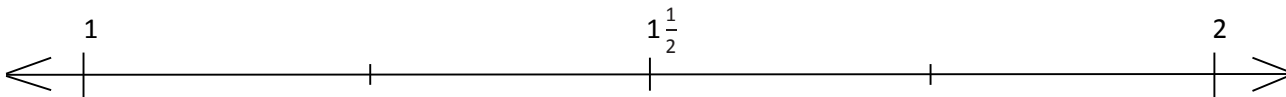
b. $1\frac{1}{2}$ _____ $1\frac{4}{5}$

3. Place the following fractions on the number line given.

a. $\frac{12}{9}$

b. $\frac{6}{5}$

c. $\frac{18}{15}$

4. Use the number line in Problem 3 to explain the reasoning you used when determining whether $\frac{12}{9}$ or $\frac{18}{15}$ was greater.

5. Compare the fractions given below by writing $>$ or $<$ on the lines. Give a brief explanation for each answer referring to benchmarks.

a. $\frac{2}{5}$ _____ $\frac{6}{8}$

b. $\frac{6}{10}$ _____ $\frac{5}{6}$

c. $\frac{6}{4}$ _____ $\frac{7}{8}$

d. $\frac{1}{4}$ _____ $\frac{8}{12}$

e. $\frac{14}{12}$ _____ $\frac{11}{6}$

f. $\frac{8}{9}$ _____ $\frac{3}{2}$

g. $\frac{7}{8}$ _____ $\frac{11}{10}$

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

i. $\frac{3}{8}$ _____ $\frac{3}{2}$

j. $\frac{9}{6}$ _____ $\frac{16}{12}$

Name _____ Date _____

1. Compare the pairs of fractions by reasoning about the size of the units. Use $>$, $<$, or $=$.

a. 1 third _____ 1 sixth

b. 2 halves _____ 2 thirds

c. 2 fourths _____ 2 sixths

d. 5 eighths _____ 5 tenths

2. Compare by reasoning about the following pairs of fractions with the same or related numerators. Use $>$, $<$, or $=$. Explain your thinking using words, pictures, or numbers. Problem 2(b) has been done for you.

a. $\frac{3}{6}$ _____ $\frac{3}{7}$

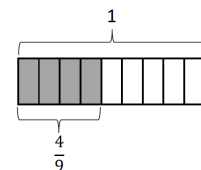
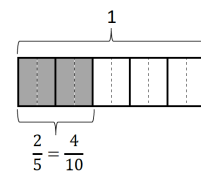
b. $\frac{2}{5} < \frac{4}{9}$

because $\frac{2}{5} = \frac{4}{10}$

4 tenths is less

than 4 ninths because

tenths are smaller than ninths.



c. $\frac{3}{11}$ _____ $\frac{3}{13}$

d. $\frac{5}{7}$ _____ $\frac{10}{13}$

3. Draw two tape diagrams to model each pair of the following fractions with related denominators. Use $>$, $<$, or $=$ to compare.

a. $\frac{3}{4}$ _____ $\frac{7}{12}$

b. $\frac{2}{4}$ _____ $\frac{1}{8}$

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

4. Draw one number line to model each pair of fractions with related denominators. Use $>$, $<$, or $=$ to compare.

a. $\frac{3}{4}$ _____ $\frac{5}{8}$

b. $\frac{11}{12}$ _____ $\frac{3}{4}$

c. $\frac{4}{5}$ _____ $\frac{7}{10}$

d. $\frac{8}{9}$ _____ $\frac{2}{3}$

5. Compare each pair of fractions using $>$, $<$, or $=$. Draw a model if you choose to.

a. $\frac{1}{7}$ _____ $\frac{2}{7}$

b. $\frac{5}{7}$ _____ $\frac{11}{14}$

c. $\frac{7}{10}$ _____ $\frac{3}{5}$

d. $\frac{2}{3}$ _____ $\frac{9}{15}$

e. $\frac{3}{4}$ _____ $\frac{9}{12}$


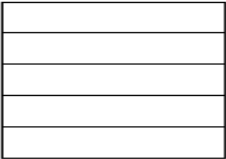

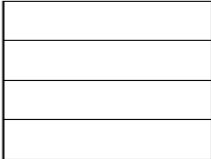
f. $\frac{5}{3}$ _____ $\frac{5}{2}$

6. Simon claims $\frac{4}{9}$ is greater than $\frac{1}{3}$. Ted thinks $\frac{4}{9}$ is less than $\frac{1}{3}$. Who is correct? Support your answer with a picture.

Name _____

Date _____

1. Draw an area model for each pair of fractions, and use it to compare the two fractions by writing $>$, $<$, or $=$ on the line. The first two have been partially done for you. Each rectangle represents 1.

| | |
|--|---|
| <p>a. $\frac{1}{2}$ _____ $\frac{3}{5}$</p> $\frac{1 \times 5}{2 \times 5} = \frac{5}{10} \quad \frac{3 \times 2}{5 \times 2} = \frac{6}{10}$ $\frac{5}{10} < \frac{6}{10}, \text{ so } \frac{1}{2} < \frac{3}{5}$   | <p>b. $\frac{2}{3}$ _____ $\frac{3}{4}$</p>   |
| <p>c. $\frac{4}{6}$ _____ $\frac{5}{8}$</p> | <p>d. $\frac{2}{7}$ _____ $\frac{3}{5}$</p> |
| <p>e. $\frac{4}{6}$ _____ $\frac{6}{9}$</p> | <p>f. $\frac{4}{5}$ _____ $\frac{5}{6}$</p> |

2. Rename the fractions, as needed, using multiplication in order to compare each pair of fractions by writing $>$, $<$, or $=$.

a. $\frac{2}{3}$ _____ $\frac{2}{4}$

b. $\frac{4}{7}$ _____ $\frac{1}{2}$

c. $\frac{5}{4}$ _____ $\frac{9}{8}$

d. $\frac{8}{12}$ _____ $\frac{5}{8}$

3. Use any method to compare the fractions. Record your answer using $>$, $<$, or $=$.

a. $\frac{8}{9}$ _____ $\frac{2}{3}$

b. $\frac{4}{7}$ _____ $\frac{4}{5}$

c. $\frac{3}{2}$ _____ $\frac{9}{6}$

d. $\frac{11}{7}$ _____ $\frac{5}{3}$

4. Explain which method you prefer using to compare fractions. Provide an example using words, pictures, or numbers.

Name _____ Date _____

1. Solve.

- a. 3 sixths – 2 sixths = _____
- b. 5 tenths – 3 tenths = _____
- c. 3 fourths – 2 fourths = _____
- d. 5 thirds – 2 thirds = _____

2. Solve.

- a. $\frac{3}{5} - \frac{2}{5}$
- b. $\frac{7}{9} - \frac{3}{9}$
- c. $\frac{7}{12} - \frac{3}{12}$
- d. $\frac{6}{6} - \frac{4}{6}$
- e. $\frac{5}{3} - \frac{2}{3}$
- f. $\frac{7}{4} - \frac{5}{4}$

3. Solve. Use a number bond to decompose the difference. Record your final answer as a mixed number. Problem (a) has been completed for you.

- a. $\frac{12}{6} - \frac{3}{6} = \frac{9}{6} = 1\frac{3}{6}$
- b. $\frac{17}{8} - \frac{6}{8}$
- c. $\frac{9}{5} - \frac{3}{5}$
- d. $\frac{11}{4} - \frac{6}{4}$
- e. $\frac{10}{7} - \frac{2}{7}$
- f. $\frac{21}{10} - \frac{9}{10}$

4. Solve. Write the sum in unit form.

a. 4 fifths + 2 fifths = _____

b. 5 eighths + 2 eighths = _____

5. Solve.

a. $\frac{3}{11} + \frac{6}{11}$

b. $\frac{3}{10} + \frac{6}{10}$

6. Solve. Use a number bond to decompose the sum. Record your final answer as a mixed number.

a. $\frac{3}{4} + \frac{3}{4}$

b. $\frac{8}{12} + \frac{6}{12}$

c. $\frac{5}{8} + \frac{7}{8}$

d. $\frac{8}{10} + \frac{5}{10}$

e. $\frac{3}{5} + \frac{6}{5}$

f. $\frac{4}{3} + \frac{2}{3}$

7. Solve. Use a number line to model your answer.

a. $\frac{11}{9} - \frac{5}{9}$

b. $\frac{13}{12} + \frac{4}{12}$

Name _____

Date _____

1. Use the following three fractions to write two subtraction and two addition number sentences.

| | |
|--|---|
| <p>a. $\frac{5}{6}, \frac{4}{6}, \frac{9}{6}$</p> | <p>b. $\frac{5}{9}, \frac{13}{9}, \frac{8}{9}$</p> |
|--|---|

2. Solve. Model each subtraction problem with a number line, and solve by both counting up and subtracting.

a. $1 - \frac{5}{8}$

b. $1 - \frac{2}{5}$

c. $1\frac{3}{6} - \frac{5}{6}$

d. $1 - \frac{1}{4}$

e. $1\frac{1}{3} - \frac{2}{3}$

f. $1\frac{1}{5} - \frac{2}{5}$

3. Find the difference in two ways. Use number bonds to decompose the total. Part (a) has been completed for you.

a. $1\frac{2}{5} - \frac{4}{5}$

$$\frac{5}{5} + \frac{2}{5} = \frac{7}{5}$$

$$\frac{7}{5} - \frac{4}{5} = \left(\frac{3}{5}\right)$$

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

$$\frac{1}{5} + \frac{2}{5} = \left(\frac{3}{5}\right)$$

b. $1\frac{3}{8} - \frac{7}{8}$

c. $1\frac{1}{4} - \frac{3}{4}$

d. $1\frac{2}{7} - \frac{5}{7}$

e. $1\frac{3}{10} - \frac{7}{10}$

Name _____

Date _____

1. Show one way to solve each problem. Express sums and differences as a mixed number when possible. Use number bonds when it helps you. Part (a) is partially completed.

| | | |
|--|---|--|
| <p>a. $\frac{1}{3} + \frac{2}{3} + \frac{1}{3}$</p> <p>$= \frac{3}{3} + \frac{1}{3} = 1 + \frac{1}{3}$</p> <p>$=$ _____</p> | <p>b. $\frac{5}{8} + \frac{5}{8} + \frac{3}{8}$</p> | <p>c. $\frac{4}{6} + \frac{6}{6} + \frac{1}{6}$</p> |
| <p>d. $1\frac{2}{12} - \frac{2}{12} - \frac{1}{12}$</p> | <p>e. $\frac{5}{7} + \frac{1}{7} + \frac{4}{7}$</p> | <p>f. $\frac{4}{10} + \frac{7}{10} + \frac{9}{10}$</p> |
| <p>g. $1 - \frac{3}{10} - \frac{1}{10}$</p> | <p>h. $1\frac{3}{5} - \frac{4}{5} - \frac{1}{5}$</p> | <p>i. $\frac{10}{15} + \frac{7}{15} + \frac{12}{15} + \frac{1}{15}$</p> |

2. Bonnie used two different strategies to solve $\frac{5}{10} + \frac{4}{10} + \frac{3}{10}$.

Bonnie's First Strategy

$$\frac{5}{10} + \frac{4}{10} + \frac{3}{10} = \frac{9}{10} + \frac{3}{10} = \frac{10}{10} + \frac{2}{10} = 1\frac{2}{10}$$

$$\frac{1}{10} \quad \frac{2}{10}$$

Bonnie's Second Strategy

$$\frac{5}{10} + \frac{4}{10} + \frac{3}{10} = \frac{12}{10} = 1 + \frac{2}{10} = 1\frac{2}{10}$$

$$\frac{10}{10} \quad \frac{2}{10}$$

Which strategy do you like best? Why?

3. You gave one solution for each part of Problem 1. Now, for each problem indicated below, give a different solution method.

1(b) $\frac{5}{8} + \frac{5}{8} + \frac{3}{8}$

1(e) $\frac{5}{7} + \frac{1}{7} + \frac{4}{7}$

1(h) $1\frac{3}{5} - \frac{4}{5} - \frac{1}{5}$

Name _____

Date _____

Use the RDW process to solve.

1. Isla walked $\frac{3}{4}$ mile each way to and from school on Wednesday. How many miles did Isla walk that day?
2. Zach spent $\frac{2}{3}$ hour reading on Friday and $1\frac{1}{3}$ hours reading on Saturday. How much more time did he read on Saturday than on Friday?
3. Mrs. Cashmore bought a large melon. She cut a piece that weighed $1\frac{1}{8}$ pounds and gave it to her neighbor. The remaining piece of melon weighed $\frac{6}{8}$ pound. How much did the whole melon weigh?

4. Ally's little sister wanted to help her make some oatmeal cookies. First, she put $\frac{5}{8}$ cup of oatmeal in the bowl. Next, she added another $\frac{5}{8}$ cup of oatmeal. Finally, she added another $\frac{5}{8}$ cup of oatmeal. How much oatmeal did she put in the bowl?
5. Marcia baked 2 pans of brownies. Her family ate $1\frac{5}{6}$ pans. What fraction of a pan of brownies was left?
6. Joanie wrote a letter that was $1\frac{1}{4}$ pages long. Katie wrote a letter that was $\frac{3}{4}$ page shorter than Joanie's letter. How long was Katie's letter?

Name _____

Date _____

1. Use a tape diagram to represent each addend. Decompose one of the tape diagrams to make like units. Then, write the complete number sentence.

a. $\frac{1}{3} + \frac{1}{6}$

b. $\frac{1}{2} + \frac{1}{4}$

c. $\frac{3}{4} + \frac{1}{8}$

d. $\frac{1}{4} + \frac{5}{12}$

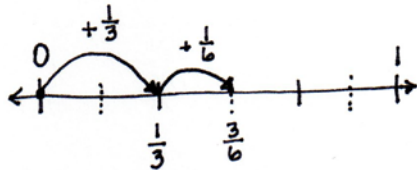
e. $\frac{3}{8} + \frac{1}{2}$

f. $\frac{3}{5} + \frac{3}{10}$

2. Estimate to determine if the sum is between 0 and 1 or 1 and 2. Draw a number line to model the addition. Then, write a complete number sentence. The first one has been completed for you.

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

b. $\frac{3}{5} + \frac{7}{10}$



c. $\frac{5}{12} + \frac{1}{4}$

d. $\frac{3}{4} + \frac{5}{8}$

e. $\frac{7}{8} + \frac{3}{4}$

f. $\frac{1}{6} + \frac{5}{3}$

3. Solve the following addition problem without drawing a model. Show your work.

$$\frac{5}{6} + \frac{1}{3}$$

Name _____

Date _____

1. Draw a tape diagram to represent each addend. Decompose one of the tape diagrams to make like units. Then, write a complete number sentence. Use a number bond to write each sum as a mixed number.

a. $\frac{7}{8} + \frac{1}{4}$

b. $\frac{4}{8} + \frac{2}{4}$

c. $\frac{4}{6} + \frac{1}{2}$

d. $\frac{3}{5} + \frac{8}{10}$

2. Draw a number line to model the addition. Then, write a complete number sentence. Use a number bond to write each sum as a mixed number.

a. $\frac{1}{2} + \frac{5}{8}$

b. $\frac{3}{4} + \frac{3}{8}$

c. $\frac{4}{10} + \frac{4}{5}$

d. $\frac{1}{3} + \frac{5}{6}$

3. Solve. Write the sum as a mixed number. Draw a model if needed.

a. $\frac{1}{2} + \frac{6}{8}$

b. $\frac{7}{8} + \frac{3}{4}$

c. $\frac{5}{6} + \frac{1}{3}$

d. $\frac{9}{10} + \frac{2}{5}$

e. $\frac{4}{12} + \frac{3}{4}$

f. $\frac{1}{2} + \frac{5}{6}$

g. $\frac{3}{12} + \frac{5}{6}$

h. $\frac{7}{10} + \frac{4}{5}$

Mission 6: Decimal Fractions

Section One: Student Notes and Exit Tickets

To complete with all digital lessons

Are you ready to
➔EARN?

Mission 6

Decimal Fractions

Name: _____

© 2019 Zearn

Portions of this work, Zearn Math, are derivative of Eureka Math and licensed by Great Minds. © 2019 Great Minds. All rights reserved. Eureka Math was created by Great Minds in partnership with the New York State Education Department and also released as EngageNY.

Zearn® is a registered trademark.

Printed in the U.S.A.

This book may be purchased from the publisher at **[zearn.org](https://www.zearn.org)**.

Fourth Edition

Lesson 1

G:4 M:6

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

1. Fill in the blank to make the sentence true in both fraction form and decimal form.

a. $\frac{9}{10}$ cm + _____ cm = 1 cm 0.9 cm + _____ cm = 1.0 cm

b. $\frac{4}{10}$ cm + _____ cm = 1 cm 0.4 cm + _____ cm = 1.0 cm

2. Match each amount expressed in unit form to its fraction form and decimal form.

3 tenths

$$\frac{5}{10}$$

0.8

8 tenths

$$\frac{8}{10}$$

0.3

5 tenths

$$\frac{3}{10}$$

0.5



Lesson 2

G:4 M:6

Shaded Fractions, Shaded Decimals

ZEARN STUDENT NOTES

Name: _____ Date: _____

Complete: ☐

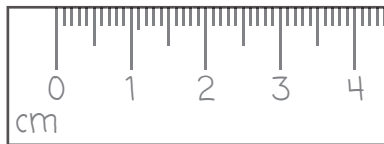
Class: _____

You will need a centimeter ruler for this lesson.

1

Using the centimeter ruler, draw a line that measures 2 cm. Then, extend the line by $\frac{6}{10}$ cm.

DRAW



SOLVE

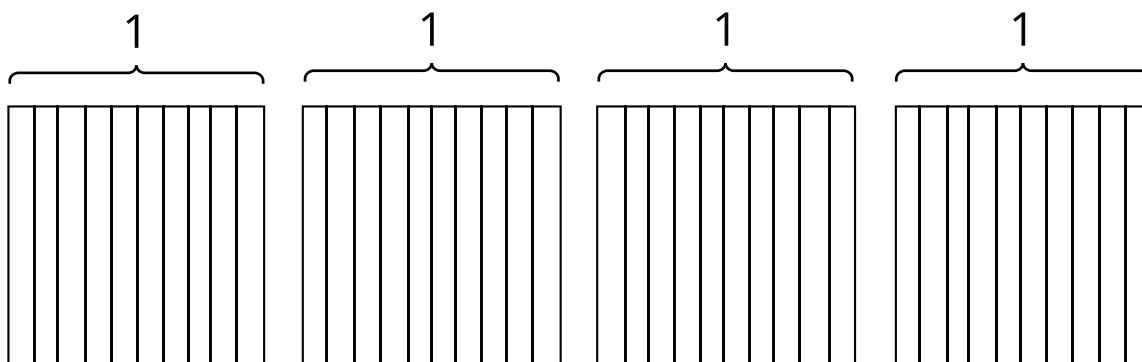
Fraction equation: _____ cm + _____ cm = _____ cm

Decimal equation: _____ cm + _____ cm = _____ cm

2

Shade to represent $3\frac{2}{10}$ using the area models.

SHOW YOUR WORK



Decimal equation: _____ = _____ + _____

We need _____ more to make 4 wholes.

EXTRA WORKSPACE



Lesson 2
G:4 M:6

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

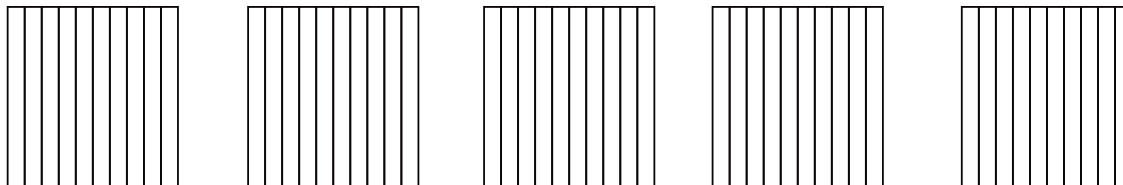
1. For the length given below, draw a line segment to match.
Express the measurement as an equivalent mixed number.

4.8 cm

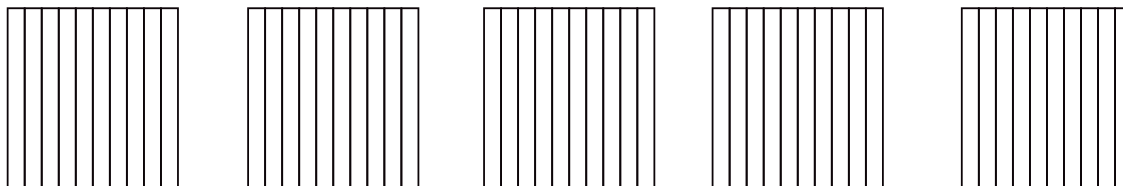


2. Write the following in decimal form and as a mixed number.
Shade the area model to match.

a. 3 ones and 7 tenths = _____ = _____



b. $\frac{24}{10}$ = _____ = _____



How much more is needed to get to 5? _____



Lesson 3
G:4 M:6

Equivalence Extravaganza

ZEARN STUDENT NOTES

Name: _____ Date: _____

Complete: ☐

Class: _____

1

Write the value represented by these place value disks in unit form and standard form. Then solve.



_____ tens





_____ ones





_____ tenths



+

+

= _____

= _____



EXTRA WORKSPACE



Lesson 3

G:4 M:6

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

1. Circle groups of tenths to make as many ones as possible.

| | |
|---|--|
| <p>How many tenths in all?</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> $\textcircled{0.1}$ $\textcircled{0.1}$ $\textcircled{0.1}$ $\textcircled{0.1}$ $\textcircled{0.1}$ $\textcircled{0.1}$ $\textcircled{0.1}$ $\textcircled{0.1}$ $\textcircled{0.1}$ $\textcircled{0.1}$ </div> <div style="text-align: center;"> $\textcircled{0.1}$ $\textcircled{0.1}$ $\textcircled{0.1}$ $\textcircled{0.1}$ $\textcircled{0.1}$ $\textcircled{0.1}$ $\textcircled{0.1}$ $\textcircled{0.1}$ </div> </div> <p>There are _____ tenths.</p> | <p>Write and draw the same number using ones and tenths.</p> <p>Decimal Form: _____</p> <p>How much more is needed to get to 2? _____</p> |
|---|--|

2. Complete the chart.

| Point | Number Line | Decimal Form | Mixed Number (ones and fractions form) | Expanded Form (Fraction or decimal form) | How much to get to the next one? |
|-------|-------------|--------------|--|--|----------------------------------|
| a. | | | $12\frac{9}{10}$ | | |
| b. | | 70.7 | | | |



Lesson 4
G:4 M:6

From Tenths to Hundredths

ZEARN STUDENT NOTES

Name: _____ Date: _____

Complete: ☐

Class: _____

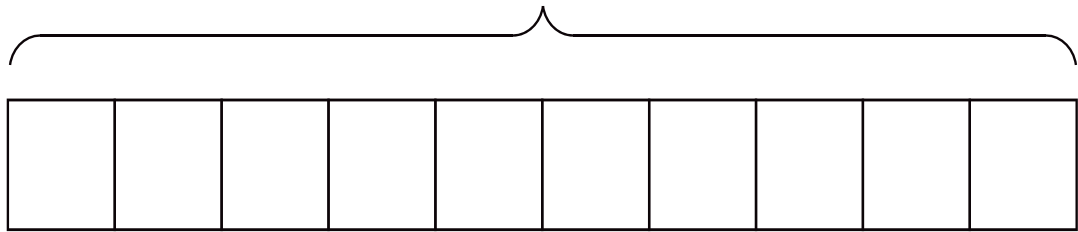
1

Shade in the amount shown. Then, write the equivalent decimal.

SHOW YOUR WORK

$$\frac{5}{10} \text{ m} = \underline{\hspace{2cm}} \text{ m}$$

1 meter



EXTRA WORKSPACE



Lesson 4

G:4 M:6

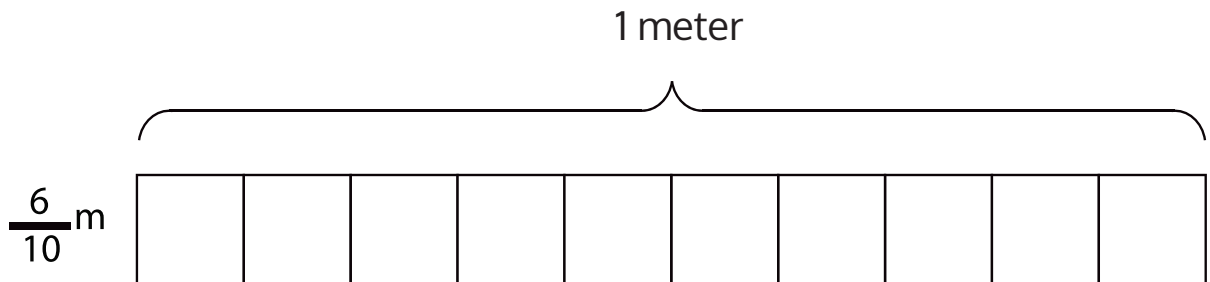
EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

1. Shade in the amount shown. Then, write the equivalent decimal.



= _____

2. Draw a number bond, pulling out the tenths from the hundredths. Write the total as the equivalent decimal.

| | |
|-----------------------|-----------------------|
| a. $\frac{62}{100}$ m | b. $\frac{27}{100}$ m |
| | |



Lesson 5

G:4 M:6

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

1. Use both tenths and hundredths number disks to represent each fraction. Write the equivalent decimal, and fill in the blanks to represent each in unit form.

a. $\frac{7}{100} = 0.$ _____

_____ hundredths

b. $\frac{34}{100} = 0.$ _____

_____ tenths _____ hundredths



Lesson 6
G:4 M:6

Zoom! Plot!

ZEARN STUDENT NOTES

Name: _____ Date: _____

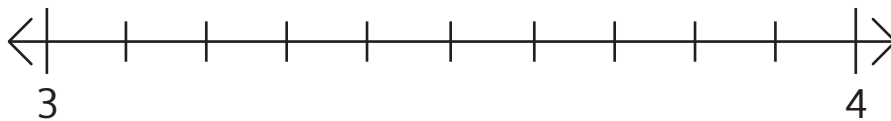
Complete: ☐

Class: _____

1 Show $3\frac{46}{100}$ on the number line.

SHOW YOUR WORK

$$3\frac{46}{100}$$



EXTRA WORKSPACE



Lesson 6

G:4 M:6

EXIT TICKET

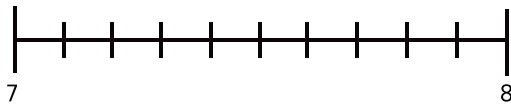
Name: _____ Date: _____

Complete: ☐

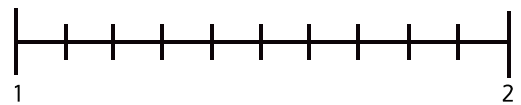
Class: _____

1. Estimate to locate the points on the number lines. Mark the point, and label it as a decimal.

a. $7\frac{20}{100}$



b. $1\frac{75}{100}$



2. Write the equivalent fraction and decimal for each number.

a. 8 ones 24 hundredths

b. 2 ones 6 hundredths



| | |
|----------------------------|----------------------------|
| Lesson 7 G:4 M:6 | E x p a n d |
| | ZEARN STUDENT NOTES |

Name: _____ Date: _____

Complete: ☐ Class: _____

- 1** Write 340.83 in expanded form using fraction notation and decimal notation.

| |
|--------------------------|
| FRACTION NOTATION |
| DECIMAL NOTATION |



EXTRA WORKSPACE



Lesson 7

G:4 M:6

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

1. Use the place value chart to answer the following questions.
Express the value of the digit in unit form.

| hundreds | tens | ones | . | tenths | hundredths |
|----------|------|------|---|--------|------------|
| 8 | 2 | 7 | | 6 | 4 |

- a. The digit _____ is in the hundreds place. It has a value of _____.
- b. The digit _____ is in the tens place. It has a value of _____.
- c. The digit _____ is in the tenths place. It has a value of _____.
- d. The digit _____ is in the hundredths place. It has a value of _____.





2. Complete the following chart.

| Fraction | Expanded Form | | Decimal |
|--------------------|---|------------------|---------|
| | Fraction Notation | Decimal Notation | |
| $422\frac{8}{100}$ | | | |
| | $(3 \times 100) + (9\frac{1}{10}) + (2\frac{1}{100})$ | | |



Lesson 8

G:4 M:6

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

1. Draw number disks to represent the following decomposition.

a. 3 ones 2 tenths = _____ tenths

| ones | . | tenths | hundredths |
|------|---|--------|------------|
| | | | |

b. 3 ones 2 tenths = _____ hundredths

2. Decompose the units.

a. 2.6 = _____ tenths

b. 6.1 = _____ hundredths



Lesson 9
G:4 M:6

PVC, Easy as 0.1, 0.2, 0.3

ZEARN STUDENT NOTES

Name: _____ Date: _____

Complete: ☐

Class: _____

1

Shade the tape diagrams to represent the length of each shaded meter stick. Then, write a sentence to compare the lengths.

B



0.41 m

G



0.35 m

B

G

| ones (meters) | tenths | hundredths |
|------------------|--------|------------|
| | | |
| | | |

Tape _____ is longer than tape _____ because
_____ meters is longer than _____ meters.

2

Record the weight of each object in the place value chart. Then, find the lightest object.

Orange
Apple
Book

| ones | tenths | hundredths |
|------|--------|------------|
| | | |
| | | |
| | | |

The _____ weighs less than the _____
and the _____.

3

Record the volume of each graduated cylinder in the place value chart. Then, order the cylinders from least volume to greatest volume.

A
B
C
D

| ones | tenths | hundredths |
|------|--------|------------|
| | | |
| | | |
| | | |
| | | |



Lesson 9

G:4 M:6

EXIT TICKET

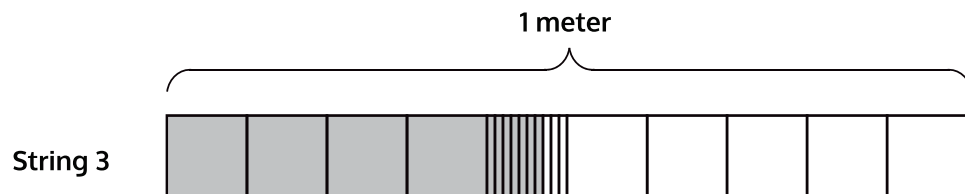
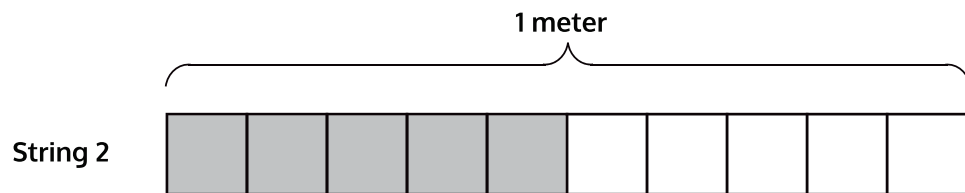
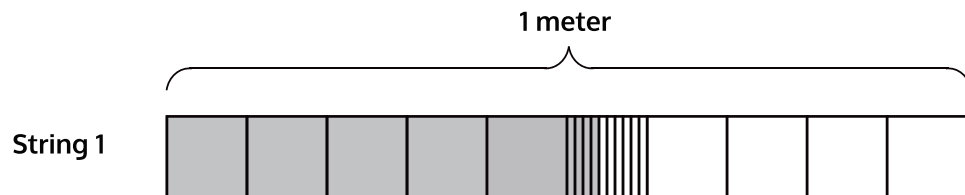
Name: _____ Date: _____

Complete: ☐

Class: _____

1. Doug measures the lengths of three strings and shades tape diagrams to represent the length of each string, as shown below.

- a. Express, in decimal form, the length of each string.



- b. List the lengths of the strings in order from greatest to least.





2. Compare the values below using $>$, $<$, or $=$.

a. 0.8 kg 0.6 kg

b. 0.36 kg 0.5 kg

c. 0.4 kg 0.47 kg



Lesson 10

G:4 M:6

EXIT TICKET

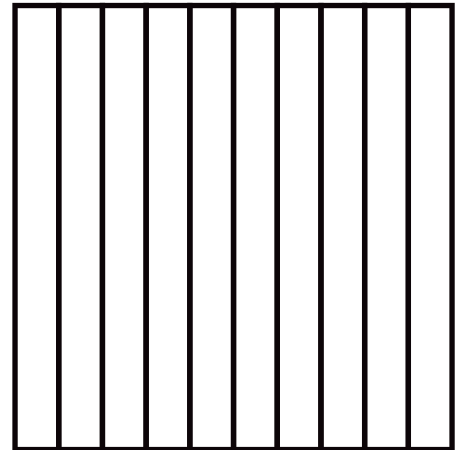
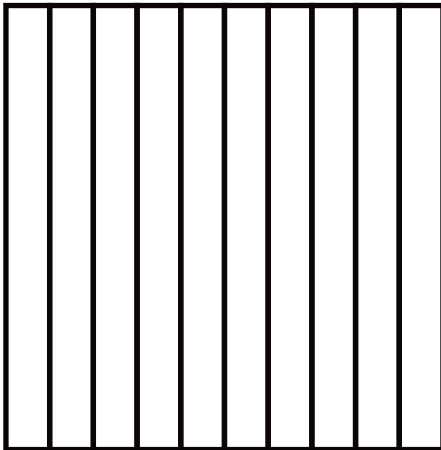
Name: _____ Date: _____


Complete: ☐

Class: _____

1. Ryan says that 0.6 is less than 0.60 because it has fewer digits. Jessie says that 0.6 is greater than 0.60. Who is right? Why? Use the area models below to help explain your answer.

0.6 _____ 0.60





2. Use the symbols $<$, $>$, or $=$ to compare.

a. $3.9 \bigcirc 3.09$

b. $2.4 \bigcirc 2 \text{ ones and } 4 \text{ hundredths}$

c. $7.84 \bigcirc 78 \text{ tenths and } 4 \text{ hundredths}$



Lesson 12
G:4 M:6

Add Your Understanding

ZEARN STUDENT NOTES

Name: _____ Date: _____

Complete: ☐

Class: _____

1 Solve $\frac{3}{4} + \frac{1}{2}$.

SHOW YOUR WORK

2

Solve $\frac{6}{10} + \frac{57}{100}$.

Write your answer as a decimal.

SHOW YOUR WORK

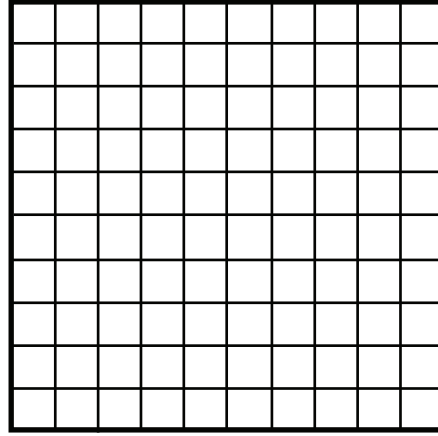
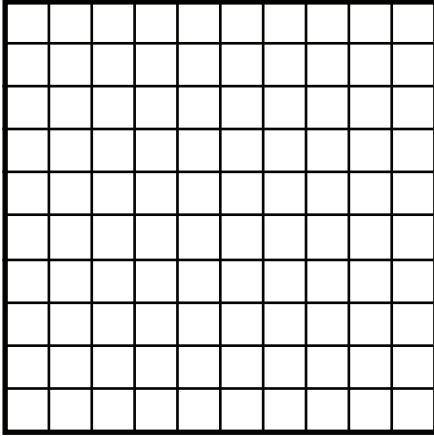


3

Model $\frac{9}{10} + \frac{64}{100}$ using the area models.

Then, solve and write your final answer as a decimal.

SHOW YOUR WORK



Lesson 12

G:4 M:6

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

1. Complete the number sentence by expressing each part using hundredths. Use the place value chart to model.

| ones | . | tenths | hundredths |
|------|---|--------|------------|
| | | | |

1 tenth + 9 hundredths = _____ hundredths

2. Find the sum. Write your answer as a decimal.

$$\frac{4}{10} + \frac{73}{100}$$



| | |
|-----------------------------|----------------------------|
| Lesson 13 G:4 M:6 | Decimal + Decimal |
| | ZEARN STUDENT NOTES |

Name: _____ Date: _____

Complete: ☐

Class: _____

1

Solve $0.30 + 0.5$

Express your answer as a decimal number.

SHOW YOUR WORK



2

Rewrite $5.6 + 4.53$ as the sum of two mixed numbers. Solve. Then, rewrite your number sentence in decimal form.

SHOW YOUR WORK

DECIMAL FORM



Lesson 13
G:4 M:6

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

1. Solve by rewriting the number sentence in fraction form. After solving, rewrite the complete number sentence in decimal form.

a. $7.3 + 0.95$

b. $8.29 + 5.9$



Lesson 14
G:4 M:6

For Good Measure

ZEARN STUDENT NOTES

Name: _____ Date: _____

Complete: ☐

Class: _____

- 1** A team of three friends ran a relay race. Camille ran the fastest, measuring 29.2 seconds. Marco was 1.89 seconds slower than Camille. Laina ran 0.9 seconds slower than Marco.

What was the team's total time for the race?

DRAW

SOLVE

The team's total was _____ seconds.



EXTRA WORKSPACE



Lesson 14

G:4 M:6

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

1. Elise ran 6.43 kilometers on Saturday and 5.6 kilometers on Sunday.

How many total kilometers did she run on Saturday and Sunday?

SHOW YOUR WORK



| | |
|-----------------------------|-----------------------------|
| Lesson 15 G:4 M:6 | Money, Money, Money! |
| | ZEARN STUDENT NOTES |

Name: _____ Date: _____

Complete: ☐

Class: _____

- 1** Give the total amount of money in fraction and decimal form.

3 quarters and 4 dimes

SHOW YOUR WORK

Fraction: _____

Mixed Number: _____

Decimal: _____



EXTRA WORKSPACE



Lesson 15
G:4 M:6

EXIT TICKET

Name: _____ Date: _____

Complete: ☐


Class: _____

1. Solve. Give the total amount of money in fraction and decimal form.

a. 2 quarters and 3 dimes

b. 1 quarter, 7 dimes, and 23 pennies





2. Solve. Express the answer as a decimal.

2 dollars 1 quarter 14 pennies + 3 dollars 2 quarters 3 dimes



| | |
|-----------------------------|----------------------------|
| Lesson 16 G:4 M:6 | Mo' Money, Mo' Math |
| | ZEARN STUDENT NOTES |

Name: _____ Date: _____

Complete: ☐

Class: _____

- 1 Jose wants to buy a pen for \$2.70, a box of pencils for \$3.39 and an eraser for \$1.86.

How much will he spend in total?

DRAW

SOLVE

Jose will spend _____.



2

Jose has 6 ones, 3 quarters, 2 dimes, and 9 pennies.

Is that enough money to buy the pen, box of pencils, and eraser?

SHOW YOUR WORK

EXTRA WORKSPACE



Lesson 16

G:4 M:6

EXIT TICKET

Name: _____ Date: _____

Complete: ☐

Class: _____

Use the RDW process to solve. Write your answer as a decimal.

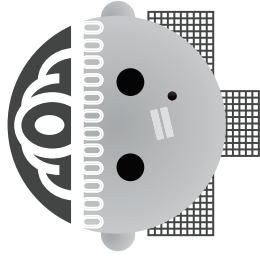
1. David's mother told him that he could keep all the money he found under the sofa cushions in their house. David found 6 quarters, 4 dimes, and 26 pennies.

How much money did David find altogether?

SHOW YOUR WORK



LEARN



Congratulations!
You completed

Grade 4 Mission 6

Decimal Fractions

••• Name

Date _____



Zearned it!

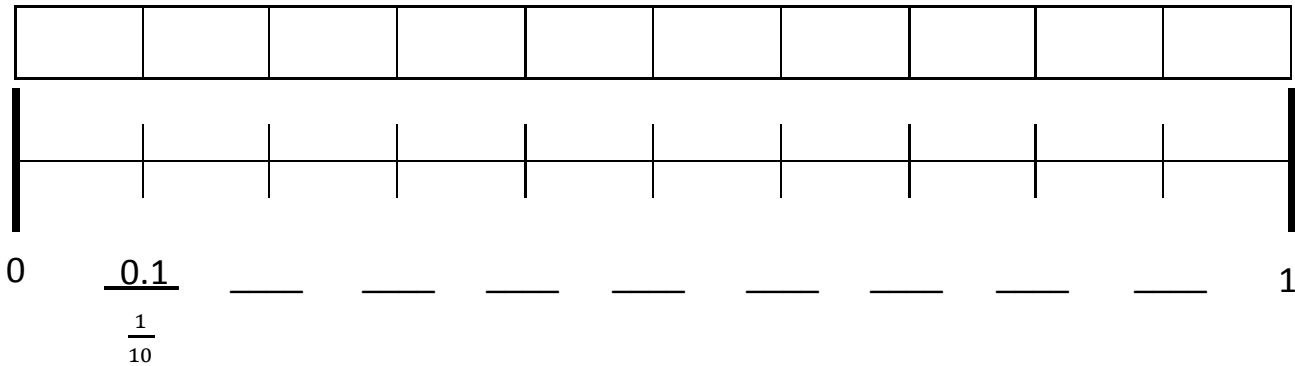
Mission 6: Decimal Fractions

Section Two: Problem Sets and Homework

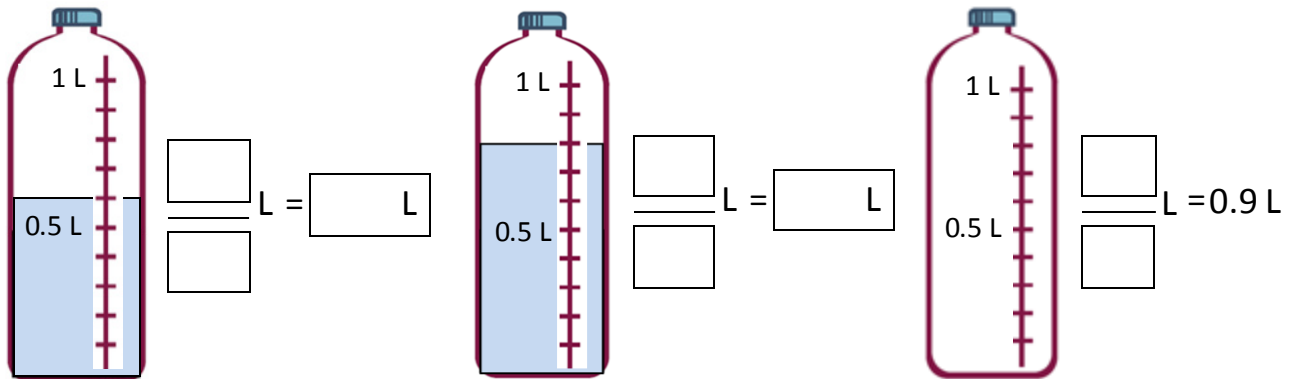
To complete if internet access is not available

Name _____ Date _____

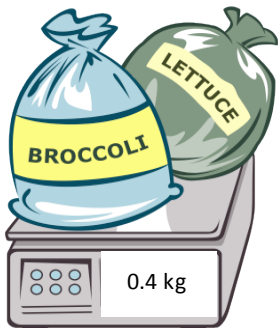
1. Shade the first 7 units of the tape diagram. Count by tenths to label the number line using a fraction and a decimal for each point. Circle the decimal that represents the shaded part.



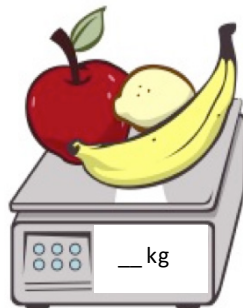
2. Write the total amount of water in fraction form and decimal form. Shade the last bottle to show the correct amount.



3. Write the total weight of the food on each scale in fraction form or decimal form.



$\frac{\quad}{\quad}$ kg



$\frac{8}{10}$ kg



$\frac{\quad}{\quad}$ kg

4. Write the length of the bug in centimeters. (The drawing is not to scale.)



Fraction form: _____ cm

Decimal form: _____ cm

How far does the bug need to walk before its nose is at the 1 cm mark? _____ cm

5. Fill in the blank to make the sentence true in both fraction form and decimal form.

a. $\frac{8}{10}$ cm + _____ cm = 1 cm

0.8 cm + _____ cm = 1.0 cm

b. $\frac{2}{10}$ cm + _____ cm = 1 cm

0.2 cm + _____ cm = 1.0 cm

c. $\frac{6}{10}$ cm + _____ cm = 1 cm

0.6 cm + _____ cm = 1.0 cm

6. Match each amount expressed in unit form to its equivalent fraction and decimal forms.

| | | |
|----------|----------------|-----|
| 3 tenths | $\frac{5}{10}$ | 0.2 |
| 5 tenths | $\frac{9}{10}$ | 0.6 |
| 6 tenths | $\frac{2}{10}$ | 0.3 |
| 9 tenths | $\frac{3}{10}$ | 0.5 |
| 2 tenths | $\frac{6}{10}$ | 0.9 |

Connections shown: 3 tenths connects to $\frac{3}{10}$ and 0.3. $\frac{3}{10}$ connects to 0.3.

Name _____

Date _____

1. For each length given below, draw a line segment to match. Express each measurement as an equivalent mixed number.

a. 2.6 cm

b. 3.4 cm

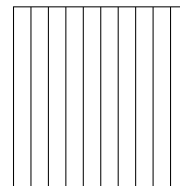
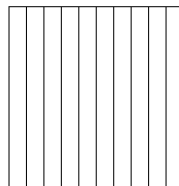
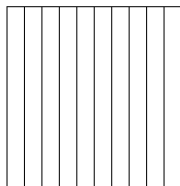
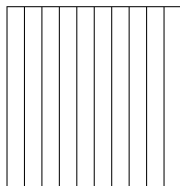
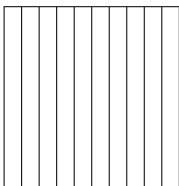
c. 3.7 cm

d. 4.2 cm

e. 2.5 cm

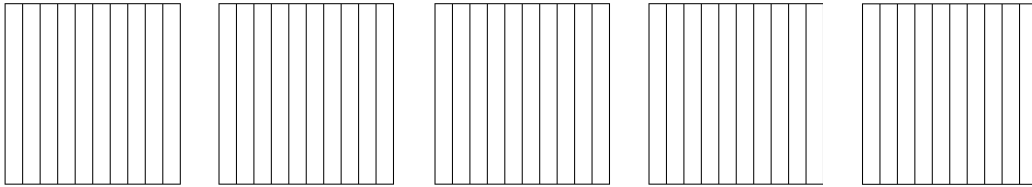
2. Write the following as equivalent decimals. Then, model and rename the number as shown below.

a. 2 ones and 6 tenths = _____

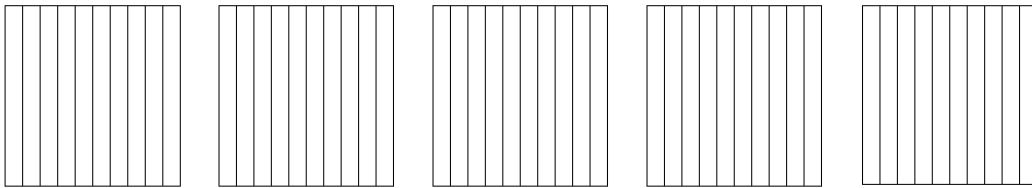


$$2\frac{6}{10} = 2 + \frac{6}{10} = 2 + 0.6 = 2.6$$

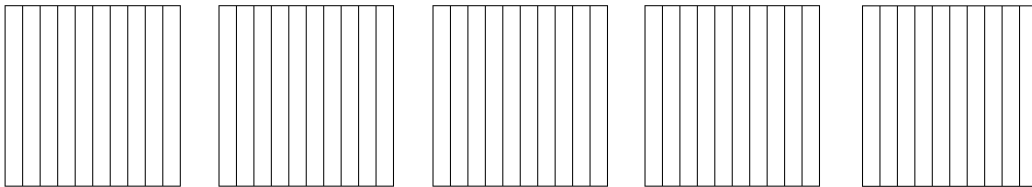
b. 4 ones and 2 tenths = _____



c. $3\frac{4}{10}$ = _____

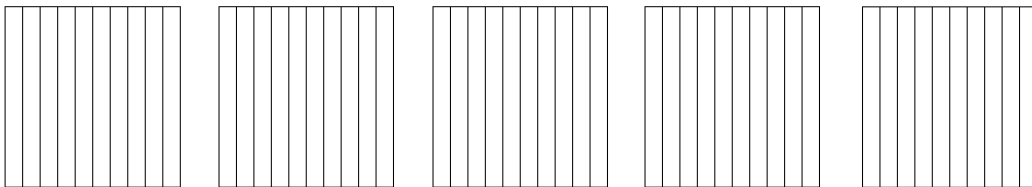


d. $2\frac{5}{10}$ = _____



How much more is needed to get to 5? _____

e. $\frac{37}{10}$ = _____

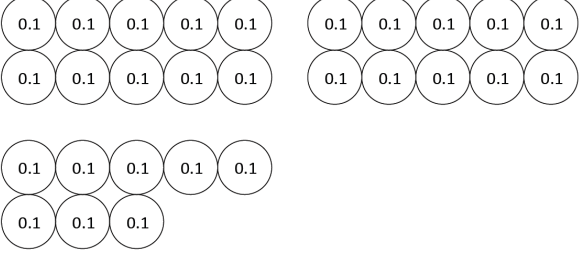
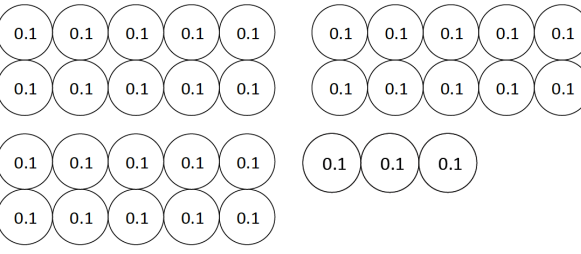


How much more is needed to get to 5? _____

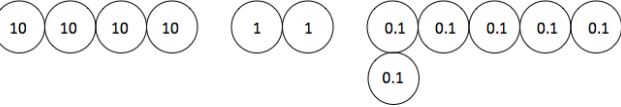
Name _____

Date _____

1. Circle groups of tenths to make as many ones as possible.

| | |
|---|---|
| <p>a. How many tenths in all?</p>  <p>There are _____ tenths.</p> | <p>Write and draw the same number using ones and tenths.</p> <p>Decimal Form: _____</p> <p>How much more is needed to get to 3? _____</p> |
| <p>b. How many tenths in all?</p>  <p>There are _____ tenths.</p> | <p>Write and draw the same number using ones and tenths.</p> <p>Decimal Form: _____</p> <p>How much more is needed to get to 4? _____</p> |


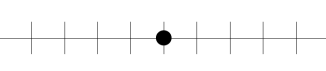



2. Draw disks to represent each number using tens, ones, and tenths. Then, show the expanded form of the number in fraction form and decimal form as shown. The first one has been completed for you.

| | |
|---|---------------------------------|
| <p>a. 4 tens 2 ones 6 tenths</p>  <p>Fraction Expanded Form $(4 \times 10) + (2 \times 1) + (6 \times \frac{1}{10}) = 42 \frac{6}{10}$</p> <p>Decimal Expanded Form $(4 \times 10) + (2 \times 1) + (6 \times 0.1) = 42.6$</p> | <p>b. 1 ten 7 ones 5 tenths</p> |
|---|---------------------------------|

c. 2 tens 3 ones 2 tenths

d. 7 tens 4 ones 7 tenths

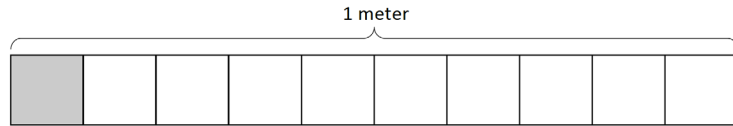
3. Complete the chart.

| Point | Number Line | Decimal Form | Mixed Number (ones and fraction form) | Expanded Form (fraction or decimal form) | How much to get to the next one? |
|-------|---|--------------|---------------------------------------|--|----------------------------------|
| a. |  | | $3\frac{9}{10}$ | | 0.1 |
| b. |  | | | | |
| c. |  | | | $(7 \times 10) + (4 \times 1) + (7 \times \frac{1}{10})$ | |
| d. |  | | $22\frac{2}{10}$ | | |
| e. |  | | | $(8 \times 10) + (8 \times 0.1)$ | |

Name _____

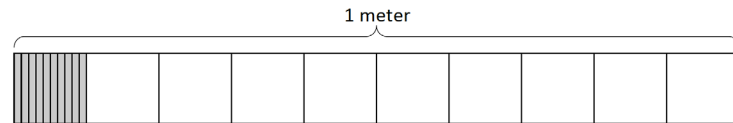
Date _____

1. a. What is the length of the shaded part of the meter stick in centimeters?



- b. What fraction of a meter is 1 centimeter?

- c. In fraction form, express the length of the shaded portion of the meter stick.



- d. In decimal form, express the length of the shaded portion of the meter stick.

- e. What fraction of a meter is 10 centimeters?

2. Fill in the blanks.

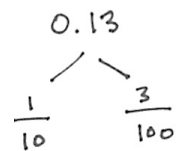
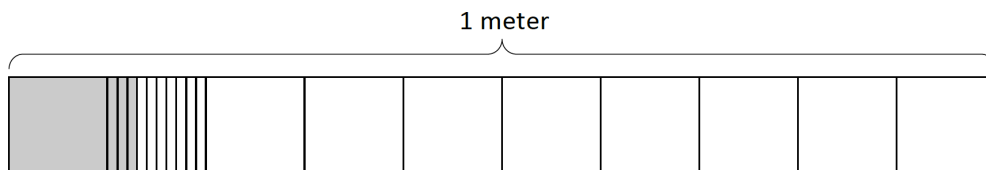
a. 1 tenth = ____ hundredths

b. $\frac{1}{10}$ m = $\frac{\quad}{100}$ m

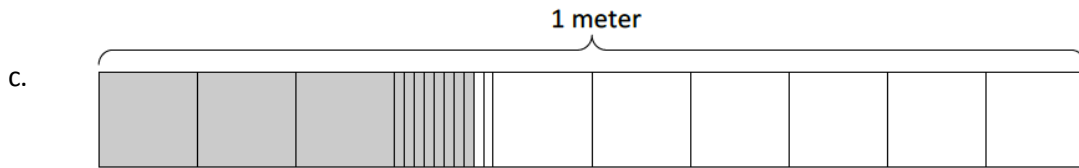
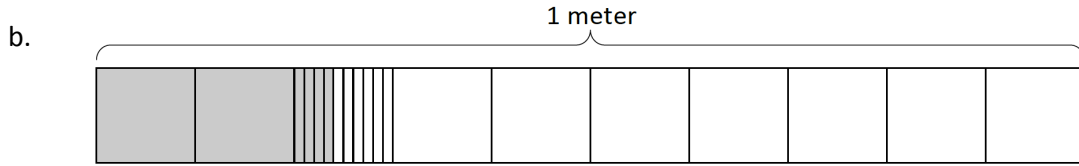
c. $\frac{2}{10}$ m = $\frac{20}{\quad}$ m

3. Use the model to add the shaded parts as shown. Write a number bond with the total written in decimal form and the parts written as fractions. The first one has been done for you.

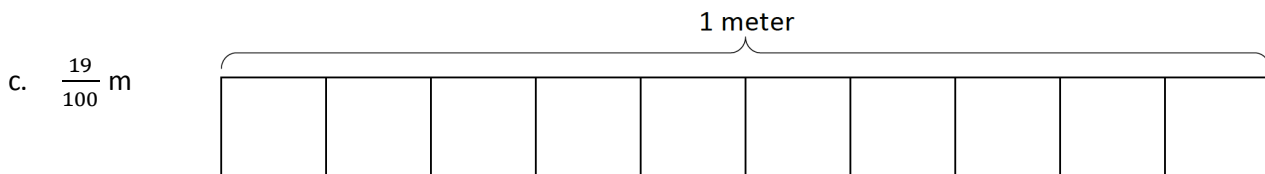
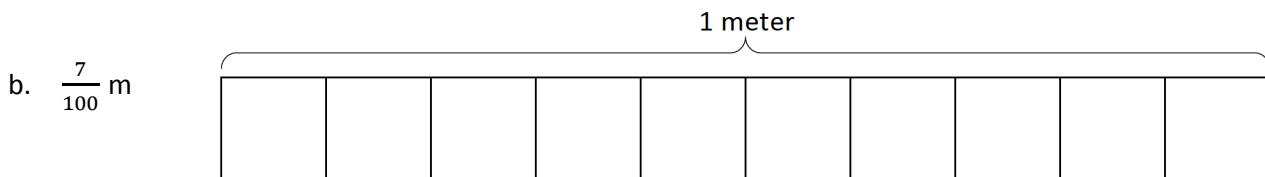
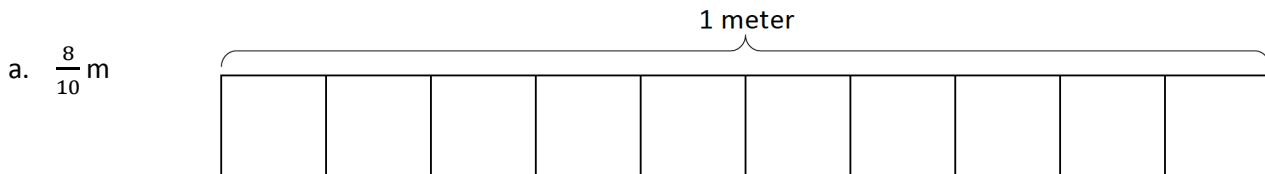
a.



$$\frac{1}{10} \text{ m} + \frac{3}{100} \text{ m} = \frac{13}{100} \text{ m} = 0.13 \text{ m}$$



4. On each meter stick, shade in the amount shown. Then, write the equivalent decimal.



5. Draw a number bond, pulling out the tenths from the hundredths as in Problem 3. Write the total as the equivalent decimal.

a. $\frac{19}{100}$ m

b. $\frac{28}{100}$ m

c. $\frac{77}{100}$

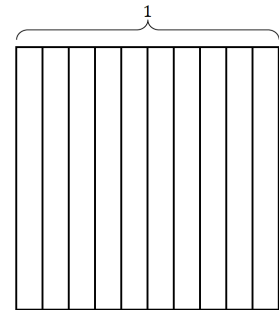
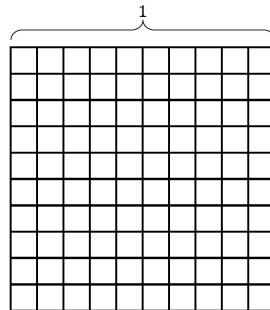
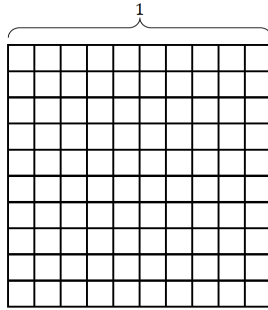
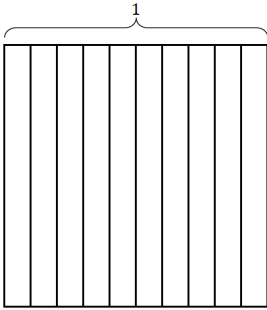
d. $\frac{94}{100}$

Name _____ Date _____

1. Find the equivalent fraction using multiplication or division. Shade the area models to show the equivalency. Record it as a decimal.

a. $\frac{3 \times}{10 \times} = \frac{\quad}{100}$

b. $\frac{50 \div}{100 \div} = \frac{\quad}{10}$

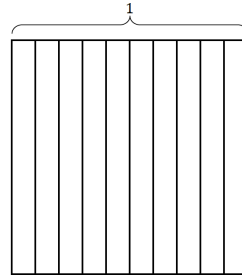


2. Complete the number sentences. Shade the equivalent amount on the area model, drawing horizontal lines to make hundredths.

a. 37 hundredths = _____ tenths + _____ hundredths

Fraction form: _____

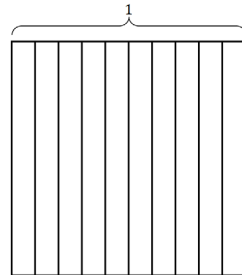
Decimal form: _____



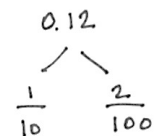
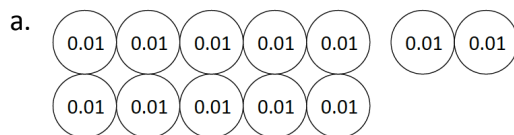
b. 75 hundredths = _____ tenths + _____ hundredths

Fraction form: _____

Decimal form: _____

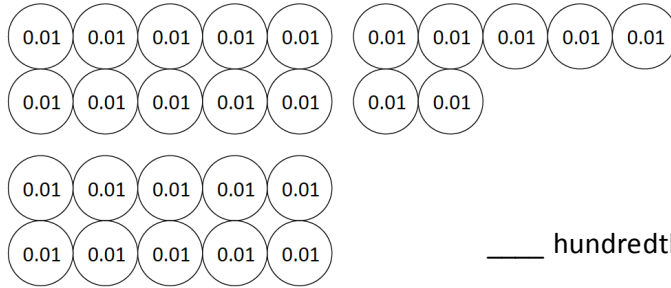


3. Circle hundredths to compose as many tenths as you can. Complete the number sentences. Represent each with a number bond as shown.



_____ hundredths = _____ tenth + _____ hundredths

b.



___ hundredths = ___ tenths + ___ hundredths

4. Use both tenths and hundredths place value disks to represent each number. Write the equivalent number in decimal, fraction, and unit form.

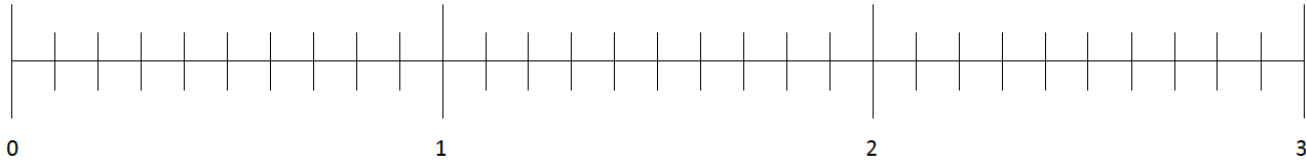
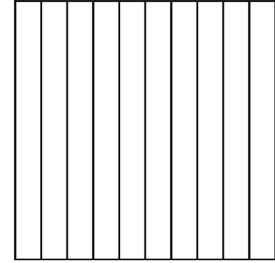
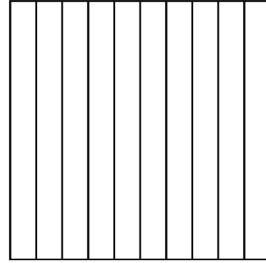
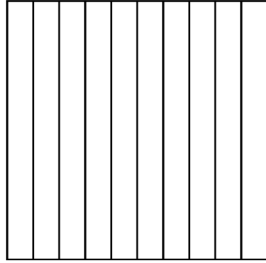
| | |
|---|---|
| <p>a. $\frac{3}{100} = 0.$ ____</p> <p>____ hundredths</p> | <p>b. $\frac{15}{100} = 0.$ ____</p> <p>____ tenth ____ hundredths</p> |
| <p>c. ____ = 0.72</p> <p>____ hundredths</p> | <p>d. ____ = 0.80</p> <p>____ tenths</p> |
| <p>e. ____ = 0. ____</p> <p>7 tenths 2 hundredths</p> | <p>f. ____ = 0. ____</p> <p>80 hundredths</p> |

Name _____

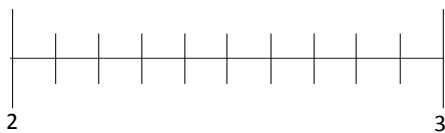
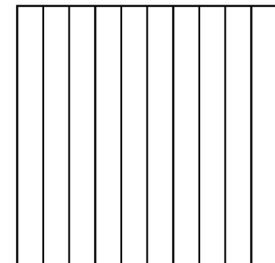
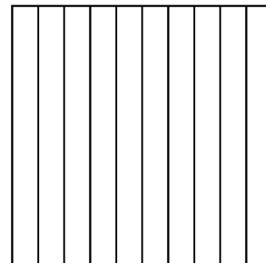
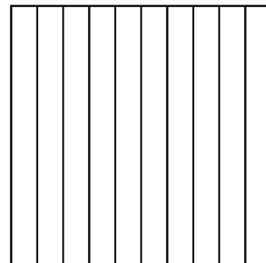
Date _____

- Shade the area models to represent the number, drawing horizontal lines to make hundredths as needed. Locate the corresponding point on the number line. Label with a point, and record the mixed number as a decimal.

a. $1\frac{15}{100} = \underline{\hspace{1cm}}.$

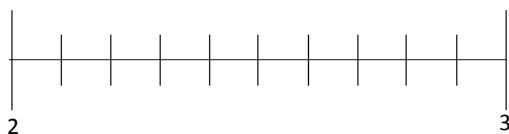


b. $2\frac{47}{100} = \underline{\hspace{1cm}}.$

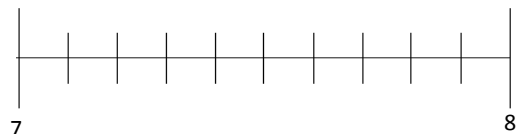


- Estimate to locate the points on the number lines.

a. $2\frac{95}{100}$



b. $7\frac{52}{100}$



3. Write the equivalent fraction and decimal for each of the following numbers.

| | |
|-------------------------|-------------------------|
| a. 1 one 2 hundredths | b. 1 one 17 hundredths |
| c. 2 ones 8 hundredths | d. 2 ones 27 hundredths |
| e. 4 ones 58 hundredths | f. 7 ones 70 hundredths |

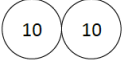

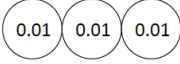
4. Draw lines from dot to dot to match the decimal form to both the unit form and fraction form. All unit forms and fractions have at least one match, and some have more than one match.

| | | |
|------------------------|----------|---------------------|
| 7 ones 13 hundredths ● | ● 7.30 ● | ● $7\frac{3}{100}$ |
| 7 ones 3 hundredths ● | ● 7.3 ● | ● 73 |
| 7 ones 3 tenths ● | ● 7.03 ● | ● $7\frac{13}{100}$ |
| 7 tens 3 ones ● | ● 7.13 ● | ● $7\frac{30}{100}$ |
| | ● 73 ● | |

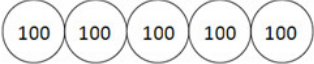
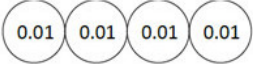
Name _____ Date _____

1. Write a decimal number sentence to identify the total value of the place value disks.

a.

| | | | |
|---|---|---|---------|
|  |  |  | |
| 2 tens | 5 tenths | 3 hundredths | |
| _____ | + | _____ | = _____ |

b.

| | | |
|---|---|---------|
|  |  | |
| 5 hundreds | 4 hundredths | |
| _____ | + | = _____ |

2. Use the place value chart to answer the following questions. Express the value of the digit in unit form.

| hundreds | tens | ones | . | tenths | hundredths |
|----------|------|------|---|--------|------------|
| 4 | 1 | 6 | | 8 | 3 |

- a. The digit _____ is in the hundreds place. It has a value of _____.
- b. The digit _____ is in the tens place. It has a value of _____.
- c. The digit _____ is in the tenths place. It has a value of _____.
- d. The digit _____ is in the hundredths place. It has a value of _____.

| hundreds | tens | ones | . | tenths | hundredths |
|----------|------|------|---|--------|------------|
| 5 | 3 | 2 | | 1 | 6 |

- e. The digit _____ is in the hundreds place. It has a value of _____.
- f. The digit _____ is in the tens place. It has a value of _____.
- g. The digit _____ is in the tenths place. It has a value of _____.
- h. The digit _____ is in the hundredths place. It has a value of _____.

3. Write each decimal as an equivalent fraction. Then, write each number in expanded form, using both decimal and fraction notation. The first one has been done for you.

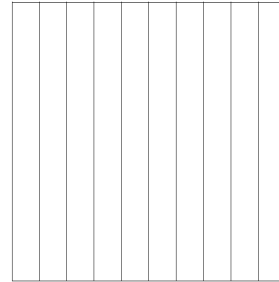
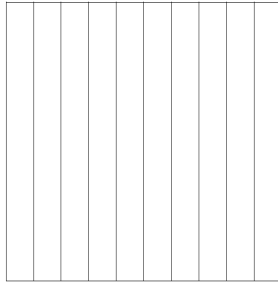
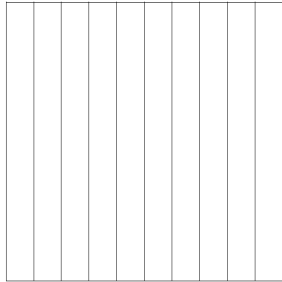
| Decimal and Fraction Form | Expanded Form | |
|-------------------------------------|--|--|
| | Fraction Notation | Decimal Notation |
| $15.43 = 15\frac{43}{100}$ | $(1 \times 10) + (5 \times 1) + (4 \times \frac{1}{10}) + (3 \times \frac{1}{100})$ $10 + 5 + \frac{4}{10} + \frac{3}{100}$ | $(1 \times 10) + (5 \times 1) + (4 \times 0.1) + (3 \times 0.01)$ $10 + 5 + 0.4 + 0.03$ |
| $21.4 = \underline{\hspace{2cm}}$ | | |
| $38.09 = \underline{\hspace{2cm}}$ | | |
| $50.2 = \underline{\hspace{2cm}}$ | | |
| $301.07 = \underline{\hspace{2cm}}$ | | |
| $620.80 = \underline{\hspace{2cm}}$ | | |
| $800.08 = \underline{\hspace{2cm}}$ | | |

Name _____

Date _____

1. Use the area model to represent $\frac{250}{100}$. Complete the number sentence.

a. $\frac{250}{100} = \underline{\hspace{1cm}}$ tenths = $\underline{\hspace{1cm}}$ ones $\underline{\hspace{1cm}}$ tenths = $\underline{\hspace{1cm}}.\underline{\hspace{1cm}}$



- b. In the space below, explain how you determined your answer to part (a).

2. Draw place value disks to represent the following decompositions:

2 ones = $\underline{\hspace{1cm}}$ tenths

| ones | . | tenths | hundredths |
|------|---|--------|------------|
| | | | |

2 tenths = $\underline{\hspace{1cm}}$ hundredths

| ones | . | tenths | hundredths |
|------|---|--------|------------|
| | | | |

1 one 3 tenths = $\underline{\hspace{1cm}}$ tenths

| ones | . | tenths | hundredths |
|------|---|--------|------------|
| | | | |

2 tenths 3 hundredths = $\underline{\hspace{1cm}}$ hundredths

| ones | . | tenths | hundredths |
|------|---|--------|------------|
| | | | |

3. Decompose the units to represent each number as tenths.

a. $1 = \underline{\hspace{1cm}}$ tenths

b. $2 = \underline{\hspace{1cm}}$ tenths

c. $1.7 = \underline{\hspace{1cm}}$ tenths

d. $2.9 = \underline{\hspace{1cm}}$ tenths

e. $10.7 = \underline{\hspace{1cm}}$ tenths

f. $20.9 = \underline{\hspace{1cm}}$ tenths

4. Decompose the units to represent each number as hundredths.

a. $1 = \underline{\hspace{1cm}}$ hundredths

b. $2 = \underline{\hspace{1cm}}$ hundredths

c. $1.7 = \underline{\hspace{1cm}}$ hundredths

d. $2.9 = \underline{\hspace{1cm}}$ hundredths

e. $10.7 = \underline{\hspace{1cm}}$ hundredths

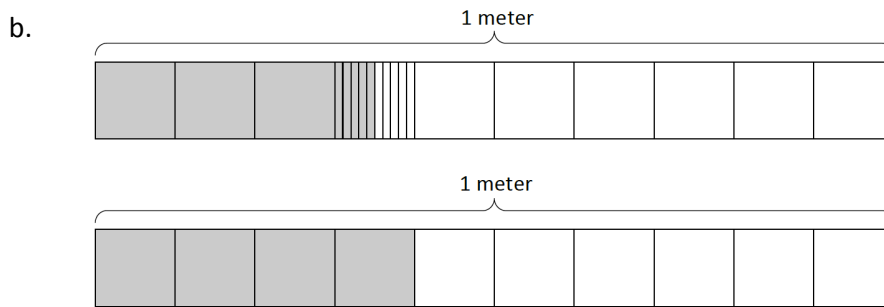
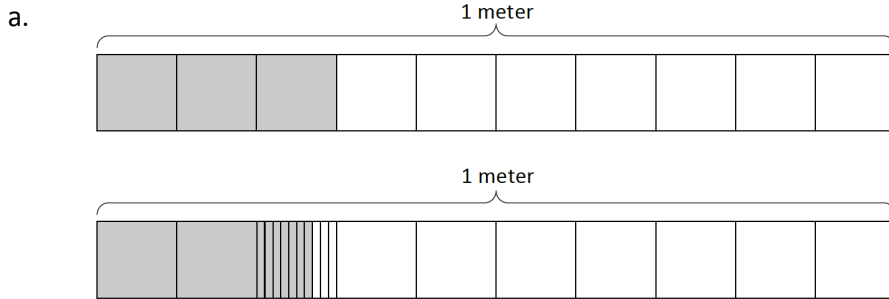
f. $20.9 = \underline{\hspace{1cm}}$ hundredths

5. Complete the chart. The first one has been done for you.

| Decimal | Mixed Number | Tenths | Hundredths |
|---------|-----------------|------------------------------|-------------------------------------|
| 2.1 | $2\frac{1}{10}$ | 21 tenths $\frac{21}{10}$ | 210 hundredths $\frac{210}{100}$ |
| 4.2 | | | |
| 8.4 | | | |
| 10.2 | | | |
| 75.5 | | | |

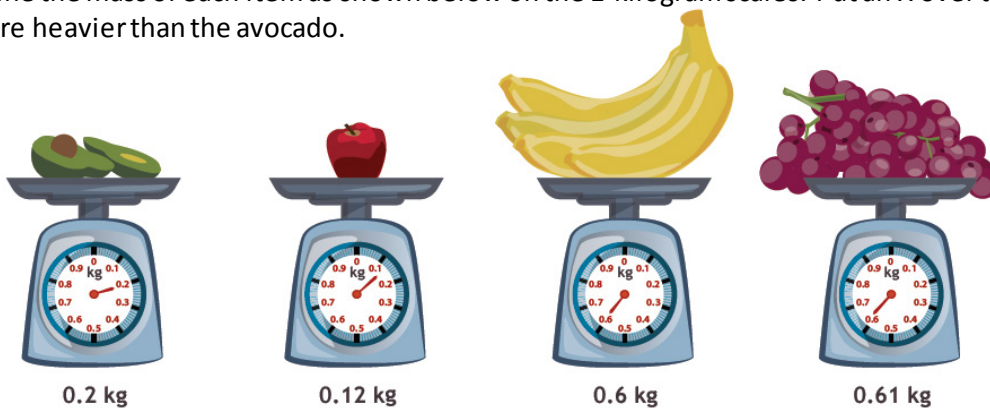
Name _____ Date _____

1. Express the lengths of the shaded parts in decimal form. Write a sentence that compares the two lengths. Use the expression *shorter than* or *longer than* in your sentence.



- c. List all four lengths from least to greatest.

2. a. Examine the mass of each item as shown below on the 1-kilogram scales. Put an X over the items that are heavier than the avocado.



- b. Express the mass of each item on the place value chart.

Mass of Fruit (kilograms)

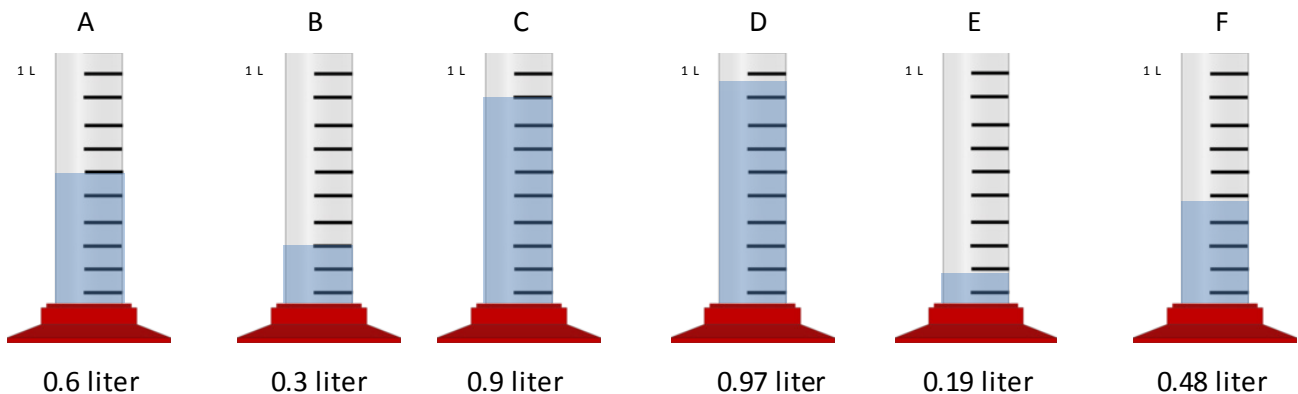
| Fruit | ones | . | tenths | hundredths |
|---------|------|---|--------|------------|
| avocado | | | | |
| apple | | | | |
| bananas | | | | |
| grapes | | | | |

- c. Complete the statements below using the words *heavier than* or *lighter than* in your statements.

The avocado is _____ the apple.

The bunch of bananas is _____ the bunch of grapes.

3. Record the volume of water in each graduated cylinder on the place value chart below.



Volume of Water (liters)

| Cylinder | ones | . | tenths | hundredths |
|----------|------|---|--------|------------|
| A | | | | |
| B | | | | |
| C | | | | |
| D | | | | |
| E | | | | |
| F | | | | |

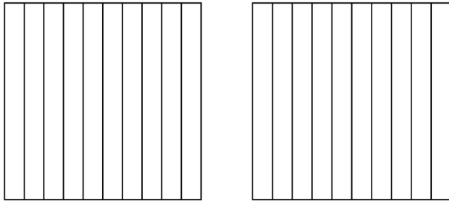
Compare the values using $>$, $<$, or $=$.

- a. 0.9 L _____ 0.6 L
- b. 0.48 L _____ 0.6 L
- c. 0.3 L _____ 0.19 L
- d. Write the volume of water in each graduated cylinder in order from least to greatest.

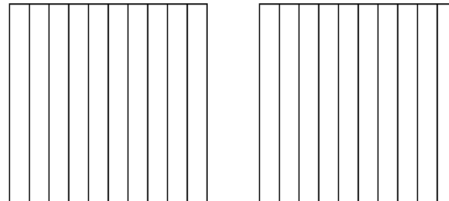
Name _____ Date _____

1. Shade the area models below, decomposing tenths as needed, to represent the pairs of decimal numbers. Fill in the blank with $<$, $>$, or $=$ to compare the decimal numbers.

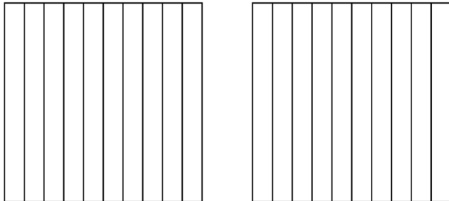
a. 0.23 _____ 0.4



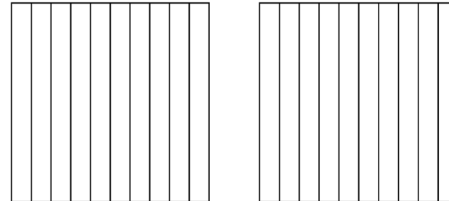
b. 0.6 _____ 0.38



c. 0.09 _____ 0.9

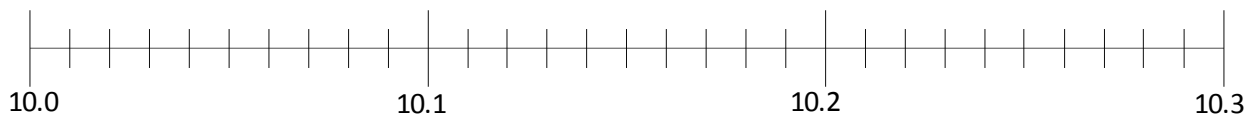


d. 0.70 _____ 0.7

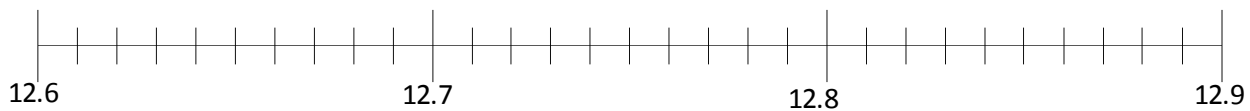


2. Locate and label the points for each of the decimal numbers on the number line. Fill in the blank with $<$, $>$, or $=$ to compare the decimal numbers.

a. 10.03 _____ 10.3



b. 12.68 _____ 12.8



3. Use the symbols $<$, $>$, or $=$ to compare.

a. 3.42 _____ 3.75

b. 4.21 _____ 4.12

c. 2.15 _____ 3.15

d. 4.04 _____ 6.02

e. 12.7 _____ 12.70

f. 1.9 _____ 1.21

4. Use the symbols $<$, $>$, or $=$ to compare. Use pictures as needed to solve.

a. 23 tenths _____ 2.3

b. 1.04 _____ 1 one and 4 tenths

c. 6.07 _____ $6\frac{7}{10}$

d. 0.45 _____ $\frac{45}{10}$

e. $\frac{127}{100}$ _____ 1.72

f. 6 tenths _____ 66 hundredths

Name _____

Date _____

1. Complete the number sentence by expressing each part using hundredths. Model using the place value chart, as shown in part (a).

| ones | tenths | hundredths |
|------|--------|------------------------|
| | • | • • • • • • • • • • |

a. 1 tenth + 5 hundredths = _____ hundredths

| ones | tenths | hundredths |
|------|--------|------------|
| | • | |

b. 2 tenths + 1 hundredth = _____ hundredths

| ones | tenths | hundredths |
|------|--------|------------|
| | • | |

c. 1 tenth + 12 hundredths = _____ hundredths

2. Solve by converting all addends to hundredths before solving.

a. 1 tenth + 3 hundredths = _____ hundredths + 3 hundredths = _____ hundredths

b. 5 tenths + 12 hundredths = _____ hundredths + _____ hundredths = _____ hundredths

c. 7 tenths + 27 hundredths = _____ hundredths + _____ hundredths = _____ hundredths

d. 37 hundredths + 7 tenths = _____ hundredths + _____ hundredths = _____ hundredths

3. Find the sum. Convert tenths to hundredths as needed. Write your answer as a decimal.

a. $\frac{2}{10} + \frac{8}{100}$

b. $\frac{13}{100} + \frac{4}{10}$

c. $\frac{6}{10} + \frac{39}{100}$

d. $\frac{70}{100} + \frac{3}{10}$

4. Solve. Write your answer as a decimal.

a. $\frac{9}{10} + \frac{42}{100}$

b. $\frac{70}{100} + \frac{5}{10}$

c. $\frac{68}{100} + \frac{8}{10}$

d. $\frac{7}{10} + \frac{87}{100}$

5. Beaker A has $\frac{63}{100}$ liter of iodine. It is filled the rest of the way with water up to 1 liter. Beaker B has $\frac{4}{10}$ liter of iodine. It is filled the rest of the way with water up to 1 liter. If both beakers are emptied into a large beaker, how much iodine does the large beaker contain?

Name _____

Date _____

1. Solve. Convert tenths to hundredths before finding the sum. Rewrite the complete number sentence in decimal form. Problems 1(a) and 1(b) are partially completed for you.

| | |
|---|---|
| <p>a. $2\frac{1}{10} + \frac{3}{100} = 2\frac{10}{100} + \frac{3}{100} = \underline{\hspace{2cm}}$</p> <p>$2.1 + 0.03 = \underline{\hspace{2cm}}$</p> | <p>b. $2\frac{1}{10} + 5\frac{3}{100} = 2\frac{10}{100} + 5\frac{3}{100} = \underline{\hspace{2cm}}$</p> |
| <p>c. $3\frac{24}{100} + \frac{7}{10}$</p> | <p>d. $3\frac{24}{100} + 8\frac{7}{10}$</p> |

2. Solve. Then, rewrite the complete number sentence in decimal form.

| | |
|--|--|
| <p>a. $6\frac{9}{10} + 1\frac{10}{100}$</p> | <p>b. $9\frac{9}{10} + 2\frac{45}{100}$</p> |
| <p>c. $2\frac{4}{10} + 8\frac{90}{100}$</p> | <p>d. $6\frac{37}{100} + 7\frac{7}{10}$</p> |

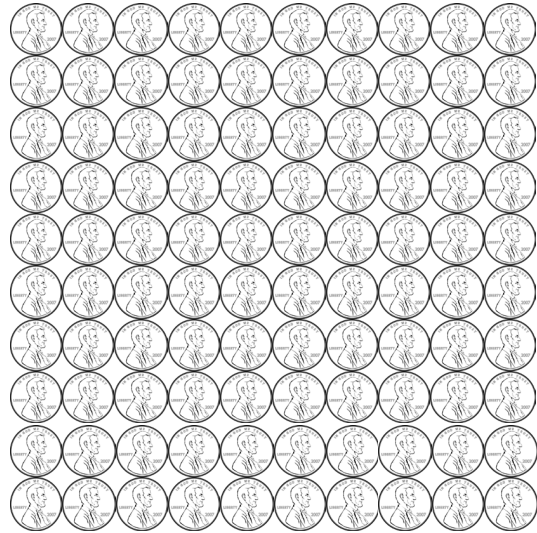
3. Solve by rewriting the number sentence in fraction form. After solving, rewrite the complete number sentence in decimal form.

| | |
|-----------------|------------------|
| a. $6.4 + 5.3$ | b. $6.62 + 2.98$ |
| c. $2.1 + 0.94$ | d. $2.1 + 5.94$ |
| e. $5.7 + 4.92$ | f. $5.68 + 4.9$ |
| g. $4.8 + 3.27$ | h. $17.6 + 3.59$ |

3. An apple orchard sold 140.5 kilograms of apples in the morning and 15.85 kilograms more apples in the afternoon than in the morning. How many total kilograms of apples were sold that day?
4. A team of three ran a relay race. The final runner's time was the fastest, measuring 29.2 seconds. The middle runner's time was 1.89 seconds slower than the final runner's. The starting runner's time was 0.9 seconds slower than the middle runner's. What was the team's total time for the race?

Name _____

Date _____



1. 100 pennies = \$____._____ $100\text{¢} = \frac{\quad}{100}$ dollar
2. 1 penny = \$____._____ $1\text{¢} = \frac{\quad}{100}$ dollar
3. 6 pennies = \$____._____ $6\text{¢} = \frac{\quad}{100}$ dollar
4. 10 pennies = \$____._____ $10\text{¢} = \frac{\quad}{100}$ dollar
5. 26 pennies = \$____._____ $26\text{¢} = \frac{\quad}{100}$ dollar



6. 10 dimes = \$____._____ $100\text{¢} = \frac{\quad}{10}$ dollar
7. 1 dime = \$____._____ $10\text{¢} = \frac{\quad}{10}$ dollar
8. 3 dimes = \$____._____ $30\text{¢} = \frac{\quad}{10}$ dollar
9. 5 dimes = \$____._____ $50\text{¢} = \frac{\quad}{10}$ dollar
10. 6 dimes = \$____._____ $60\text{¢} = \frac{\quad}{10}$ dollar

11. 4 quarters = \$____._____ $100\text{¢} = \frac{\quad}{100}$ dollar
12. 1 quarter = \$____._____ $25\text{¢} = \frac{\quad}{100}$ dollar
13. 2 quarters = \$____._____ $50\text{¢} = \frac{\quad}{100}$ dollar
14. 3 quarters = \$____._____ $75\text{¢} = \frac{\quad}{100}$ dollar



Solve. Give the total amount of money in fraction and decimal form.

15. 3 dimes and 8 pennies

16. 8 dimes and 23 pennies

17. 3 quarters 3 dimes and 5 pennies

18. 236 cents is what fraction of a dollar?

Solve. Express the answer as a decimal.

19. 2 dollars 17 pennies + 4 dollars 2 quarters

20. 3 dollars 8 dimes + 1 dollar 2 quarters 5 pennies

21. 9 dollars 9 dimes + 4 dollars 3 quarters 16 pennies

Name _____

Date _____

Use the RDW process to solve. Write your answer as a decimal.

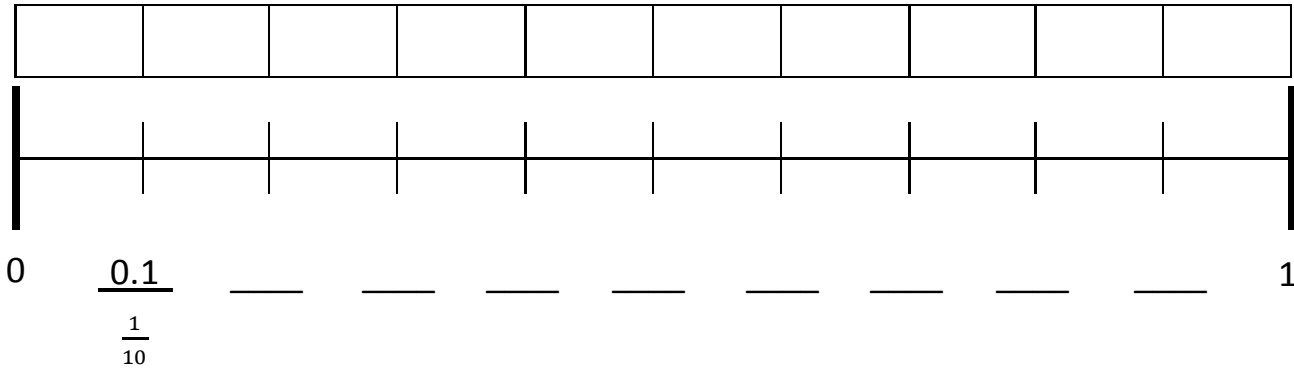
1. Miguel has 1 dollar bill, 2 dimes, and 7 pennies. John has 2 dollar bills, 3 quarters, and 9 pennies. How much money do the two boys have in all?
2. Suilin needs 7 dollars 13 cents to buy a book. In her wallet, she finds 3 dollar bills, 4 dimes, and 14 pennies. How much more money does Suilin need to buy the book?
3. Vanessa has 6 dimes and 2 pennies. Joachim has 1 dollar, 3 dimes, and 5 pennies. Jimmy has 5 dollars and 7 pennies. They want to put their money together to buy a game that costs \$8.00. Do they have enough money to buy the game? If not, how much more money do they need?

4. A pen costs \$2.29. A calculator costs 3 times as much as a pen. How much do a pen and a calculator cost together?
5. Krista has 7 dollars and 32 cents. Malory has 2 dollars and 4 cents. How much money does Krista need to give Malory so that each of them has the same amount of money?

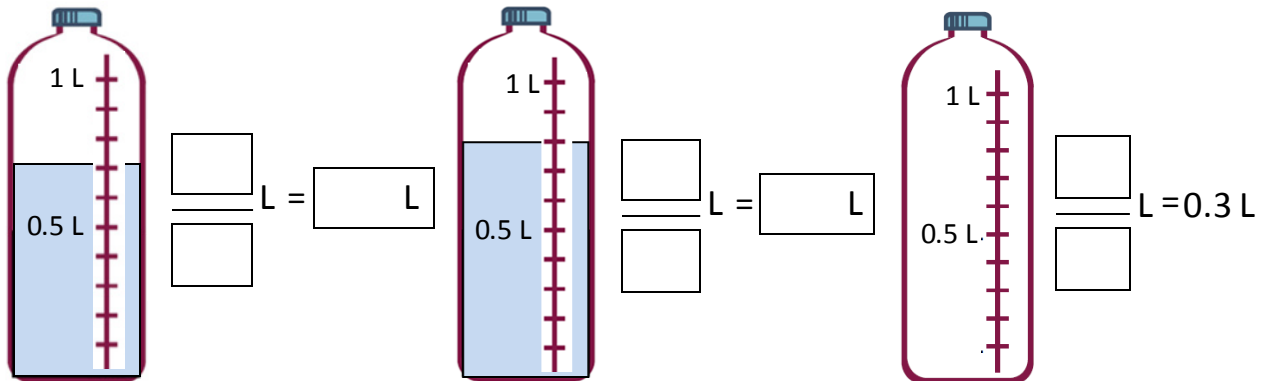
Start of Homework section for Mission 6

Name _____ Date _____

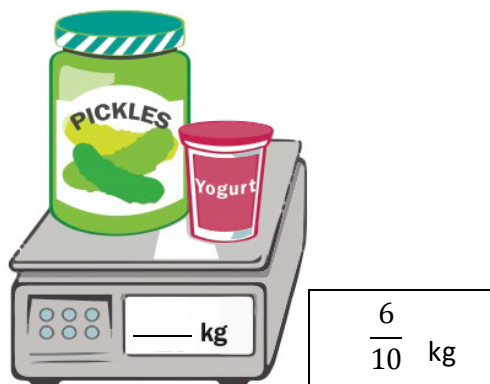
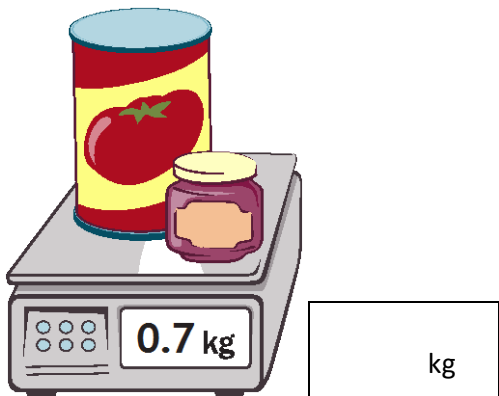
Shade the first 4 units of the tape diagram. Count by tenths to label the number line using a fraction and a decimal for each point. Circle the decimal that represents the shaded part.



2. Write the total amount of water in fraction form and decimal form. Shade the last bottle to show the correct amount.



3. Write the total weight of the food on each scale in fraction form or decimal form.



4. Write the length of the bug in centimeters. (The drawing is not to scale.)



Fraction form: _____ cm

Decimal form: _____ cm

If the bug walks 0.5 cm farther, where will its nose be? _____ cm

5. Fill in the blank to make the sentence true in both fraction and decimal form.

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

0.4 cm + _____ cm = 1.0 cm

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

0.3 cm + _____ cm = 1.0 cm

c. $\frac{8}{10}$ cm + _____ cm = 1 cm

0.8 cm + _____ cm = 1.0 cm

6. Match each amount expressed in unit form to its equivalent fraction and decimal.

| | | |
|----------|----------------|-----|
| 2 tenths | $\frac{4}{10}$ | 0.4 |
| 4 tenths | $\frac{7}{10}$ | 0.6 |
| 6 tenths | $\frac{5}{10}$ | 0.2 |
| 7 tenths | $\frac{2}{10}$ | 0.5 |
| 5 tenths | $\frac{6}{10}$ | 0.7 |

Connections shown: 2 tenths connects to $\frac{2}{10}$, which connects to 0.2.

Name _____

Date _____

1. For each length given below, draw a line segment to match. Express each measurement as an equivalent mixed number.

a. 2.6 cm

b. 3.5 cm

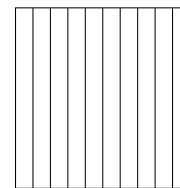
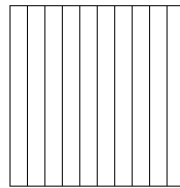
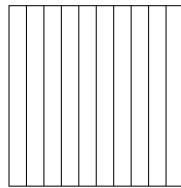
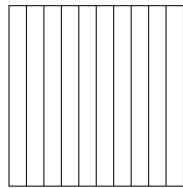
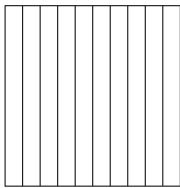
c. 1.7 cm

d. 4.3 cm

e. 2.2 cm

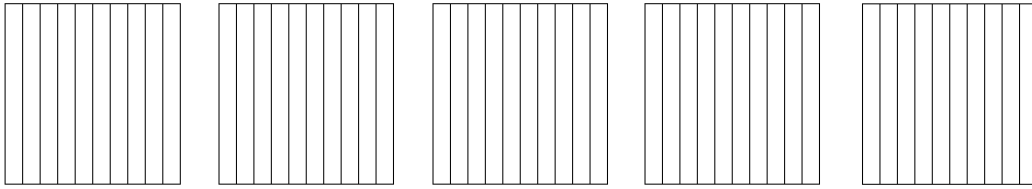
2. Write the following in decimal form. Then, model and rename the number as shown below.

a. 2 ones and 4 tenths = _____

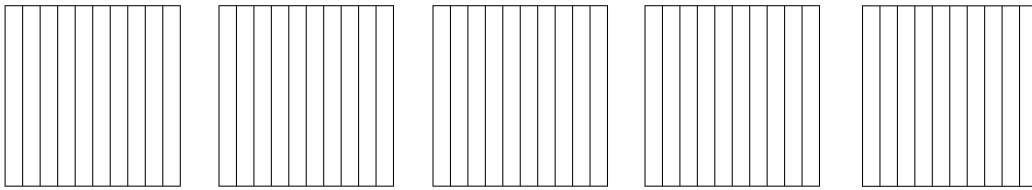


$$2\frac{4}{10} = 2 + \frac{4}{10} = 2 + 0.4 = 2.4$$

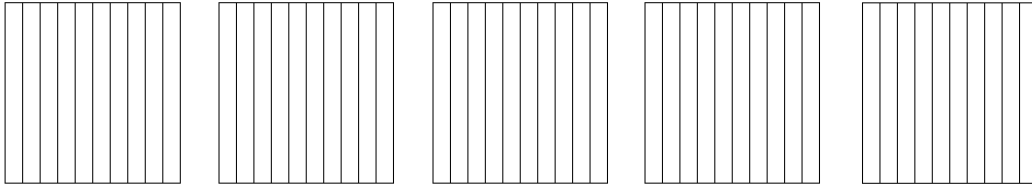
b. 3 ones and 8 tenths = _____



c. $4\frac{1}{10} =$ _____

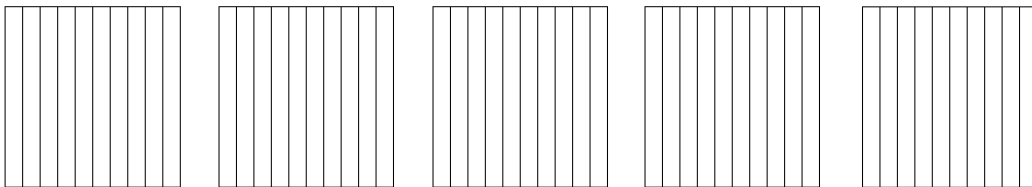


d. $1\frac{4}{10} =$ _____



How much more is needed to get to 5? _____

e. $\frac{33}{10} =$ _____

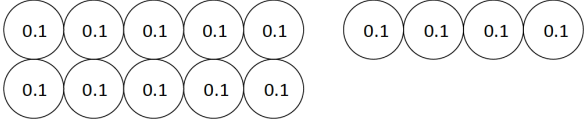
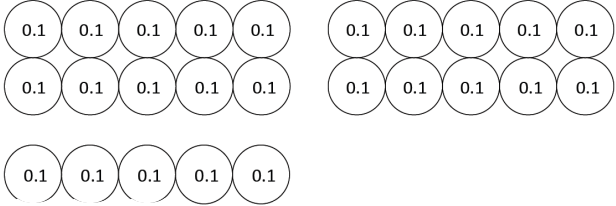


How much more is needed to get to 5? _____

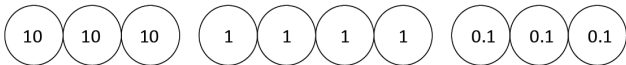
Name _____

Date _____

1. Circle groups of tenths to make as many ones as possible.

| | |
|---|---|
| <p>a. How many tenths in all?</p>  <p>There are _____ tenths.</p> | <p>Write and draw the same number using ones and tenths.</p> <p>Decimal Form: _____</p> <p>How much more is needed to get to 2? _____</p> |
| <p>b. How many tenths in all?</p>  <p>There are _____ tenths.</p> | <p>Write and draw the same number using ones and tenths.</p> <p>Decimal Form: _____</p> <p>How much more is needed to get to 3? _____</p> |

2. Draw disks to represent each number using tens, ones, and tenths. Then, show the expanded form of the number in fraction form and decimal form as shown. The first one has been completed for you.

| | |
|---|----------------------------------|
| <p>a. 3 tens 4 ones 3 tenths</p>  <p>Fraction Expanded Form</p> $(3 \times 10) + (4 \times 1) + (3 \times \frac{1}{10}) = 34 \frac{3}{10}$ <p>Decimal Expanded Form</p> $(3 \times 10) + (4 \times 1) + (3 \times 0.1) = 34.3$ | <p>b. 5 tens 3 ones 7 tenths</p> |
|---|----------------------------------|

c. 3 tens 2 ones 3 tenths

d. 8 tens 4 ones 8 tenths

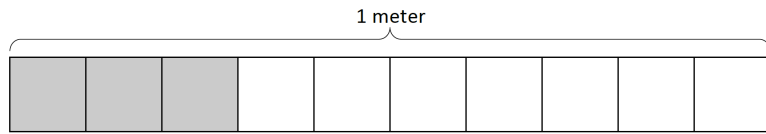
3. Complete the chart.

| Point | Number Line | Decimal Form | Mixed Number (ones and fraction form) | Expanded Form (fraction or decimal form) | How much to get to the next one? |
|-------|-------------|--------------|---------------------------------------|--|----------------------------------|
| a. | | | $4\frac{6}{10}$ | | |
| b. | | | | | 0.5 |
| c. | | | | $(6 \times 10) + (3 \times 1) + (6 \times \frac{1}{10})$ | |
| d. | | | $71\frac{3}{10}$ | | |
| e. | | | | $(9 \times 10) + (9 \times 0.1)$ | |

Name _____

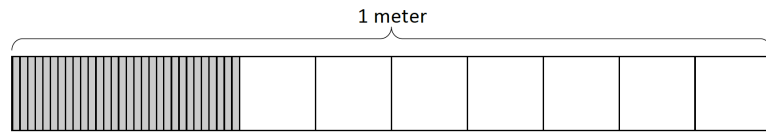
Date _____

1. a. What is the length of the shaded part of the meter stick in centimeters?



- b. What fraction of a meter is 3 centimeters?

- c. In fraction form, express the length of the shaded portion of the meter stick.



- d. In decimal form, express the length of the shaded portion of the meter stick.

- e. What fraction of a meter is 30 centimeters?

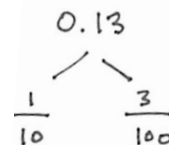
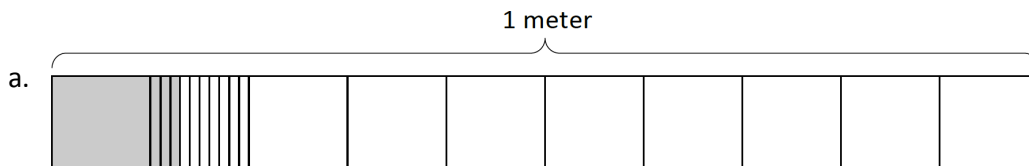
2. Fill in the blanks.

a. 5 tenths = ____ hundredths

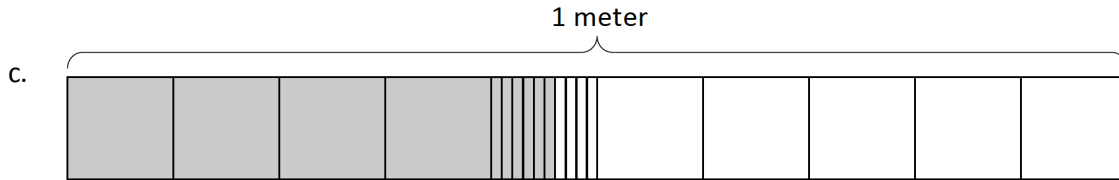
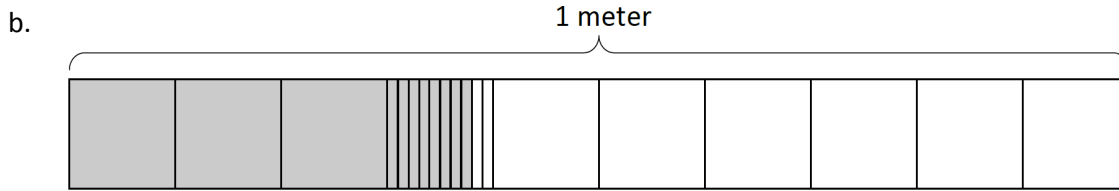
b. $\frac{5}{10}$ m = $\frac{\quad}{100}$ m

c. $\frac{4}{10}$ m = $\frac{40}{\quad}$ m

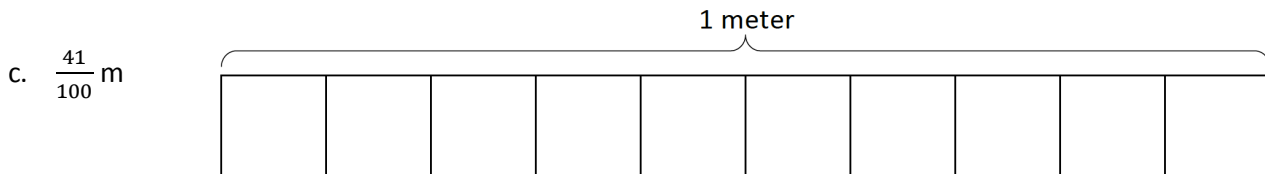
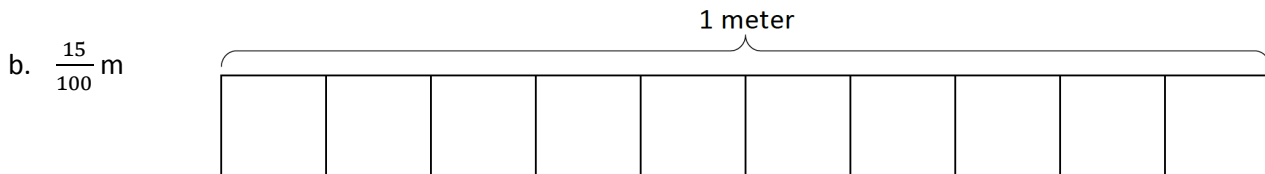
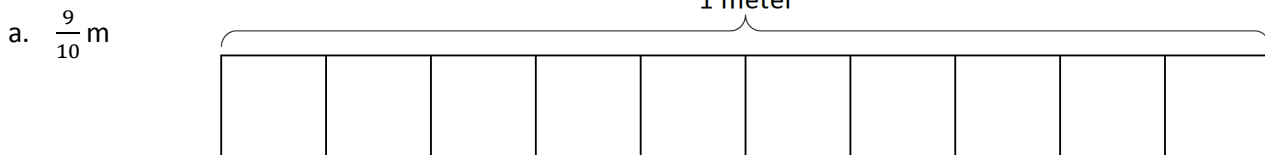
3. Use the model to add the shaded parts as shown. Write a number bond with the total written in decimal form and the parts written as fractions. The first one has been done for you.



$$\frac{1}{10} \text{ m} + \frac{3}{100} \text{ m} = \frac{13}{100} \text{ m} = 0.13 \text{ m}$$



4. On each meter stick, shade in the amount shown. Then, write the equivalent decimal.



5. Draw a number bond, pulling out the tenths from the hundredths, as in Problem 3 of the Homework. Write the total as the equivalent decimal.

a. $\frac{23}{100}$ m

b. $\frac{38}{100}$ m

c. $\frac{82}{100}$

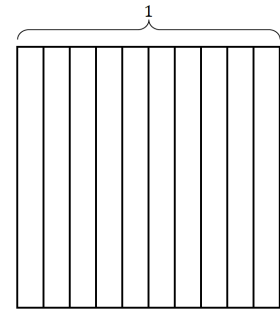
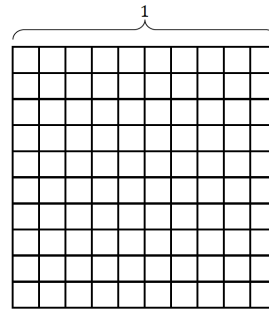
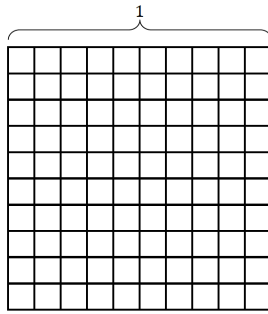
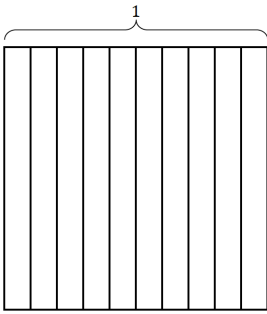
d. $\frac{76}{100}$

Name _____ Date _____

1. Find the equivalent fraction using multiplication or division. Shade the area models to show the equivalency. Record it as a decimal.

a. $\frac{4 \times}{10 \times} = \frac{\quad}{100}$

b. $\frac{60 \div}{100 \div} = \frac{\quad}{10}$

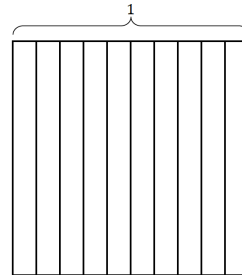


2. Complete the number sentences. Shade the equivalent amount on the area model, drawing horizontal lines to make hundredths.

a. 36 hundredths = _____ tenths + _____ hundredths

Decimal form: _____

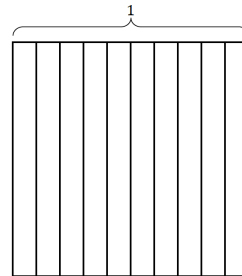
Fraction form: _____



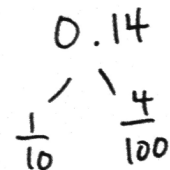
b. 82 hundredths = _____ tenths + _____ hundredths

Decimal form: _____

Fraction form: _____

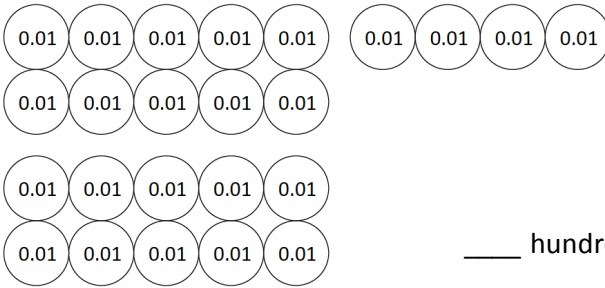


3. Circle hundredths to compose as many tenths as you can. Complete the number sentences. Represent each with a number bond as shown.



_____ hundredths = _____ tenth + _____ hundredths

b.



____ hundredths = ____ tenths + ____ hundredths

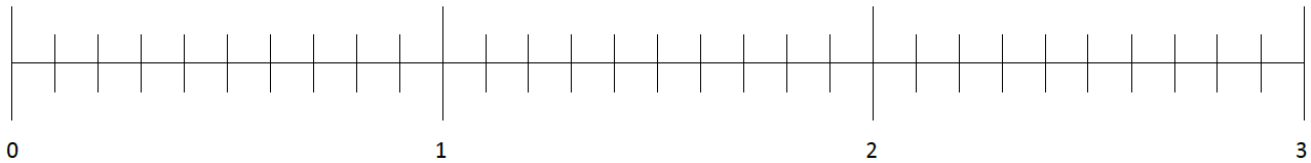
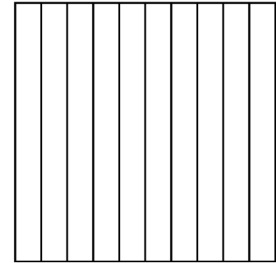
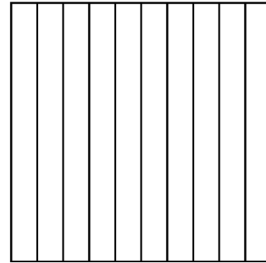
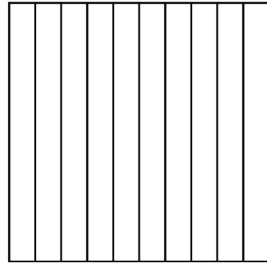
4. Use both tenths and hundredths place value disks to represent each number. Write the equivalent number in decimal, fraction, and unit form.

| | |
|---|---|
| <p>a. $\frac{4}{100} = 0.$ ____</p> <p>____ hundredths</p> | <p>b. $\frac{13}{100} = 0.$ ____</p> <p>____ tenth ____ hundredths</p> |
| <p>c. ____ = 0.41</p> <p>____ hundredths</p> | <p>d. ____ = 0.90</p> <p>____ tenths</p> |
| <p>e. ____ = 0. ____</p> <p>6 tenths 3 hundredths</p> | <p>f. ____ = 0. ____</p> <p>90 hundredths</p> |

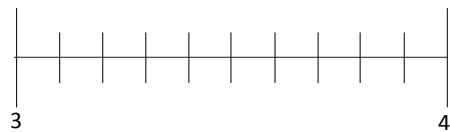
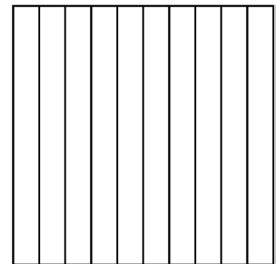
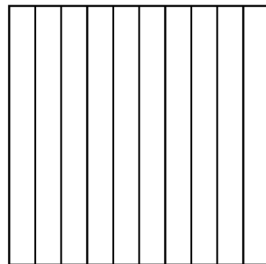
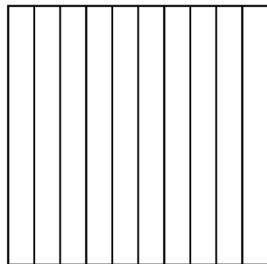
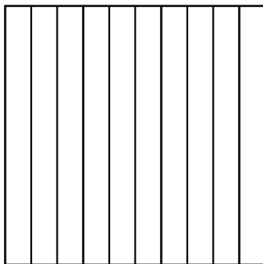
Name _____ Date _____

1. Shade the area models to represent the number, drawing horizontal lines to make hundredths as needed. Locate the corresponding point on the number line. Label with a point, and record the mixed number as a decimal.

a. $2\frac{35}{100} = \underline{\hspace{1cm}}.\underline{\hspace{1cm}}$



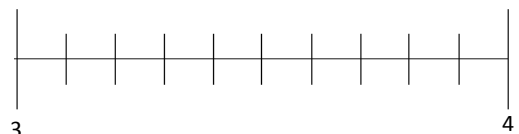
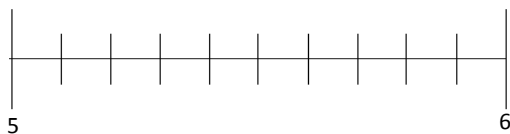
b. $3\frac{17}{100} = \underline{\hspace{1cm}}.\underline{\hspace{1cm}}$



2. Estimate to locate the points on the number lines.

a. $5\frac{90}{100}$

b. $3\frac{25}{100}$



3. Write the equivalent fraction and decimal for each of the following numbers.

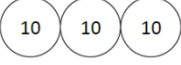
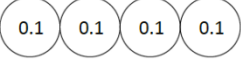
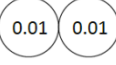
| | |
|-------------------------|-------------------------|
| a. 2 ones 2 hundredths | b. 2 ones 16 hundredths |
| c. 3 ones 7 hundredths | d. 1 one 18 hundredths |
| e. 9 ones 62 hundredths | f. 6 ones 20 hundredths |

4. Draw lines from dot to dot to match the decimal form to both the unit form and fraction form. All unit forms and fractions have at least one match, and some have more than one match.



| | | |
|------------------------|----------|---------------------|
| 4 ones 18 hundredths ● | ● 4.80 ● | ● $4\frac{18}{100}$ |
| 4 ones 8 hundredths ● | ● 4.8 ● | ● 48 |
| 4 ones 8 tenths ● | ● 4.18 ● | ● $4\frac{8}{100}$ |
| 4 tens 8 ones ● | ● 4.08 ● | ● $4\frac{80}{100}$ |
| | ● 48 ● | |

Name _____ Date _____

1. Write a decimal number sentence to identify the total value of the place value disks.

a.  3 tens  4 tenths  2 hundredths

_____ + _____ + _____ = _____

b.  4 hundreds  3 hundredths

_____ + _____ = _____

2. Use the place value chart to answer the following questions. Express the value of the digit in unit form.

| hundreds | tens | ones | . | tenths | hundredths |
|----------|------|------|---|--------|------------|
| 8 | 2 | 7 | | 6 | 4 |

- a. The digit _____ is in the hundreds place. It has a value of _____.
- b. The digit _____ is in the tens place. It has a value of _____.
- c. The digit _____ is in the tenths place. It has a value of _____.
- d. The digit _____ is in the hundredths place. It has a value of _____.

| hundreds | tens | ones | . | tenths | hundredths |
|----------|------|------|---|--------|------------|
| 3 | 4 | 5 | | 1 | 9 |

- e. The digit _____ is in the hundreds place. It has a value of _____.
- f. The digit _____ is in the tens place. It has a value of _____.
- g. The digit _____ is in the tenths place. It has a value of _____.
- h. The digit _____ is in the hundredths place. It has a value of _____.

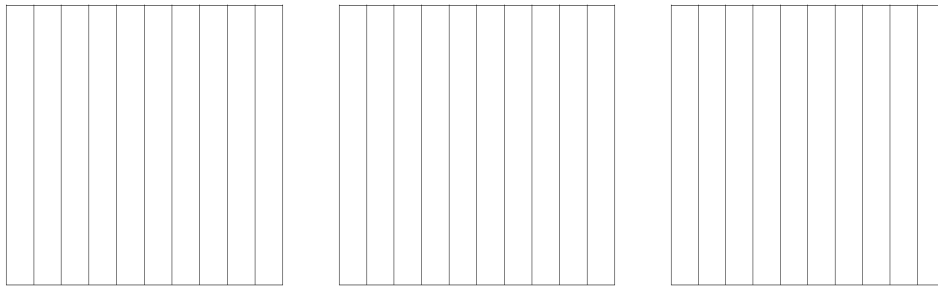
3. Write each decimal as an equivalent fraction. Then, write each number in expanded form, using both decimal and fraction notation. The first one has been done for you.

| Decimal and Fraction Form | Expanded Form | |
|-------------------------------------|---|---|
| | Fraction Notation | Decimal Notation |
| $14.23 = 14\frac{23}{100}$ | $(1 \times 10) + (4 \times 1) + (2 \times \frac{1}{10}) + (3 \times \frac{1}{100})$ $10 + 4 + \frac{2}{10} + \frac{3}{100}$ | $(1 \times 10) + (4 \times 1) + (2 \times 0.1) + (3 \times 0.01)$ $10 + 4 + 0.2 + 0.03$ |
| $25.3 = \underline{\hspace{2cm}}$ | | |
| $39.07 = \underline{\hspace{2cm}}$ | | |
| $40.6 = \underline{\hspace{2cm}}$ | | |
| $208.90 = \underline{\hspace{2cm}}$ | | |
| $510.07 = \underline{\hspace{2cm}}$ | | |
| $900.09 = \underline{\hspace{2cm}}$ | | |

Name _____ Date _____

1. Use the area model to represent $\frac{220}{100}$. Complete the number sentence.

a. $\frac{220}{100} =$ _____ tenths = _____ ones _____ tenths = ____.



- b. In the space below, explain how you determined your answer to part (a).

2. Draw place value disks to represent the following decompositions:

3 ones = _____ tenths

| ones | . | tenths | hundredths |
|------|---|--------|------------|
| | | | |

3 tenths = _____ hundredths

| ones | . | tenths | hundredths |
|------|---|--------|------------|
| | | | |

2 ones 3 tenths = _____ tenths

| ones | . | tenths | hundredths |
|------|---|--------|------------|
| | | | |

3 tenths 3 hundredths = _____ hundredths

| ones | . | tenths | hundredths |
|------|---|--------|------------|
| | | | |

3. Decompose the units to represent each number as tenths.

a. $1 = \underline{\hspace{1cm}}$ tenths

b. $2 = \underline{\hspace{1cm}}$ tenths

c. $1.3 = \underline{\hspace{1cm}}$ tenths

d. $2.6 = \underline{\hspace{1cm}}$ tenths

e. $10.3 = \underline{\hspace{1cm}}$ tenths

f. $20.6 = \underline{\hspace{1cm}}$ tenths

4. Decompose the units to represent each number as hundredths.

a. $1 = \underline{\hspace{1cm}}$ hundredths

b. $2 = \underline{\hspace{1cm}}$ hundredths

c. $1.3 = \underline{\hspace{1cm}}$ hundredths

d. $2.6 = \underline{\hspace{1cm}}$ hundredths

e. $10.3 = \underline{\hspace{1cm}}$ hundredths

f. $20.6 = \underline{\hspace{1cm}}$ hundredths

5. Complete the chart. The first one has been done for you.

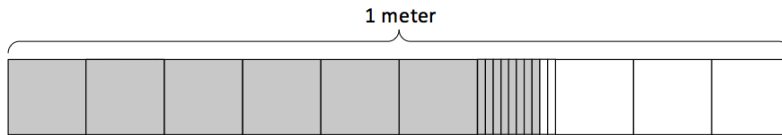
| Decimal | Mixed Number | Tenths | Hundredths |
|---------|------------------|------------------------------|-------------------------------------|
| 4.1 | $4 \frac{1}{10}$ | 41 tenths $\frac{41}{10}$ | 410 hundredths $\frac{410}{100}$ |
| 5.3 | | | |
| 9.7 | | | |
| 10.9 | | | |
| 68.5 | | | |

Name _____

Date _____

1. Express the lengths of the shaded parts in decimal form. Write a sentence that compares the two lengths. Use the expression *shorter than* or *longer than* in your sentence.

a.

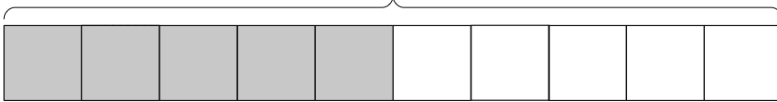


1 meter

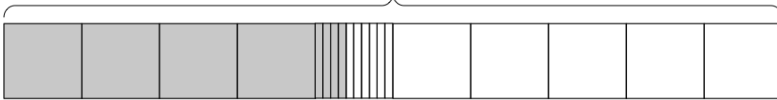


b.

1 meter

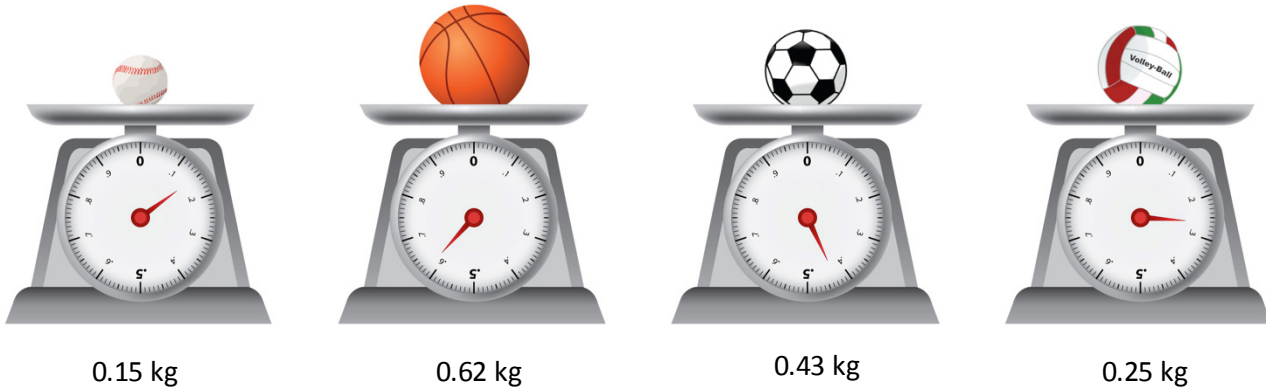


1 meter



- c. List all four lengths from least to greatest.

2. a. Examine the mass of each item as shown below on the 1-kilogram scales. Put an X over the items that are heavier than the volleyball



- b. Express the mass of each item on the place value chart.

Mass of Sport Balls (kilograms)

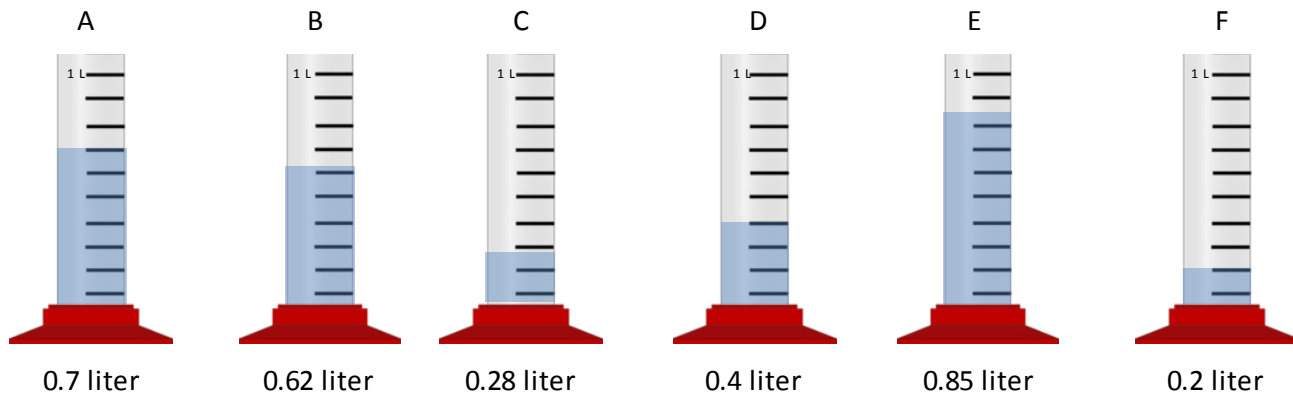
| Sport Balls | ones | . | tenths | hundredths |
|-------------|------|---|--------|------------|
| baseball | | | | |
| volleyball | | | | |
| basketball | | | | |
| soccer ball | | | | |

- c. Complete the statements below using the words *heavier than* or *lighter than* in your statements.

The soccer ball is _____ the baseball.

The volleyball is _____ the basketball.

3. Record the volume of water in each graduated cylinder on the place value chart below.



Volume of Water (liters)

| Cylinder | ones | . | tenths | hundredths |
|----------|------|---|--------|------------|
| A | | | | |
| B | | | | |
| C | | | | |
| D | | | | |
| E | | | | |
| F | | | | |

Compare the values using $>$, $<$, or $=$.

a. $0.4 \text{ L} \underline{\hspace{1cm}} 0.2 \text{ L}$

b. $0.62 \text{ L} \underline{\hspace{1cm}} 0.7 \text{ L}$

c. $0.2 \text{ L} \underline{\hspace{1cm}} 0.28 \text{ L}$

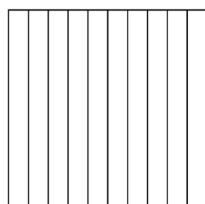
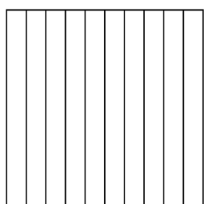
d. Write the volume of water in each graduated cylinder in order from least to greatest.

Name _____

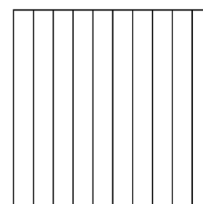
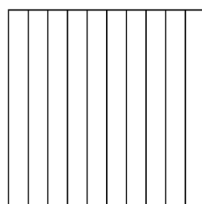
Date _____

1. Shade the parts of the area models below, decomposing tenths as needed, to represent the pairs of decimal numbers. Fill in the blank with $<$, $>$, or $=$ to compare the decimal numbers.

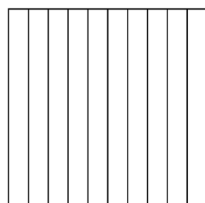
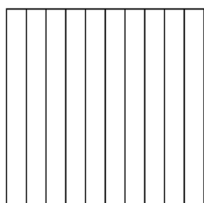
a. 0.19 _____ 0.3



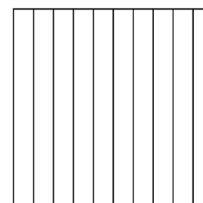
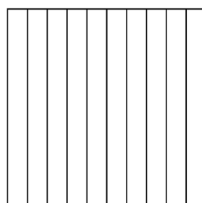
b. 0.6 _____ 0.06



c. 1.8 _____ 1.53

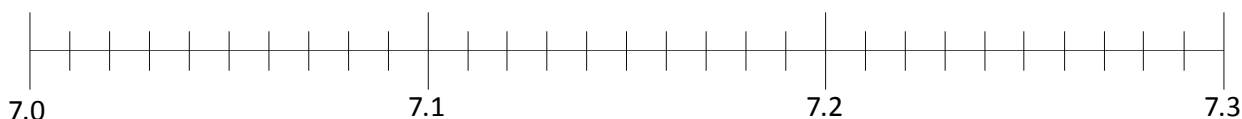


d. 0.38 _____ 0.7

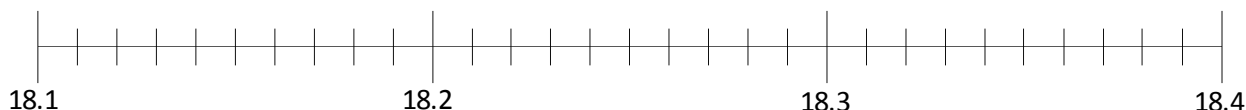


2. Locate and label the points for each of the decimal numbers on the number line. Fill in the blank with $<$, $>$, or $=$ to compare the decimal numbers.

a. 7.2 _____ 7.02



b. 18.19 _____ 18.3



3. Use the symbols $<$, $>$, or $=$ to compare.

a. 2.68 _____ 2.54

b. 6.37 _____ 6.73

c. 9.28 _____ 7.28

d. 3.02 _____ 3.2

e. 13.1 _____ 13.10

f. 5.8 _____ 5.92

4. Use the symbols $<$, $>$, or $=$ to compare. Use pictures as needed to solve.

a. 57 tenths _____ 5.7

b. 6.2 _____ 6 ones and 2 hundredths

c. 33 tenths _____ 33 hundredths

d. 8.39 _____ $8\frac{39}{10}$

e. $\frac{236}{100}$ _____ 2.36

f. 3 tenths _____ 22 hundredths

Name _____

Date _____

1. Complete the number sentence by expressing each part using hundredths. Model using the place value chart, as shown in part (a).

| ones | tenths | hundredths |
|------|--------|-----------------|
| | • | • • • • • • • • |

a. 1 tenth + 8 hundredths = _____ hundredths

| ones | tenths | hundredths |
|------|--------|------------|
| | | |

b. 2 tenths + 3 hundredths = _____ hundredths

| ones | tenths | hundredths |
|------|--------|------------|
| | | |

c. 1 tenth + 14 hundredths = _____ hundredths

2. Solve by converting all addends to hundredths before solving.

a. 1 tenth + 2 hundredths = _____ hundredths + 2 hundredths = _____ hundredths

b. 4 tenths + 11 hundredths = _____ hundredths + _____ hundredths = _____ hundredths

c. 8 tenths + 25 hundredths = _____ hundredths + _____ hundredths = _____ hundredths

d. 43 hundredths + 6 tenths = _____ hundredths + _____ hundredths = _____ hundredths

3. Find the sum. Convert tenths to hundredths as needed. Write your answer as a decimal.

a. $\frac{3}{10} + \frac{7}{100}$

b. $\frac{16}{100} + \frac{5}{10}$

c. $\frac{5}{10} + \frac{40}{100}$

d. $\frac{20}{100} + \frac{8}{10}$

4. Solve. Write your answer as a decimal.

a. $\frac{5}{10} + \frac{53}{100}$

b. $\frac{27}{100} + \frac{8}{10}$

c. $\frac{4}{10} + \frac{78}{100}$

d. $\frac{98}{100} + \frac{7}{10}$

5. Cameron measured $\frac{65}{100}$ inch of rainwater on the first day of April. On the second day of April, he measured $\frac{83}{100}$ inch of rainwater. How many total inches of rainwater did Cameron measure on the first two days of April?

Name _____

Date _____

1. Solve. Convert tenths to hundredths before finding the sum. Rewrite the complete number sentence in decimal form. Problems 1(a) and 1(b) are partially completed for you.

| | |
|---|--|
| <p>a. $5\frac{2}{10} + \frac{7}{100} = 5\frac{20}{100} + \frac{7}{100} = \underline{\hspace{2cm}}$</p> <p>$5.2 + 0.07 = \underline{\hspace{2cm}}$</p> | <p>b. $5\frac{2}{10} + 3\frac{7}{100} = 8\frac{20}{100} + \frac{7}{100} = \underline{\hspace{2cm}}$</p> |
| <p>c. $6\frac{5}{10} + \frac{1}{100}$</p> | <p>d. $6\frac{5}{10} + 7\frac{1}{100}$</p> |

2. Solve. Then, rewrite the complete number sentence in decimal form.

| | |
|--|--|
| <p>a. $4\frac{9}{10} + 5\frac{10}{100}$</p> | <p>b. $8\frac{7}{10} + 2\frac{65}{100}$</p> |
| <p>c. $7\frac{3}{10} + 6\frac{87}{100}$</p> | <p>d. $5\frac{48}{100} + 7\frac{8}{10}$</p> |

3. Solve by rewriting the number sentence in fraction form. After solving, rewrite the complete number sentence in decimal form.

| | |
|--|-------------------|
| a. $2.1 + 0.87 = 2\frac{1}{10} + \frac{87}{100}$ | b. $7.2 + 2.67$ |
| c. $7.3 + 1.8$ | d. $7.3 + 1.86$ |
| e. $6.07 + 3.93$ | f. $6.87 + 3.9$ |
| g. $8.6 + 4.67$ | h. $18.62 + 14.7$ |

Date _____

2. A deli sliced 22.6 kilograms of roast beef one week and 13.54 kilograms the next. How many total kilograms of roast beef did the deli slice in the two weeks?

3. The school cafeteria served 125.6 liters of milk on Monday and 5.34 more liters of milk on Tuesday than on Monday. How many total liters of milk were served on Monday and Tuesday?
4. Max, Maria, and Armen were a team in a relay race. Max ran his part in 17.3 seconds. Maria was 0.7 seconds slower than Max. Armen was 1.5 seconds slower than Maria. What was the total time for the team?