EUREKA MATH PUSD

A Story of Units

Pleasanton Unified School District Mathematics Curriculum

Grade 4 • MODULE 6

Decimal Fractions

Homework

Video tutorials: http://embarc.online

Info for parents: http://bit.ly/pusdmath

Version 3

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GRADE 4 • MODULE 6

Decimal Fractions

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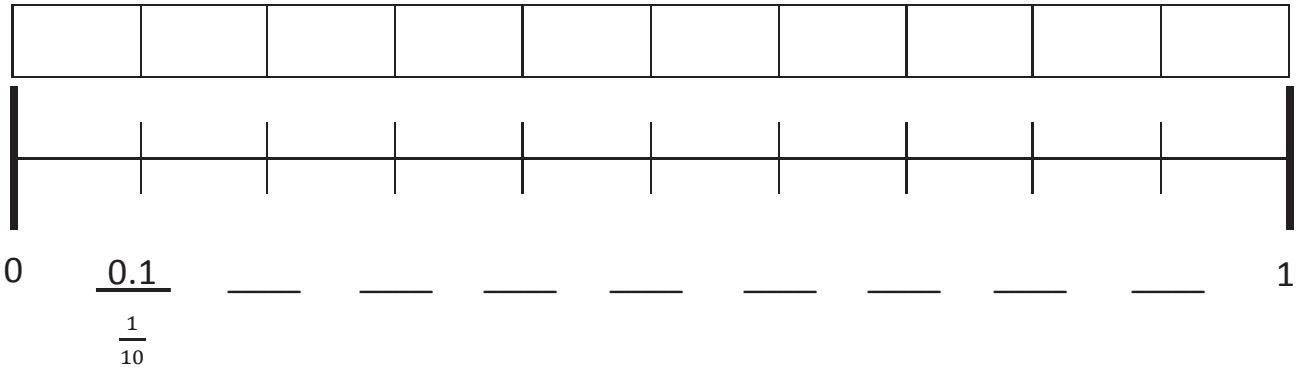
Name _____ Date _____

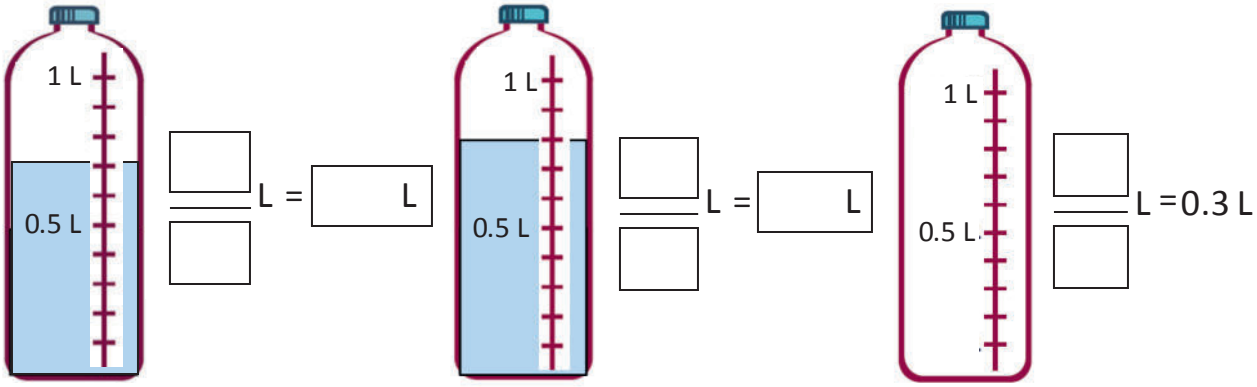
Shade the first 4 units of the tape diagram. Count by tenths to label the number line using a fraction and a decimal for each point. Circle the decimal that represents the shaded part.



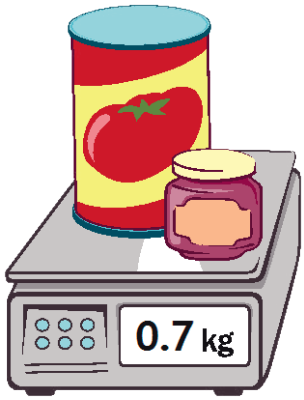
0 0.1 ___ ___ ___ ___ ___ ___ ___ ___ 1

$\frac{1}{10}$

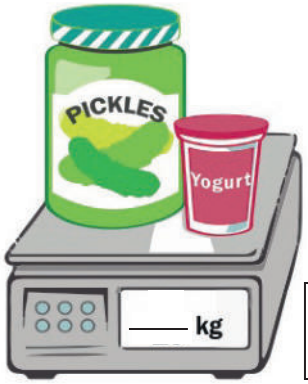
2. Write the total amount of water in fraction form and decimal form. Shade the last bottle to show the correct amount.



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



kg



$\frac{6}{10}$ kg

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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

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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

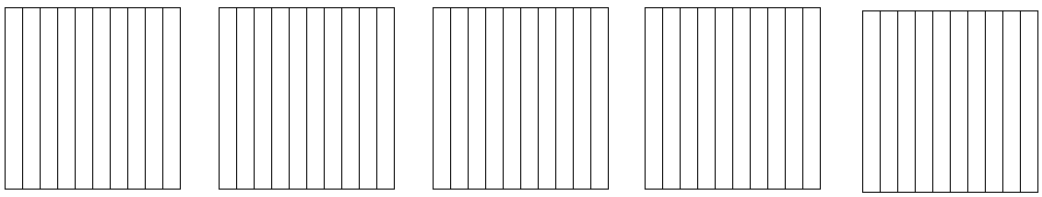
   c. 1.7 cm

   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 = _____



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

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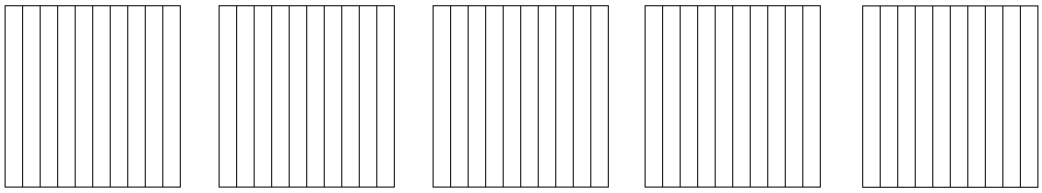
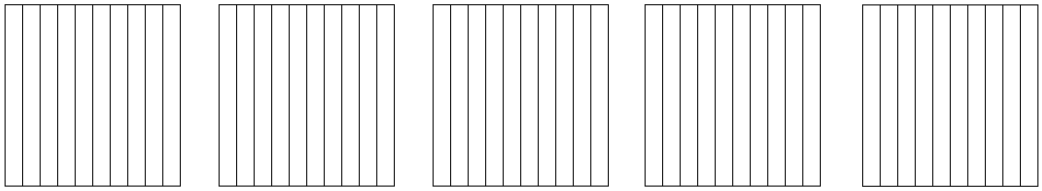
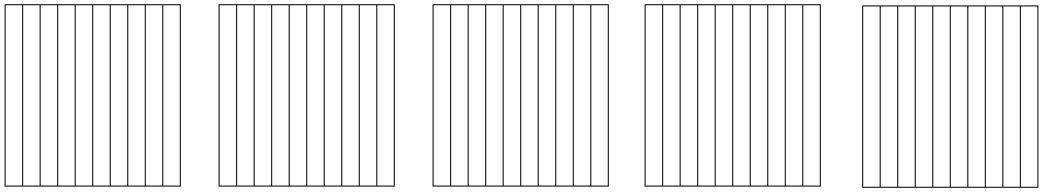
b. 3 ones and 8 tenths = _____



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

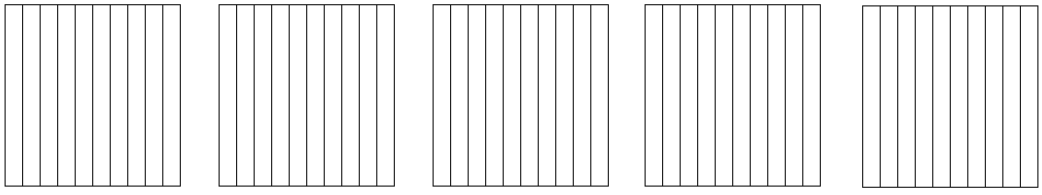


d. $1\frac{4}{10}$ = _____



How much more is needed to get to 5? _____

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



How much more is needed to get to 5? _____

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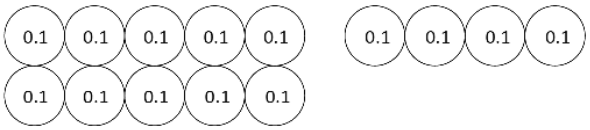
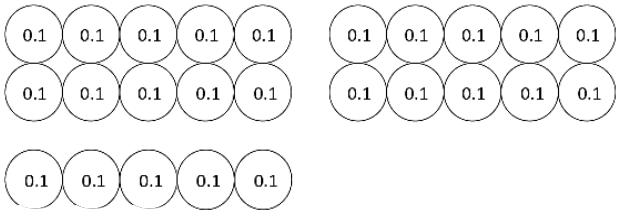
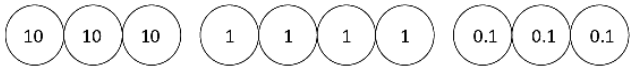
Name _____ Date _____

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

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

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.

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

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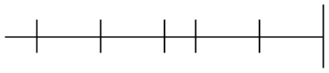
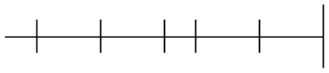
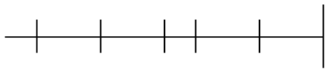
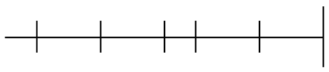
c. 3 tens 2 ones 3 tenths	d. 8 tens 4 ones 8 tenths

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.				$(9 \times 10) + (9 \times 0.1)$	

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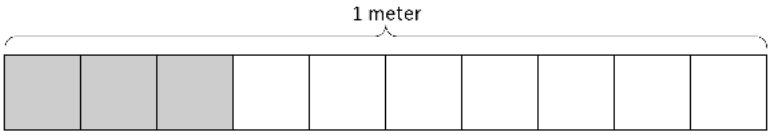
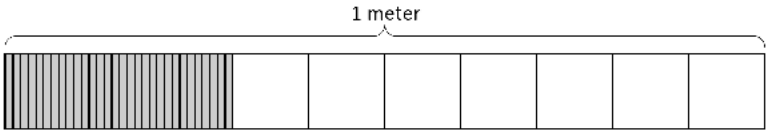
Name _____ Date _____

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.

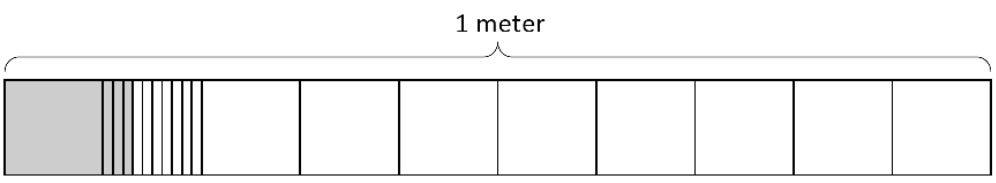
a. 5 tenths = ____ hundredths

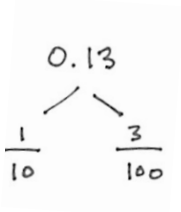
b. $\frac{5}{10}$ m = $\frac{\quad}{100}$ m

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.

a.





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

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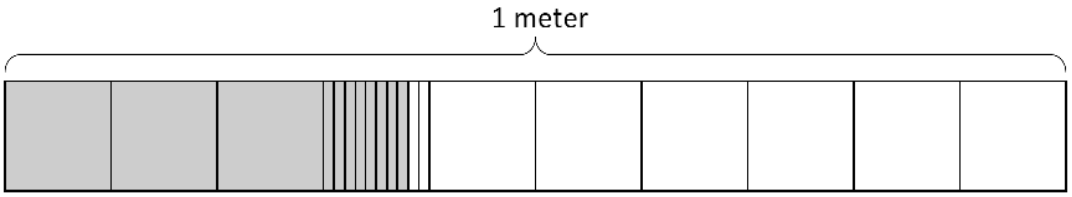
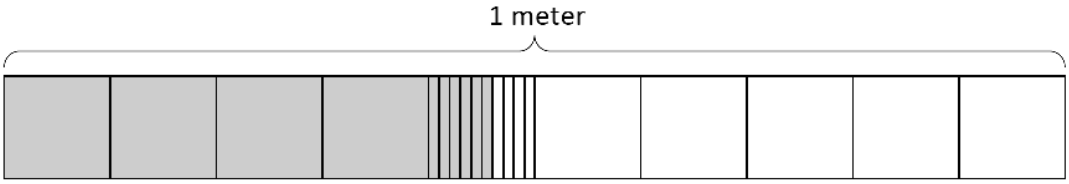
b.

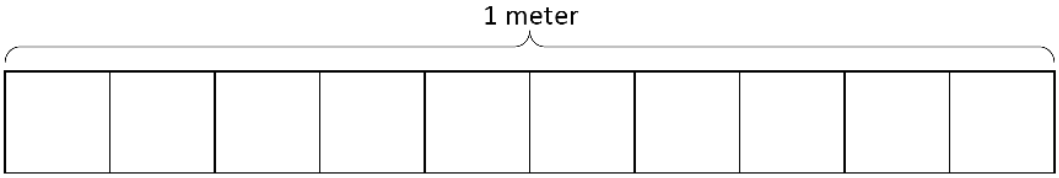


c.

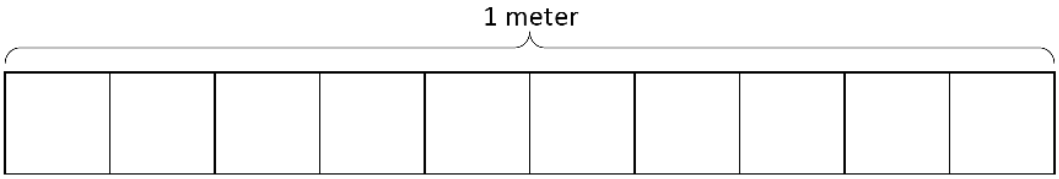


4. On each meter stick, shade in the amount shown. Then, write the equivalent decimal.

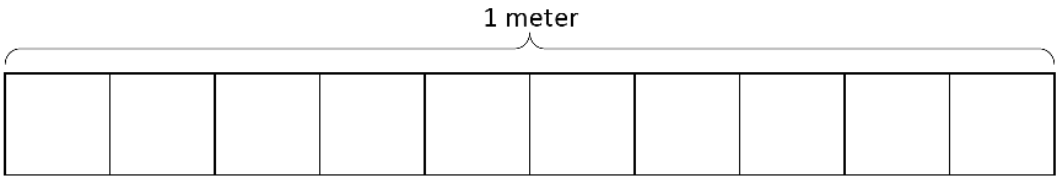
a. $\frac{9}{10}$ m



b. $\frac{15}{100}$ m



c. $\frac{41}{100}$ m



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. $\frac{76}{100}$

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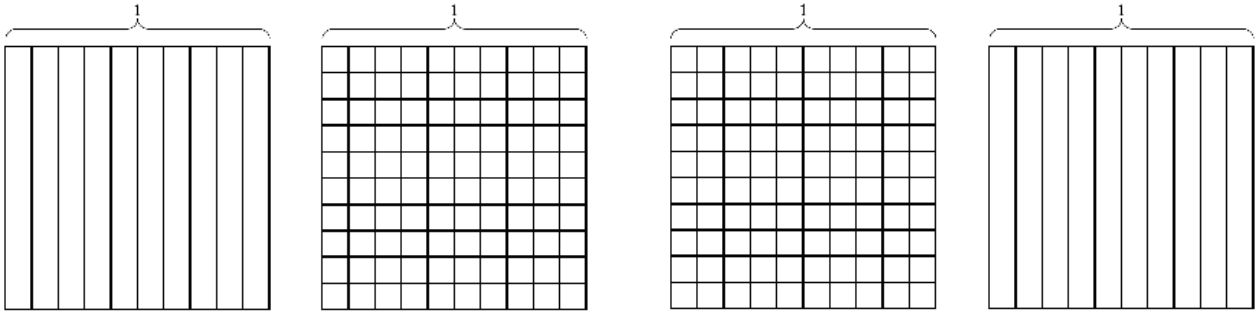
Name _____ Date _____

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. $\frac{60 \div}{100 \div} = \frac{\quad}{10}$

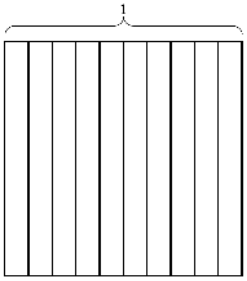


2. Complete the number sentences. Shade the equivalent amount on the area model, drawing horizontal lines to make hundredths.

a. 36 hundredths = _____ tenths + ____ hundredths

Decimal form: _____

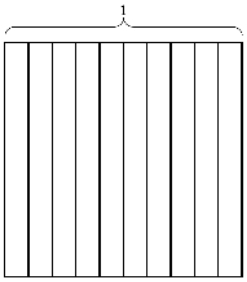
Fraction form: _____



b. 82 hundredths = ____ tenths + ____ hundredths

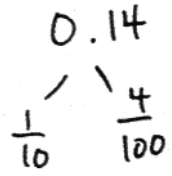
Decimal form: _____

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.

a.



____ hundredths = _____ tenth + _____ hundredths

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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.

a. $\frac{4}{100}$ = 0. _____ _____ hundredths	b. $\frac{13}{100}$ = 0. _____ _____tenth _____ hundredths
c. ___ = 0.41 _____ hundredths	d. ___ = 0.90 _____ tenths
e. ___ = 0. _____ 6 tenths 3 hundredths	f. ___ = 0. _____ 90 hundredths

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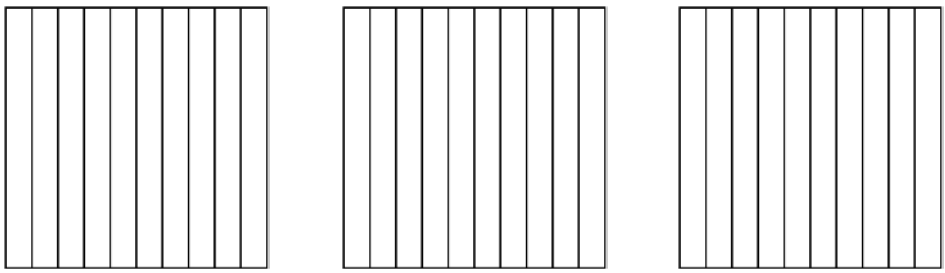
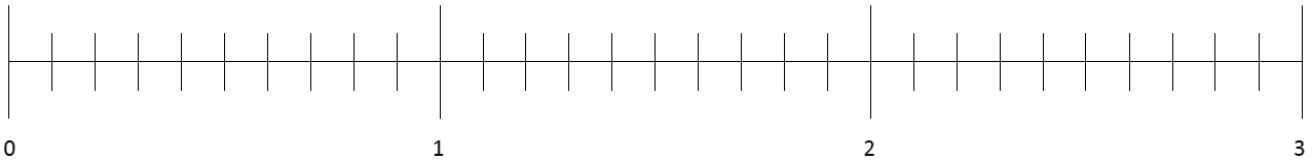
Name _____ Date _____

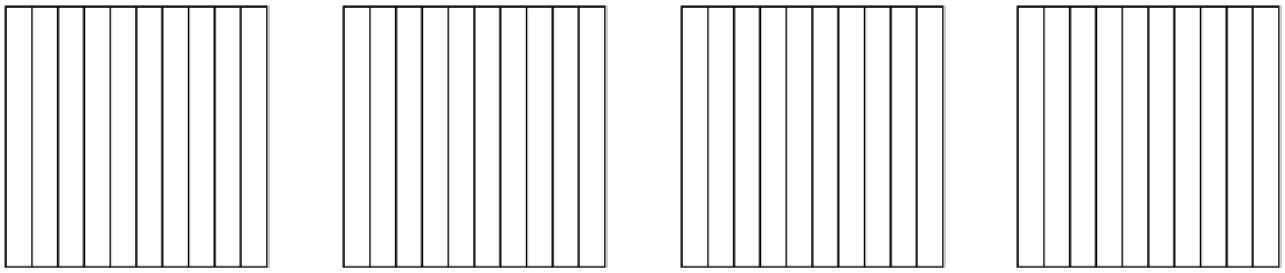
1. Shade the area models to represent the number, drawing horizontal lines to make hundredths as needed. Locate the corresponding point on the number line. Label with a point, and record the mixed number as a decimal.

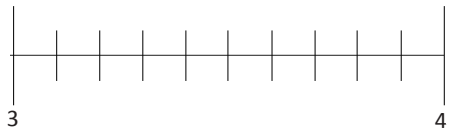
a. $2\frac{35}{100}$ = ___._____





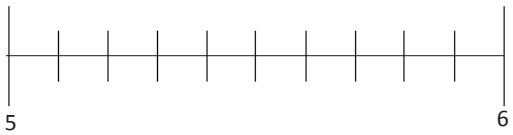
b. $3\frac{17}{100}$ = ___._____



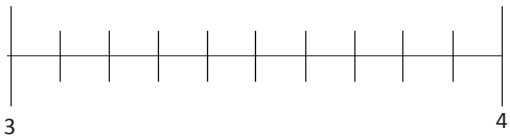


2. Estimate to locate the points on the number lines.

a. $5\frac{90}{100}$



b. $3\frac{25}{100}$



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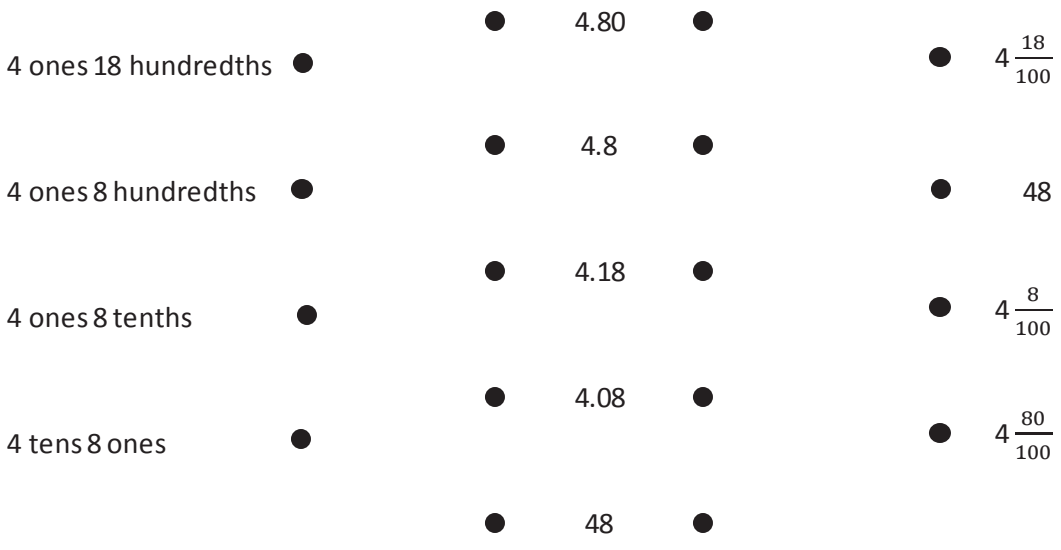
3. Write the equivalent fraction and decimal for each of the following numbers.

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.



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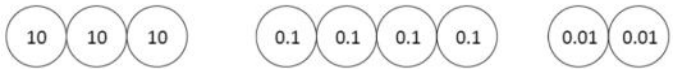
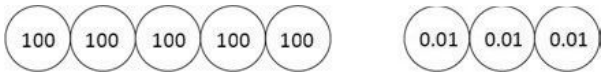
Name _____ Date _____

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 _____.

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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 = _____		
39.07 = _____		
40.6 = _____		
208.90 = _____		
510.07 = _____		
900.09 = _____		

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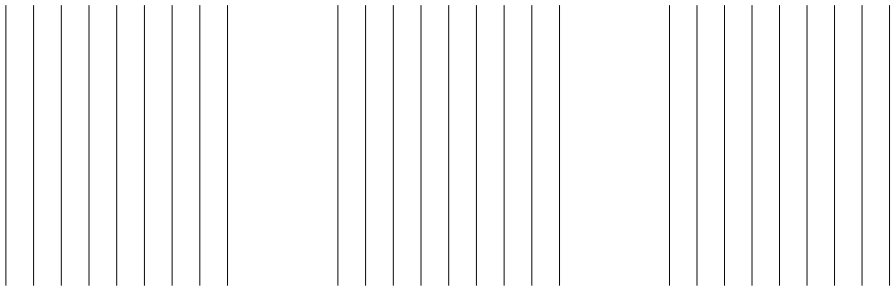
Name _____ Date _____

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

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

a. 1 = _____ tenths

b. 2 = _____ tenths

c. 1.3 = _____ tenths

d. 2.6 = _____ tenths

e. 10.3 = _____ tenths

f. 20.6 = _____ tenths

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

a. 1 = _____ hundredths

b. 2 = _____ hundredths

c. 1.3 = _____ hundredths

d. 2.6 = _____ hundredths

e. 10.3 = _____ hundredths

f. 20.6 = _____ 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			

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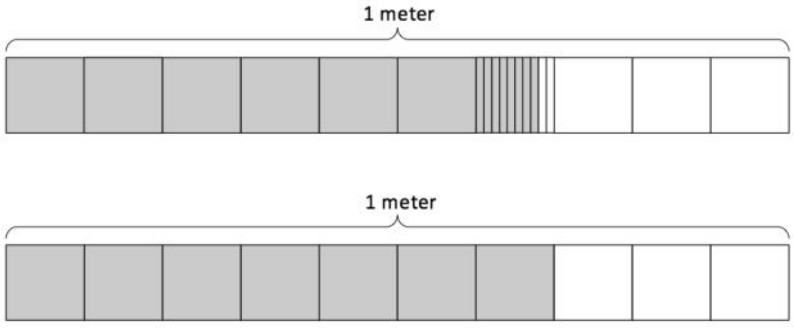
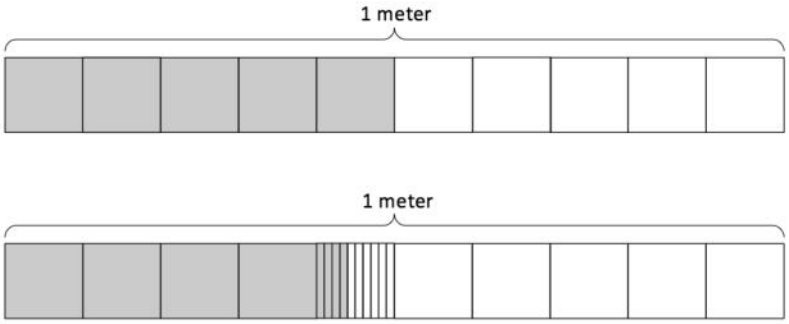
1. Express the lengths of the shaded parts in decimal form. Write a sentence that compares the two lengths. Use the expression *shorter than* or *longer than* in your sentence.

a.



b.



c. List all four lengths from least to greatest.

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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

0.15 kg 0.62 kg 0.43 kg 0.25 kg

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.

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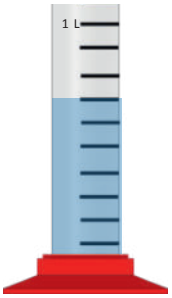
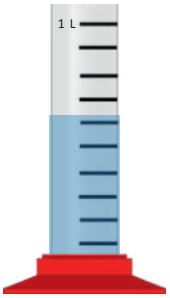
3. Record the volume of water in each graduated cylinder on the place value chart below.

A



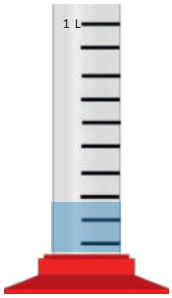
0.7 liter

B



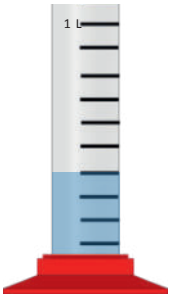
0.62 liter

C



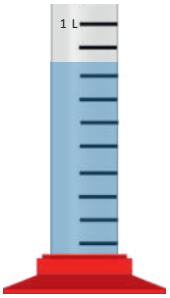
0.28 liter

D



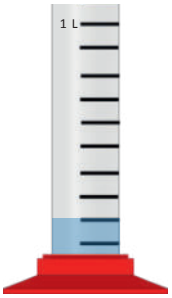
0.4 liter

E



0.85 liter

F



0.2 liter

Volume of Water (liters)

Cylinder	ones	.	tenths	hundredths
A				
B				
C				
D				
E				
F				

Compare the values using >, <, or =.

a. 0.4 L ____ 0.2 L

b. 0.62 L ____ 0.7 L

c. 0.2 L _____ 0.28 L

d. Write the volume of water in each graduated cylinder in order from least to greatest.

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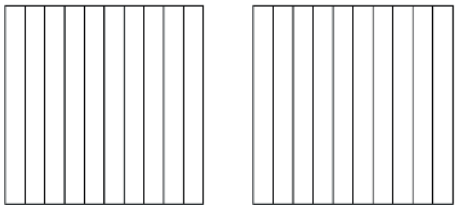
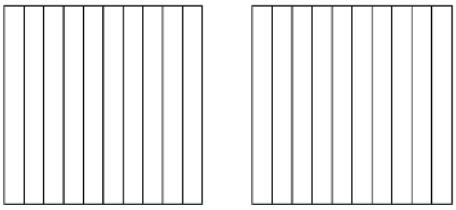
1. Shade the parts of the area models below, decomposing tenths as needed, to represent the pairs of decimal numbers. Fill in the blank with <, >, or = to compare the decimal numbers.

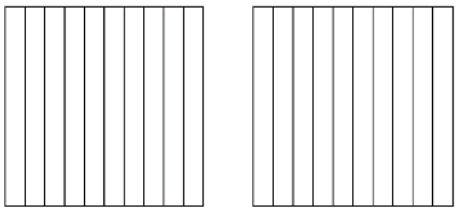
a. 0.19 _____ 0.3



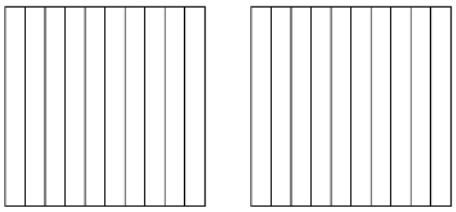
b. 0.6 _____ 0.06



c. 1.8 _____ 1.53



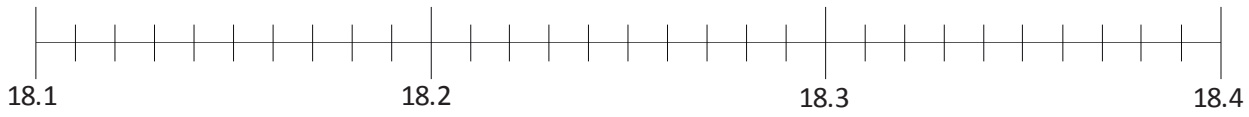
d. 0.38 _____ 0.7



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



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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

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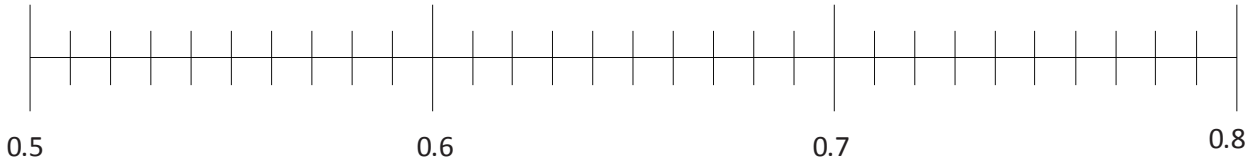
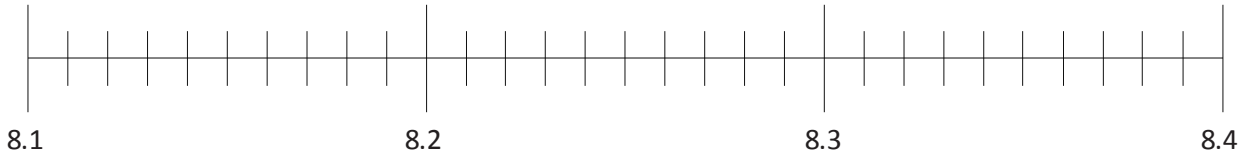
1. Plot the following points on the number line using decimal form.

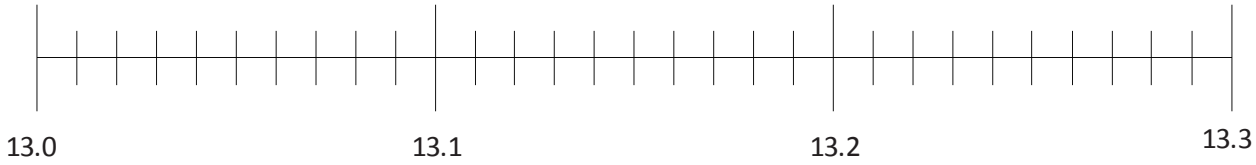
a. 0.6, $\frac{5}{10}$, 0.76, $\frac{79}{100}$, 0.53, $\frac{67}{100}$



b. 8 ones and 15 hundredths, $\frac{832}{100}$, $8\frac{27}{100}$, $\frac{82}{10}$, 8.1



c. $13\frac{12}{100}$, $\frac{130}{10}$, 13 ones and 3 tenths, 13.21, $13\frac{3}{100}$



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2. Arrange the following numbers in order from greatest to least using decimal form. Use the > symbol between each number.

   a. 4.03, 4 ones and 33 hundredths, $\frac{34}{100}$, $4\frac{43}{100}$, $\frac{430}{100}$, 4.31

   b. $17\frac{5}{10}$, 17.55, $\frac{157}{10}$, 17 ones and 5 hundredths, 15.71, $15\frac{75}{100}$

   c. 8 ones and 19 hundredths, $9\frac{8}{10}$, 81, $\frac{809}{100}$, 8.9, $8\frac{1}{10}$

3. In a paper airplane contest, Matt's airplane flew 9.14 meters. Jenna's airplane flew $9\frac{4}{10}$ meters. Ben's airplane flew $\frac{904}{100}$ meters. Leah's airplane flew 9.1 meters. Whose airplane flew the farthest?

4. Becky drank $1\frac{41}{100}$ liters of water on Monday, 1.14 liters on Tuesday, 1.04 liters on Wednesday, $\frac{11}{10}$ liters on Thursday, and $1\frac{40}{100}$ liters on Friday. Which day did Becky drink the most? Which day did Becky drink the least?

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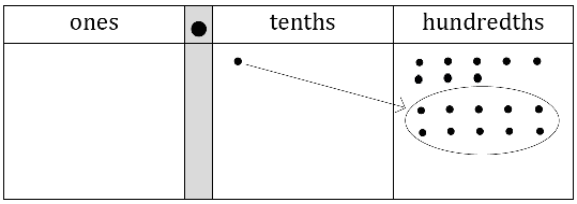
1. Complete the number sentence by expressing each part using hundredths. Model using the place value chart, as shown in part (a).



a. 1 tenth + 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

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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?

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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.

a. $5\frac{2}{10}+\frac{7}{100}=5\frac{20}{100}+\frac{7}{100}=$ _____ 5.2 + 0.07 = _____	b. $5\frac{2}{10}+3\frac{7}{100}=8\frac{20}{100}+\frac{7}{100}=$ _____
c. $6\frac{5}{10}+\frac{1}{100}$	d. $6\frac{\mathbf{5}}{\mathbf{10}}+7\frac{1}{100}$

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

a. $4\frac{9}{10}+5\frac{10}{100}$	b. $8\frac{7}{10}+2\frac{65}{100}$
c. $7\frac{3}{10}+6\frac{87}{100}$	d. $5\frac{48}{100}+7\frac{8}{10}$

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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. $18.62 + 14.7$

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1. The snowfall in Year 1 was 2.03 meters. The snowfall in Year 2 was 1.6 meters. How many total meters of snow fell in Years 1 and 2?

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?

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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?

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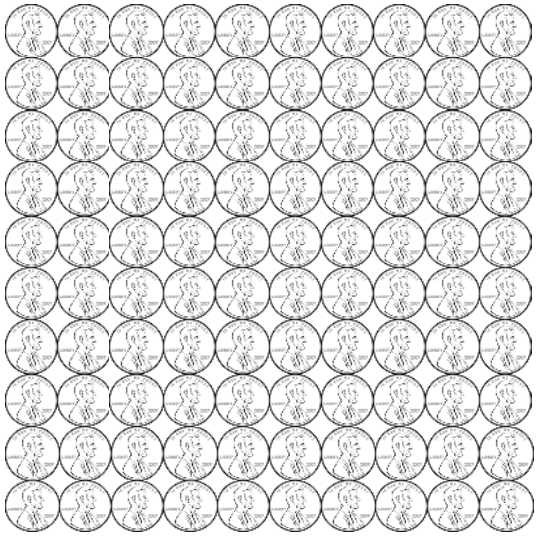
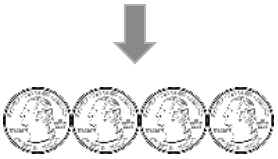


1. 100 pennies = $___._____ 100¢ = $\frac{\quad}{100}$ dollar
2. 1 penny = $___._____ 1¢ = $\frac{\quad}{100}$ dollar
3. 3 pennies = $___._____ 3¢ = $\frac{\quad}{100}$ dollar
4. 20 pennies = $___._____ 20¢ = $\frac{\quad}{100}$ dollar
5. 37 pennies = $___._____ 37¢ = $\frac{\quad}{100}$ dollar

6. 10 dimes = $___._____ 100¢ = $\frac{\quad}{10}$ dollar
7. 2 dimes = $___._____ 20¢ = $\frac{\quad}{10}$ dollar
8. 4 dimes = $___._____ 40¢ = $\frac{\quad}{10}$ dollar
9. 6 dimes = $___._____ 60¢ = $\frac{\quad}{10}$ dollar
10. 9 dimes = $___._____ 90¢ = $\frac{\quad}{10}$ dollar

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



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

15. 5 dimes and 8 pennies

16. 3 quarters and 13 pennies

17. 3 quarters 7 dimes and 16 pennies

18. 187 cents is what fraction of a dollar?

Solve. Express the answer in decimal form.

19. 1 dollar 2 dimes 13 pennies + 2 dollars 3 quarters

20. 2 dollars 6 dimes + 2 dollars 2 quarters 16 pennies

21. 8 dollars 8 dimes + 7 dollars 1 quarter 8 dimes

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

1. Maria has 2 dollars, 3 dimes, and 4 pennies. Lisa has 1 dollar and 5 quarters. How much money do the two girls have in all?

2. Meiling needs 5 dollars 35 cents to buy a ticket to a show. In her wallet, she finds 2 dollar bills, 11 dimes, and 5 pennies. How much more money does Meiling need to buy the ticket?

3. Joe has 5 dimes and 4 pennies. Jamal has 2 dollars, 4 dimes, and 5 pennies. Jimmy has 6 dollars and 4 dimes. They want to put their money together to buy a book that costs $10.00. Do they have enough? If not, how much more do they need?

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4. A package of mechanical pencils costs $4.99. A package of pens costs twice as much as a package of pencils. How much do a package of pens and a package of pencils cost together?

5. Carlos has 8 dollars and 48 cents. Alissa has 4 dollars and 14 cents. How much money does Carlos need to give Alissa so that each of them has the same amount of money?

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