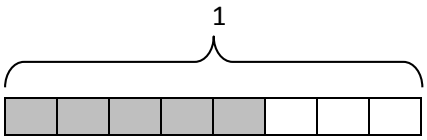
Name _____ Date _____

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. $\frac{5}{8}$



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

b. $\frac{9}{10}$

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

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. $\frac{7}{8}$

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

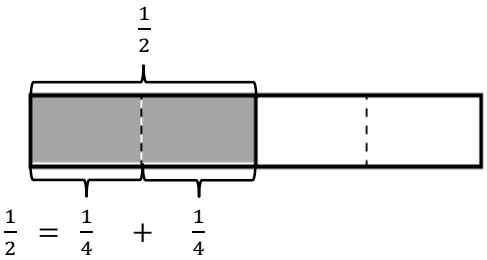
   c. $\frac{7}{5}$

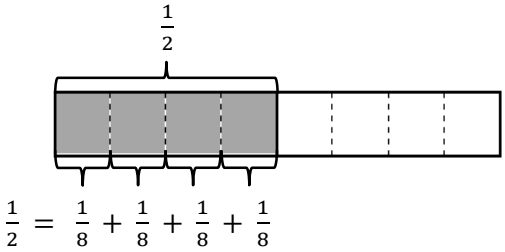
   d. $1\frac{1}{3}$

Name _____ Date _____

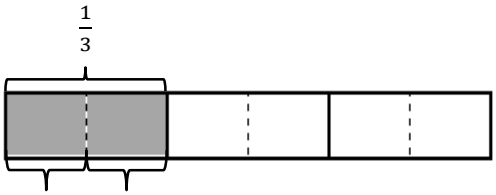
1. The total length of each tape diagram represents 1. Decompose the shaded unit fractions as the sum of smaller unit fractions in at least two different ways. The first one has been done for you.

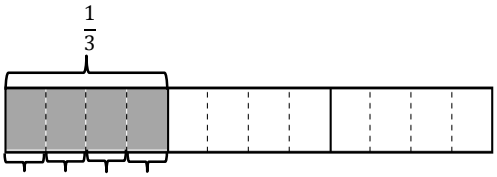
a.



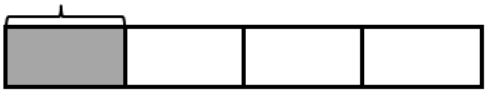


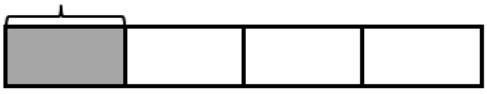
b.



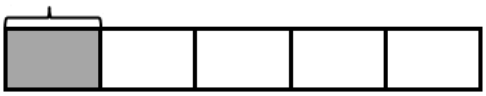


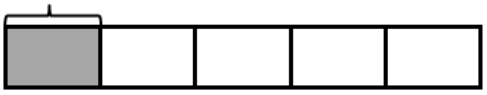
c.





d.





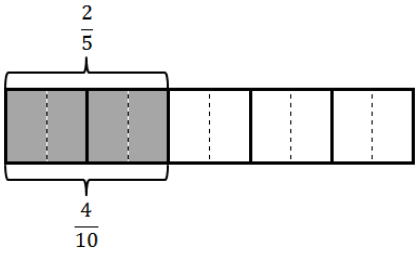
2. The total length of each tape diagram represents 1. Decompose the shaded fractions as the sum of smaller unit fractions in at least two different ways.

a.

b.

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

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



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

Modified from original

c. $\frac{3}{4} = \frac{6}{8}$

d. $\frac{3}{4} = \frac{9}{12}$

4. Show that $\frac{1}{2}$ is equivalent to $\frac{4}{8}$ using a tape diagram and a number sentence.

5. Show that $\frac{2}{3}$ is equivalent to $\frac{6}{9}$ using a tape diagram and a number sentence.

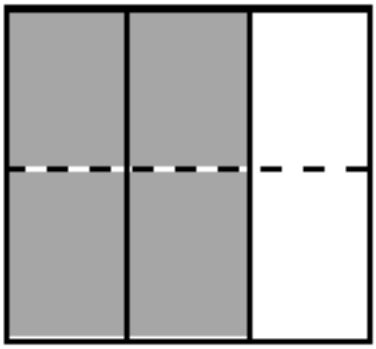
6. Show that $\frac{4}{6}$ is equivalent to $\frac{8}{12}$ using a tape diagram and a number sentence.

Name _____ Date _____

Each rectangle represents 1.

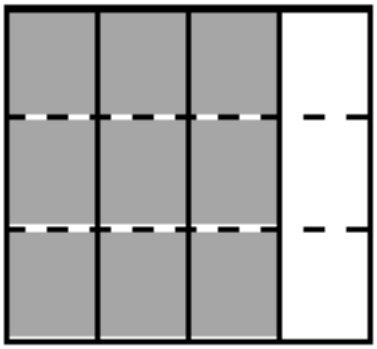
1. The shaded fractions have been decomposed into smaller units. Express the equivalent fractions in a number sentence using multiplication. The first one has been done for you.

a.

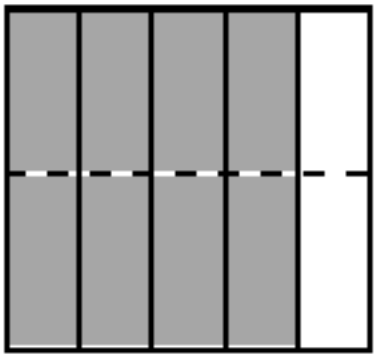


$$\frac{2}{3} = \frac{2 \times 2}{3 \times 2} = \frac{4}{6}$$

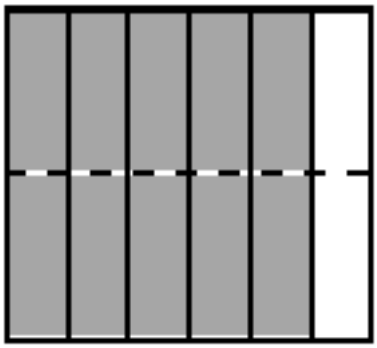
b.



c.

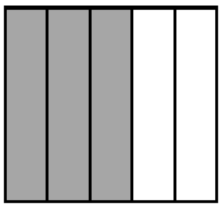


d.

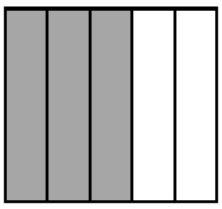


2. Decompose the shaded fractions into smaller units, as given below. Express the equivalent fractions in a number sentence using multiplication.

a. Decompose into tenths.



b. Decompose into fifteenths.



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

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

b. $\frac{2}{3} = \frac{8}{12}$

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

d. $\frac{4}{6} = \frac{8}{12}$

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

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

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

c. $\frac{7}{6}$

d. $\frac{12}{7}$

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

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

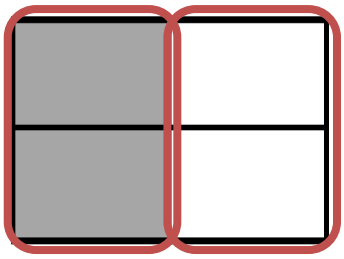
c. $\frac{4}{5} = \frac{12}{10}$

d. $\frac{4}{6} = \frac{12}{18}$

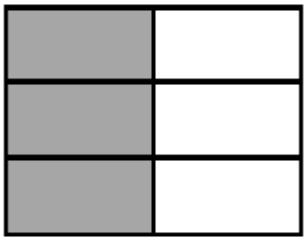
Name _____ Date _____

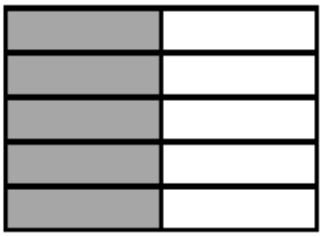
Each rectangle represents 1.

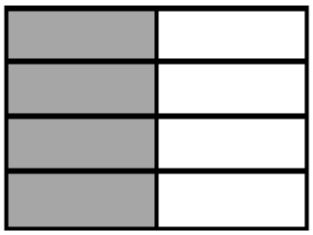
1. Compose the shaded fractions into larger fractional units. Express the equivalent fractions in a number sentence using division. The first one has been done for you.

a. 

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

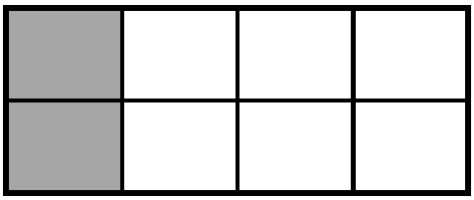
b. 

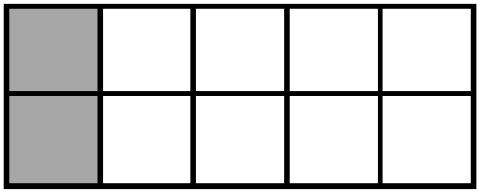
c. 

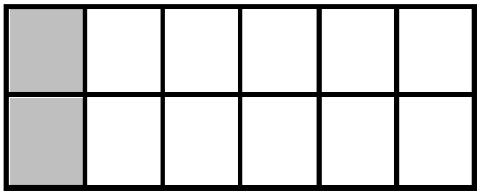
d. 

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

a. 

b. 

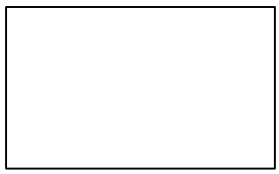
c. 

d. 

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

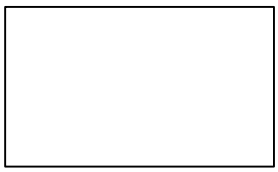
f. What happened to the total number of units in the whole when you composed the fraction?

3. a. In the first area model, show 2 sixths. In the second area model, show 3 ninths. Show how both fractions can be 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 2 eighths. In the second area model, show 3 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.

Name _____ Date _____

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

   a. 1 fourth _____ 1 fifth

   b. 3 fourths _____ 3 fifths

   c. 1 tenth _____ 1 twelfth

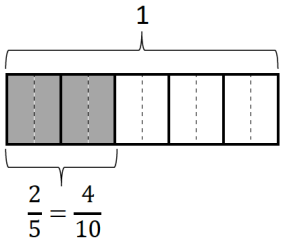
   d. 7 tenths _____ 7 twelfths

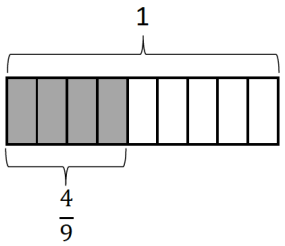
2. Compare by reasoning about the following pairs of fractions with the same or related numerators. Use >, <, or =. Explain your thinking using words, pictures, or numbers. Problem 2(b) has been done for you.

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

   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. $\frac{7}{11}$ _____ $\frac{7}{13}$

   d. $\frac{6}{7}$ _____ $\frac{12}{15}$

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

   a. $\frac{2}{3}$ _____ $\frac{5}{6}$

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

   c. $1\frac{3}{4}$ _____ $1\frac{7}{12}$

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

a. $\frac{2}{3}$ _____ $\frac{5}{6}$

b. $\frac{3}{8}$ _____ $\frac{1}{4}$

c. $\frac{2}{6}$ _____ $\frac{5}{12}$

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

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

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

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

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

d. $\frac{2}{3}$ _____ $\frac{11}{15}$

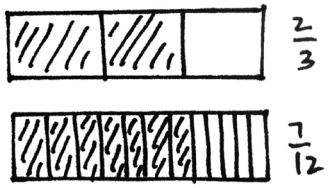
e. $\frac{3}{4}$ _____ $\frac{11}{12}$

f. $\frac{7}{3}$ _____ $\frac{7}{4}$

g. $1\frac{1}{3}$ _____ $1\frac{2}{9}$

h. $1\frac{2}{3}$ _____ $1\frac{4}{7}$

6. Timmy drew the picture to the right and claimed that $\frac{2}{3}$ is less than $\frac{7}{12}$. Evan says he thinks $\frac{2}{3}$ is greater than $\frac{7}{12}$. Who is correct? Support your answer with a picture.



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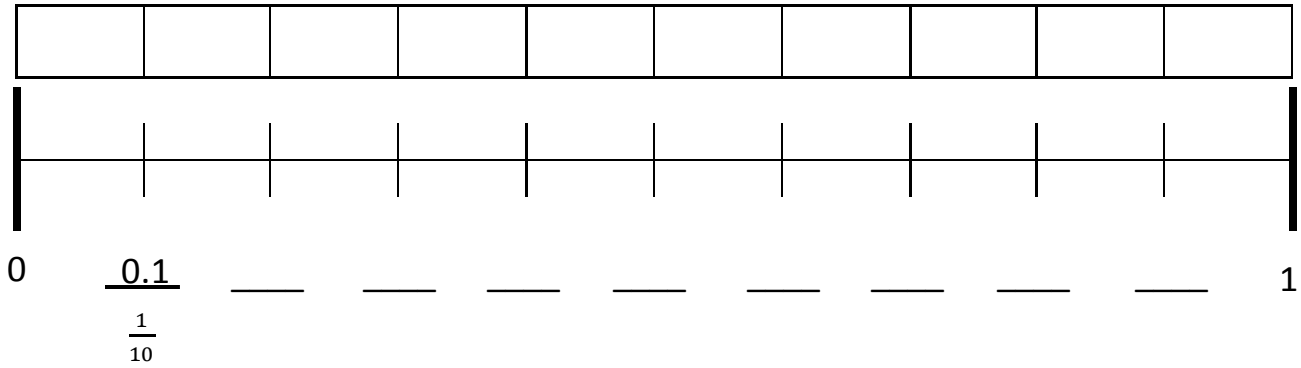
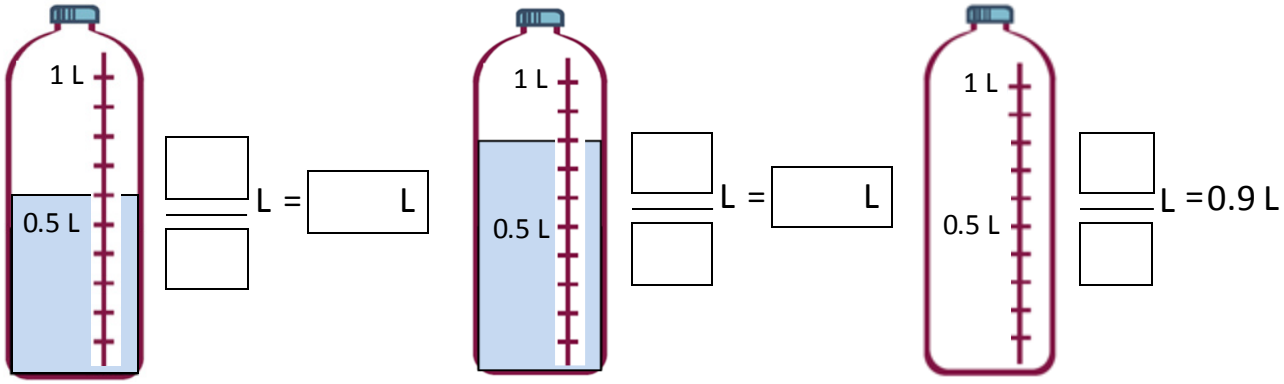
Name _____ Date _____

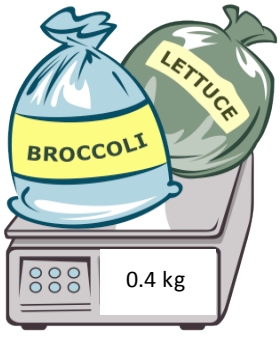
1. Shade the first 7 units of the tape diagram. Count by tenths to label the number line using a fraction and a decimal for each point. Circle the decimal that represents the shaded part.



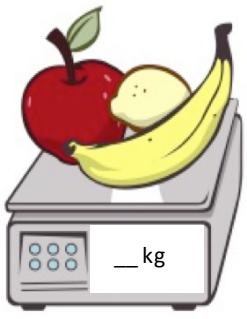
2. Write the total amount of water in fraction form and decimal form. Shade the last bottle to show the correct amount.



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



kg



$\frac{8}{10}$ kg

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

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

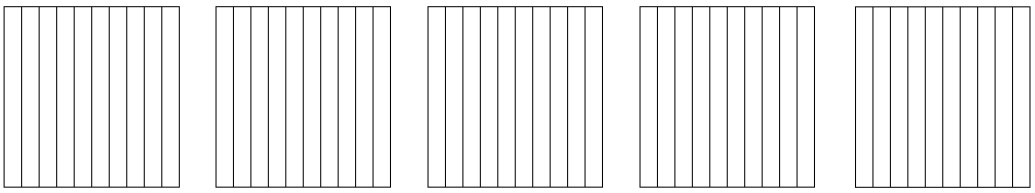
   c. 3.7 cm

   d. 4.2 cm

   e. 2.5 cm

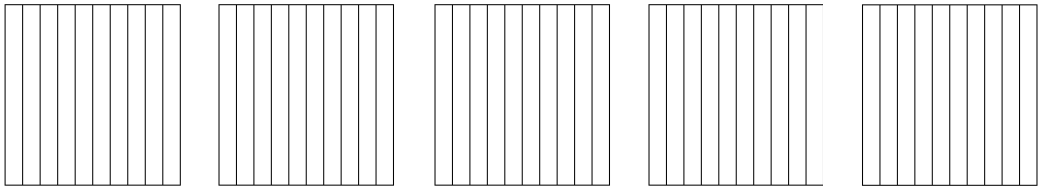
2. Write the following as equivalent decimals. Then, model and rename the number as shown below.

   a. 2 ones and 6 tenths = _____

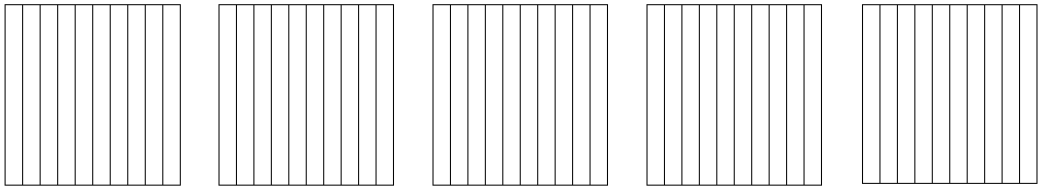


$2\frac{6}{10} = 2 + \frac{6}{10} = 2 + 0.6 = 2.6$

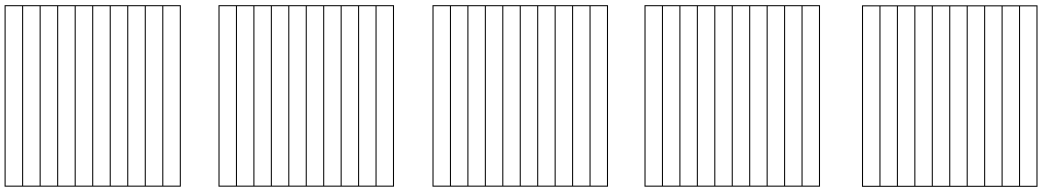
b. 4 ones and 2 tenths = _____



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

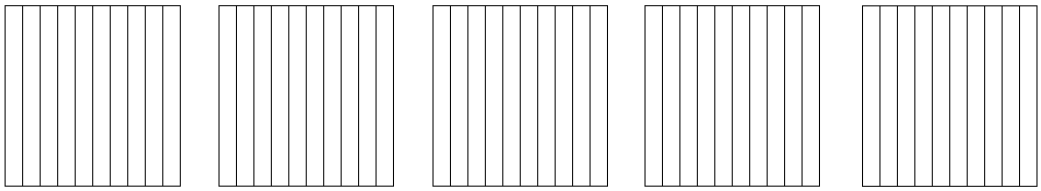


d. $2\frac{5}{10}$ = _____



How much more is needed to get to 5? _____

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

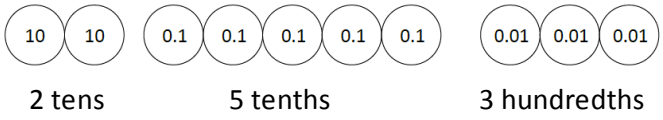


How much more is needed to get to 5? _____

Name _____ Date _____

1. 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 _____.

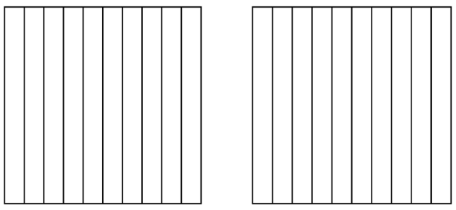
3. Write each decimal as an equivalent fraction. Then, write each number in expanded form, using both decimal and fraction notation. The first one has been done for you.

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 = _____		
38.09 = _____		
50.2 = _____		
301.07 = _____		
620.80 = _____		
800.08 = _____		

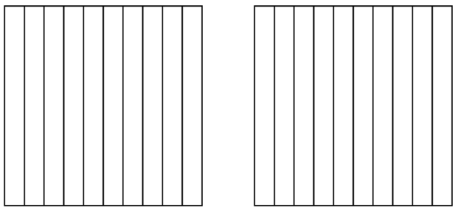
Name _____ Date _____

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.

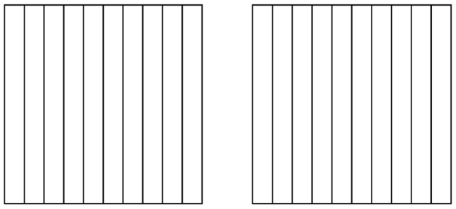
a. 0.23 _____ 0.4



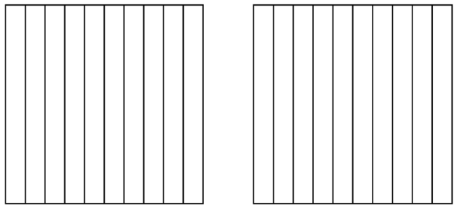
b. 0.6 _____ 0.38



c. 0.09 _____ 0.9

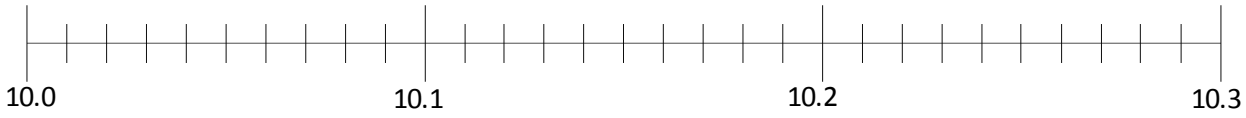


d. 0.70 _____ 0.7

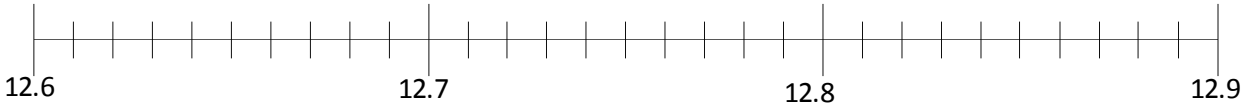


2. Locate and label the points for each of the decimal numbers on the number line. Fill in the blank with <, >, or = to compare the decimal numbers.

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 _____ $6\frac{7}{10}$

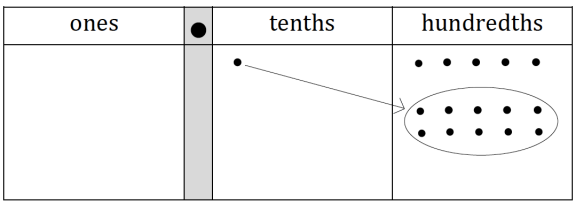
d. 0.45 _____ $\frac{45}{10}$

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

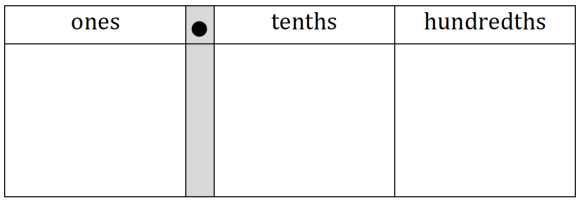
f. 6 tenths _____ 66 hundredths

Name _____ Date _____

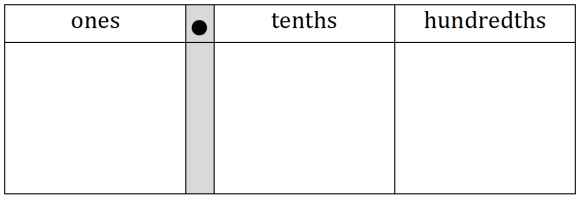
1. Complete the number sentence by expressing each part using hundredths. Model using the place value chart, as shown in part (a).



a. 1 tenth + 5 hundredths = _____ hundredths



b. 2 tenths + 1 hundredth = _____ 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. $\frac{7}{10} + \frac{87}{1v00}$

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?