

Key to

Decimals[®]

1
Student
Workbook

Decimal Concepts



By Steven Rasmussen and Spreck Rosekrans

Name _____

Class _____

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About the Cover:

The number system that we use today has a long history. The invention of decimal fractions was a relatively recent event.

Ancient number systems were as varied as the peoples who invented them. Many, however, shared a common feature—the number ten had special importance. This shouldn't surprise you, for in spite of their many differences, the people in all of these societies had ten fingers.

Ancient number systems were similar in another way also—they worked well for counting but not for calculating. Most were so clumsy that only a few highly educated people in each society could do simple arithmetic.

As an aid in calculation, many ancient civilizations invented counting boards. The Roman counting board consisted of pebbles placed in grooves on a board or metal plate. The Chinese Suan-Pan was made with loose beads on bamboo rods. While different in construction, counting boards were all similar in principle. Each column represented a power of ten (ones, tens, hundreds, etc.). Numbers were represented by placing the appropriate number of counters on each groove or rod.

While many societies used counting boards, only the ancient Hindus recognized the value of adopting a number system patterned after the counting board. The Hindus used nine digits to

represent the number of counters in each column of the counting board. A zero digit showed that a column was empty. The Hindu system was a major breakthrough because it made calculations easier.

The Hindu number system evolved between the fourth and seventh centuries A.D. By 800 A.D. the system had been adopted by the Arabs. They spread its use across northern Africa and introduced it to Europe.

Although the Hindu-Arabic number system was used throughout Asia and Europe by 1000 A.D., no one thought to extend it to represent fractional numbers for five hundred years. Common fractions were used for values less than one.

On the cover of this booklet a pair of hands displays the number 5362 on the Suan-Pan (Chinese abacus). The hands, with ten fingers, reminds us why our number system is based on ten. Before the invention of the place-value number system, abacuses and counting boards were used throughout Asia and Europe to perform calculations. The counting board was the forerunner of the Hindu number system. The widespread acceptance of this number system set the stage for the invention of decimal numbers. The abacus can be used to add, subtract, multiply, and divide decimals as well as whole numbers.

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Decimal Numbers

A decimal number is a number that contains a decimal point.

All of these are decimal numbers.

3.6 270.125
 4.837
 0.7 .1 42.

None of these is a decimal number.

25 126 80 81,299
 $\frac{1}{2}$ 15 $\frac{2}{3}$ 1,307,863

Circle each decimal number below.

$\frac{1}{2}$ 3.5 $\frac{5}{12}$ $7\frac{1}{3}$.0001
 132 10.2 98.6 0.6
 30,000 $2\frac{3}{4}$ 61,325
 9.
 3.142659 1.0

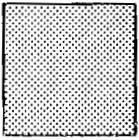
A decimal number has two parts. The whole part is to the left of the decimal point. The fraction part includes the decimal point and any digits to the right.

Write the whole part and the fraction part of each decimal number.

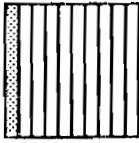
Decimal Number	Whole Part	Fraction Part
15.3	15	.3
7.125		
0.33		
5.4		
16.75		
0.8		

Decimal Number	Whole Part	Fraction Part
1.99		
2.1654		
100.7		
30,526.1		
0.0001		
.1		

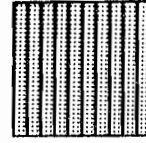
Tenths



One whole square is shaded.

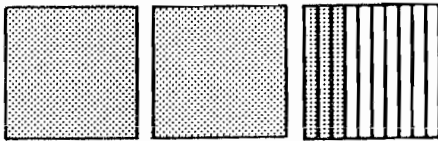


Divide a square into ten equal parts to make tenths.
One tenth ($\frac{1}{10}$) of the square is shaded.



Ten tenths together make one whole square.

How many whole squares and how many tenths are shaded?

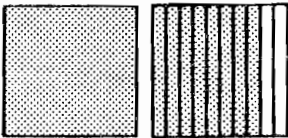
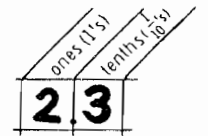


How many whole squares ?

2

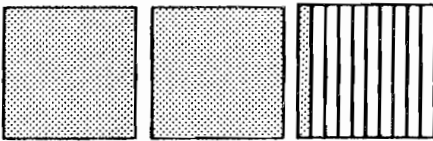
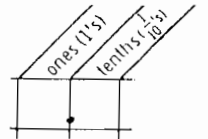
How many more tenths ?

3



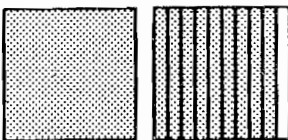
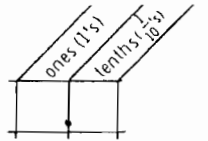
How many whole squares ?

How many more tenths ?



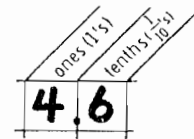
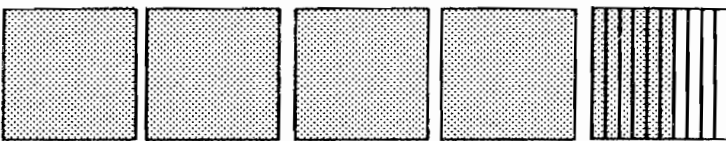
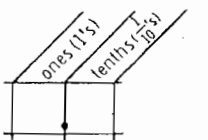
How many whole squares ?

How many more tenths ?

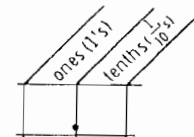
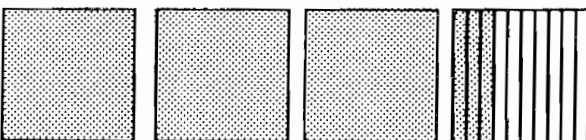


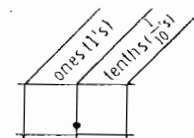
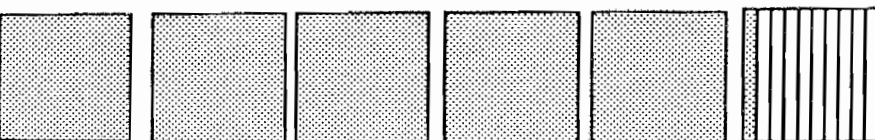
How many whole squares ?

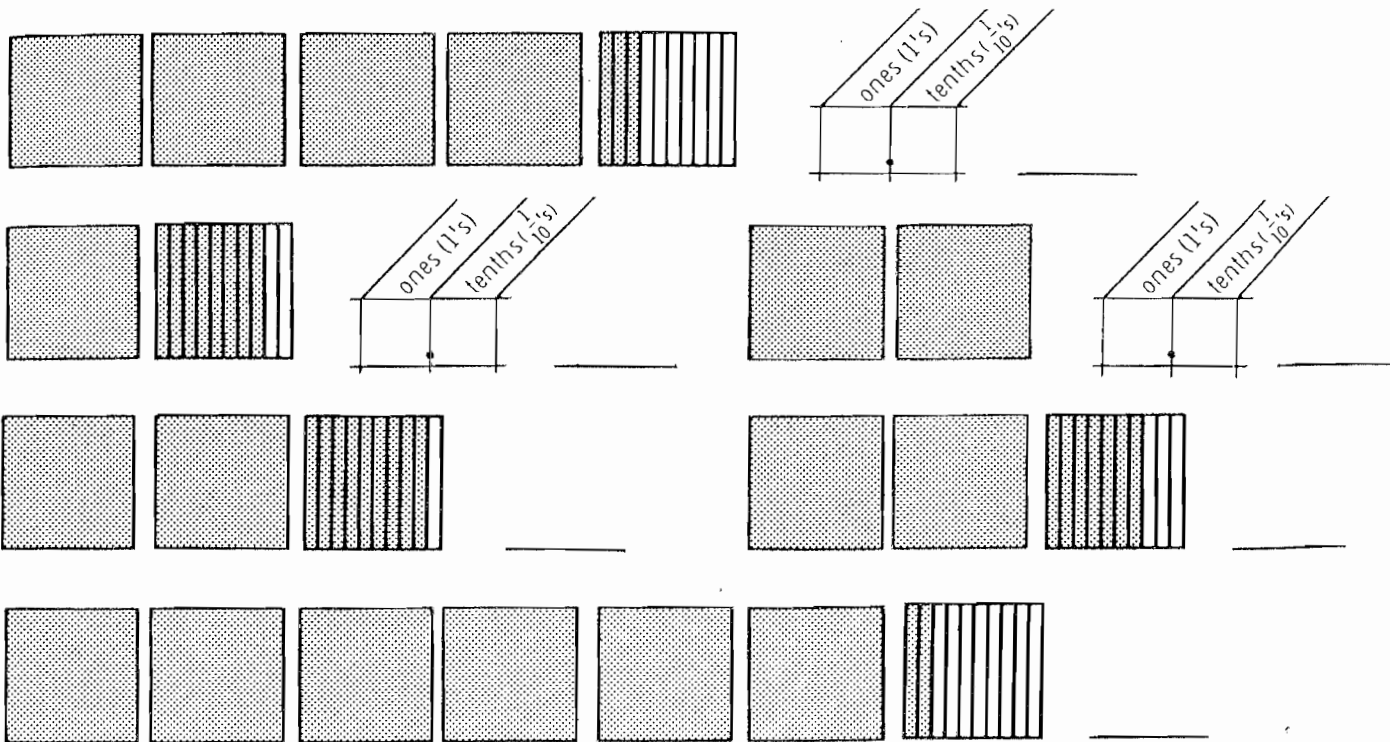
How many more tenths ?



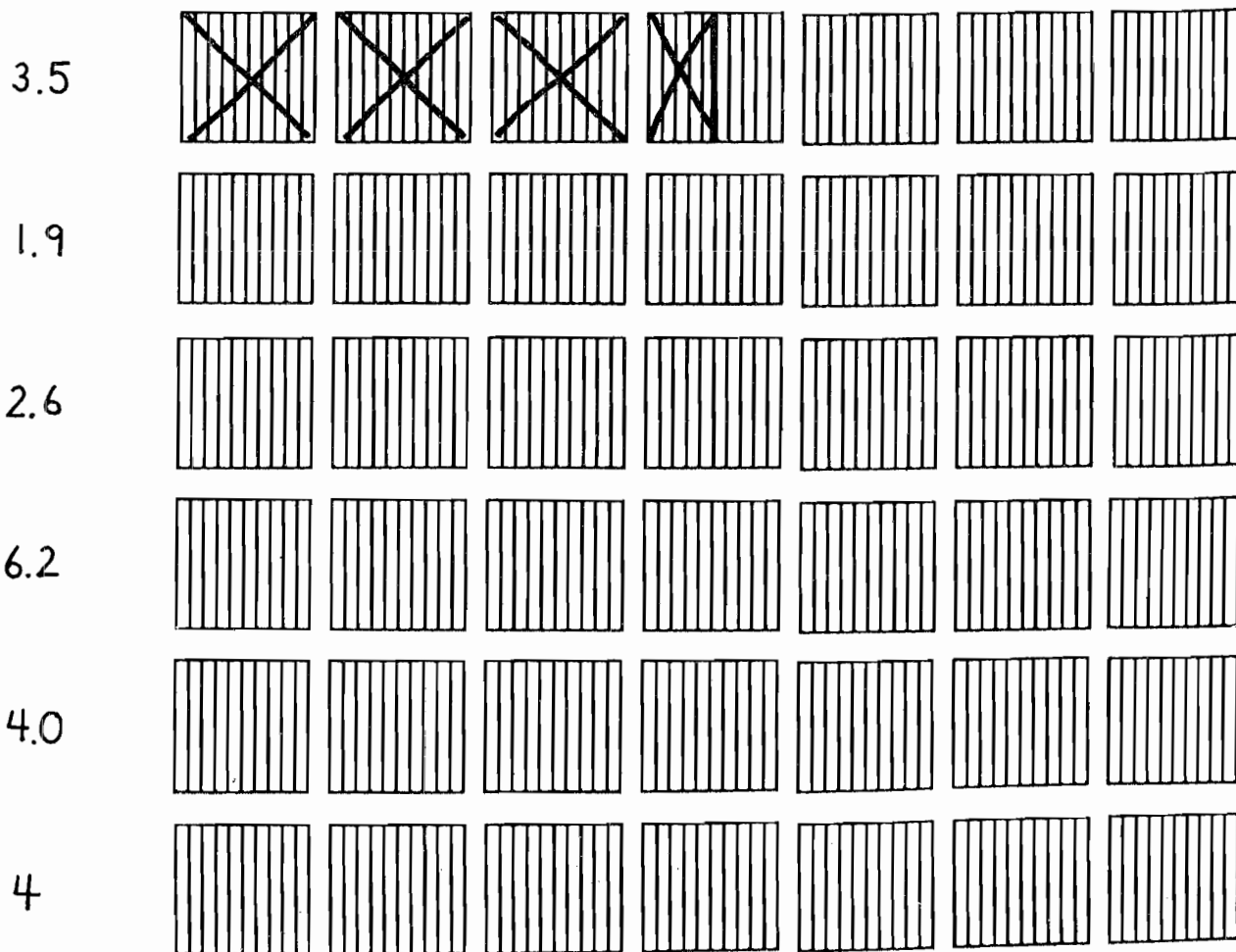
4.6







You do the shading.



Decimal numbers can be written as mixed numbers and they can be expressed in words.

- 1) Copy the whole part.
2) Write the fraction part as a common fraction.

- 1) Name the whole part.
2) Use "and" for the decimal point.
3) Name the fraction part.

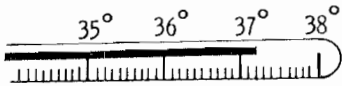
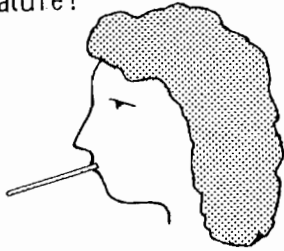
Decimal Number	Mixed Number	Word Name
1.4	$1 \frac{4}{10}$	One and four tenths
3.8		three and eight tenths
	$5 \frac{7}{10}$	
2.9		two and nine tenths
	$7 \frac{5}{10}$	
		nine and three tenths
10.1		ten and one tenth
	$13 \frac{8}{10}$	
		three and zero tenths
		zero and nine tenths

Fill in the table with some numbers of your own.

Decimal Number	Mixed Number	Word Name

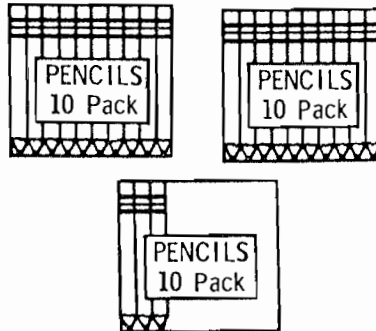
Use a decimal number to finish each statement below.

What is the girl's temperature?



36.6 37 **37.2**
degrees Celsius

How many packs of pencils?



2 2.3 3
packs of pencils

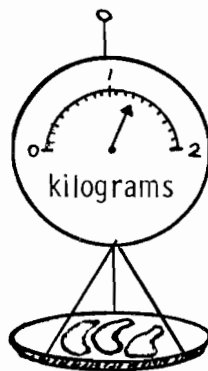
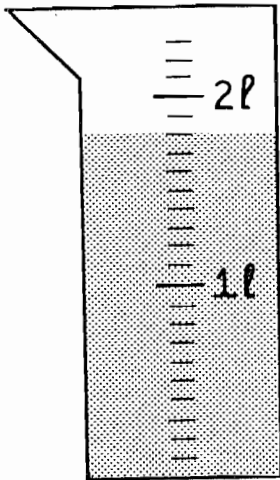
How tall is the basketball player?



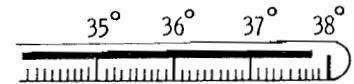
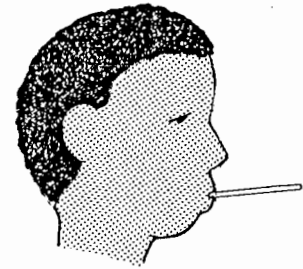
2.0 m
1.9 m
1.8 m

How many liters of liquid are there?

_____ l

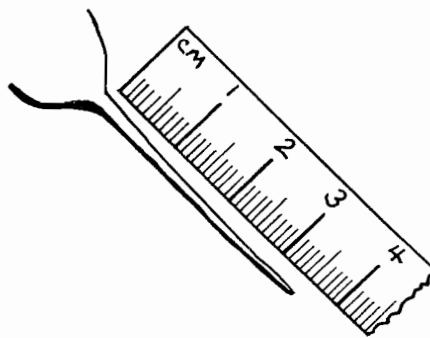
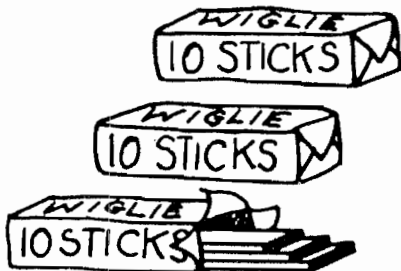


The chicken legs weigh about _____ kg.



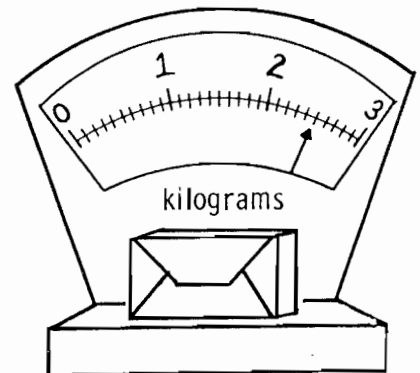
The boy has a temperature of _____ degrees Celsius.

How many packs of gum?



The mouse's tail is about _____ cm long.

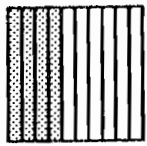
The box weighs about _____ kilograms.



Decimal Fractions

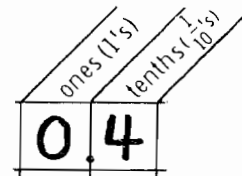
A decimal fraction is a number that has no whole part.
 A decimal fraction can be used to name a number less than one.

What decimal fraction of each square is shaded?



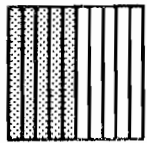
How many whole squares? 0

How many tenths? 4



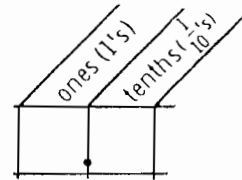
Decimal Fraction

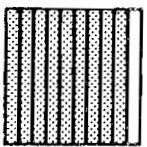
0.4



How many whole squares? _____

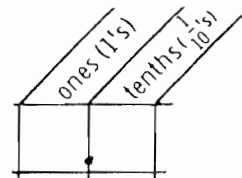
How many tenths? _____

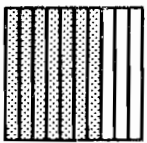




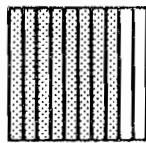
How many whole squares? _____

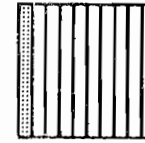
How many tenths? _____

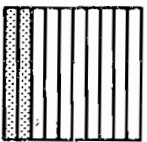


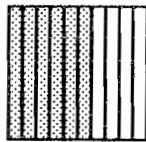


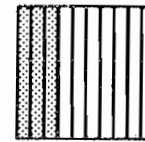
0.7







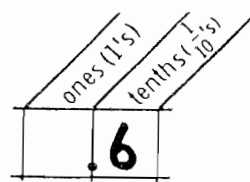
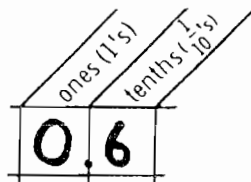
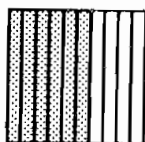




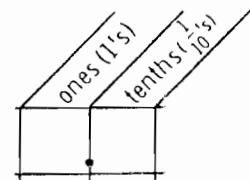
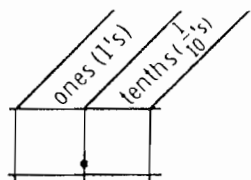
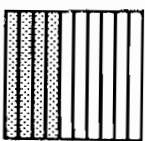
A decimal fraction can be written in two ways, with a zero in the ones place or without a zero.

With Zero

Without Zero

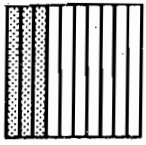


0.6 = .6

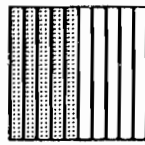


_____ = _____

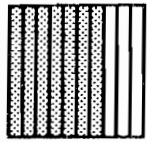
Write each decimal fraction in two ways.



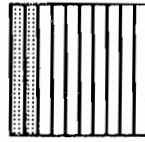
$$\underline{0.3} = \underline{.3}$$



$$\underline{\quad} = \underline{\quad}$$



$$\underline{\quad} = \underline{\quad}$$



$$\underline{\quad} = \underline{\quad}$$

Rewrite each common fraction two ways.

$$\frac{1}{10} = \mathbf{0.1} = \mathbf{.1}$$

$$\frac{9}{10} = \quad = \quad$$

$$\frac{6}{10} = \quad = \quad$$

$$\frac{5}{10} = \quad = \quad$$

$$\frac{3}{10} = \quad = \quad$$

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

$$\frac{8}{10} = \quad = \quad$$

$$\frac{7}{10} = \quad = \quad$$

$$\frac{4}{10} = \quad = \quad$$

The word name for a decimal fraction can also be written in two ways.

$$0.4 = .4 \quad \underline{\text{zero and fourtenths}} \quad \text{or} \quad \underline{\text{four tenths}}$$

$$0.7 = .7 \quad \underline{\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad} \quad \text{or} \quad \underline{\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad}$$

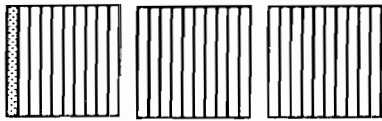
$$0.1 = .1 \quad \underline{\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad} \quad \text{or} \quad \underline{\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad}$$

$$0.8 = .8 \quad \underline{\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad} \quad \text{or} \quad \underline{\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad}$$

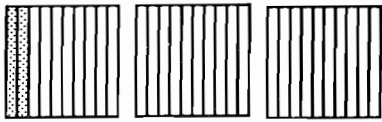
$$0.3 = .3 \quad \underline{\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad} \quad \text{or} \quad \underline{\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad}$$

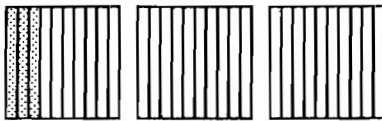
$$0.5 = .5 \quad \underline{\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad} \quad \text{or} \quad \underline{\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad}$$

How many squares are shaded?

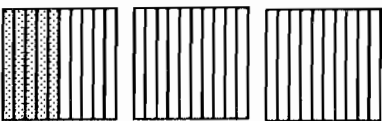


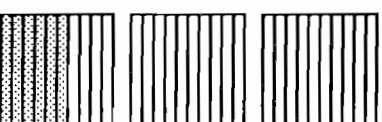
0.1

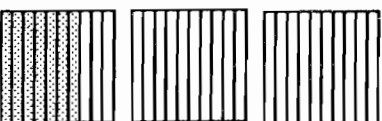


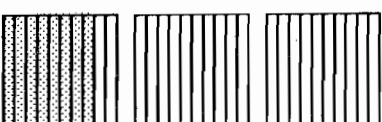


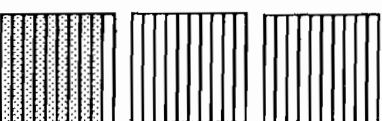


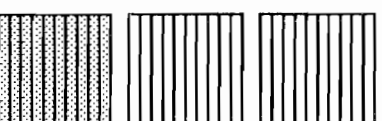


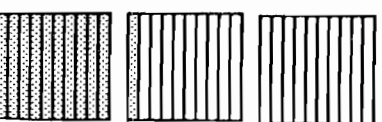


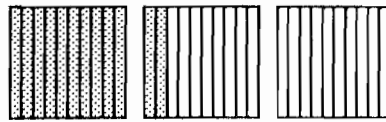


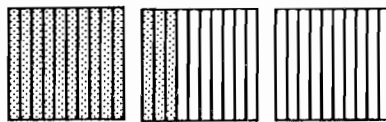


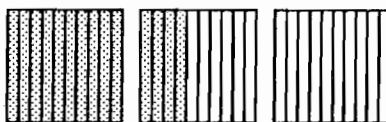


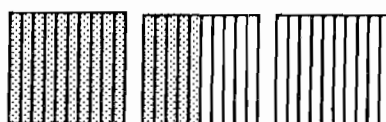


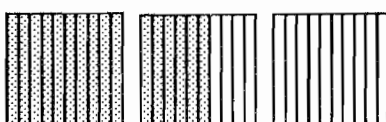


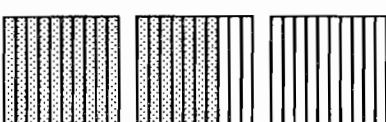


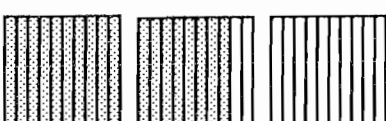


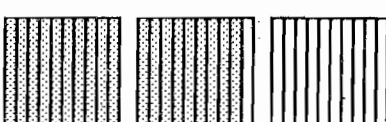


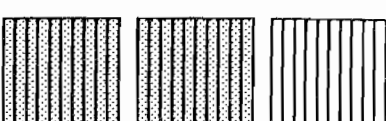


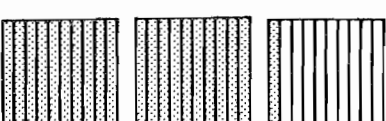


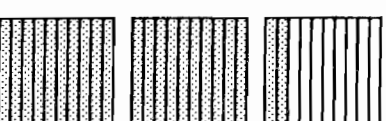








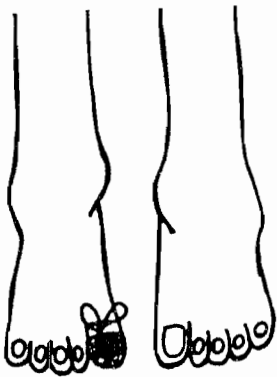






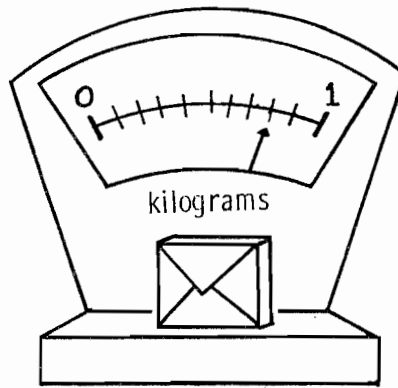
Answer each question with both a common fraction and a decimal fraction.

What fraction of the toes are hurt?



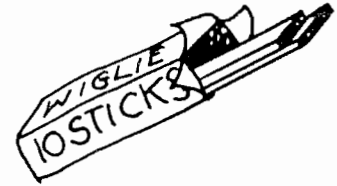
_____ or _____

How many kilograms does the package weigh?



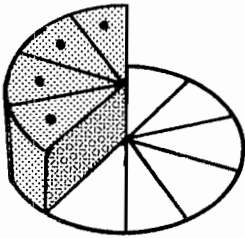
_____ or _____ kg

What part of the pack is left?

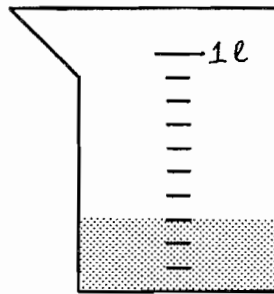


_____ or _____
of the pack

What part of the cake has been eaten?



_____ or _____
of the cake



How many liters of water are in the beaker?

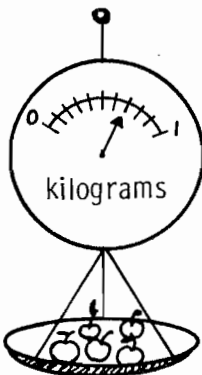
_____ or _____ liters

How many centimeters long is the bug?

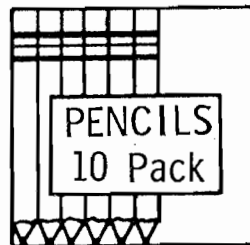


_____ or _____ cm

How many kilograms do the apples weigh?



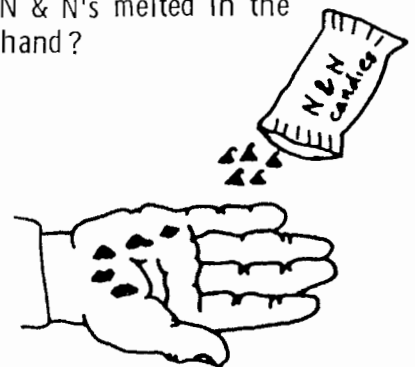
_____ or _____ kg



What part of the pack is left?

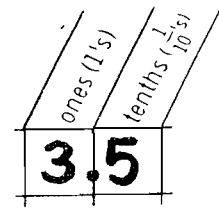
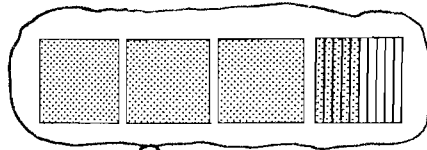
_____ or _____
of the pack

What fraction of the N & N's melted in the hand?



_____ or _____
of the N & N's

Place Value and Tenths



3.5 three and five tenths

The chart on the right is called a place value chart. A place value chart shows the value of each digit in a decimal number. The three is in the ones place. Its value is 3×1 or 3. The five is in the tenths place. Its value is $5 \times \frac{1}{10}$ or $\frac{5}{10}$. The decimal point is always between the ones place and the tenths place. The decimal point separates the whole part of the number from the fraction part.

Put each number below in the place value chart.

<p>9.2</p> <p>5.7</p>	<table border="1" style="margin: auto;"> <tr> <td style="text-align: center;">ones (1's)</td> <td style="text-align: center;">tenths ($\frac{1}{10}$'s)</td> </tr> <tr> <td style="text-align: center;">3</td> <td style="text-align: center;">.$\frac{4}{10}$</td> </tr> <tr> <td style="text-align: center;">1</td> <td style="text-align: center;">.$\frac{6}{10}$</td> </tr> </table>	ones (1's)	tenths ($\frac{1}{10}$'s)	3	. $\frac{4}{10}$	1	. $\frac{6}{10}$	<p>four and two tenths</p> <p>six and nine tenths</p>	<table border="1" style="margin: auto;"> <tr> <td style="text-align: center;">ones (1's)</td> <td style="text-align: center;">tenths ($\frac{1}{10}$'s)</td> </tr> <tr> <td style="text-align: center;">4</td> <td style="text-align: center;">.$\frac{2}{10}$</td> </tr> <tr> <td style="text-align: center;">6</td> <td style="text-align: center;">.$\frac{9}{10}$</td> </tr> </table>	ones (1's)	tenths ($\frac{1}{10}$'s)	4	. $\frac{2}{10}$	6	. $\frac{9}{10}$
ones (1's)	tenths ($\frac{1}{10}$'s)														
3	. $\frac{4}{10}$														
1	. $\frac{6}{10}$														
ones (1's)	tenths ($\frac{1}{10}$'s)														
4	. $\frac{2}{10}$														
6	. $\frac{9}{10}$														

The place value charts below have been extended to show the tens place.

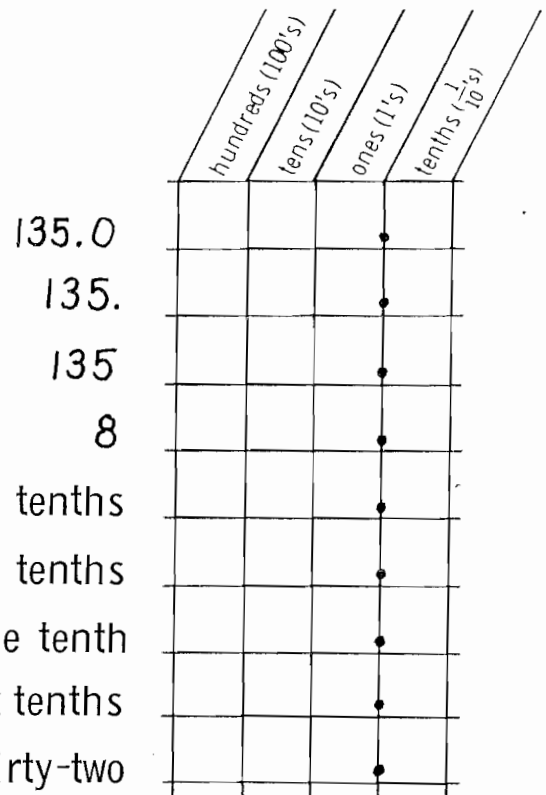
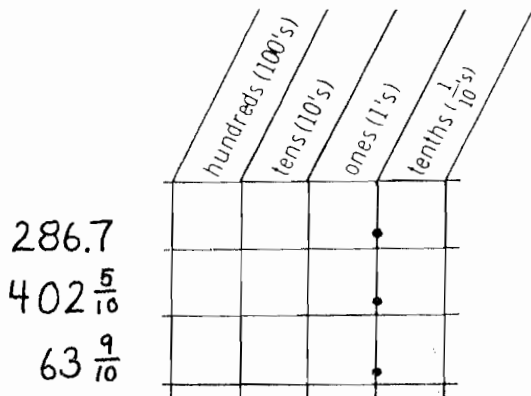
Put each number below in the chart.

The word "and" separates the whole part from the fraction part. It shows where the decimal point belongs.

<p>14.6</p> <p>18.1</p> <p>23.2</p> <p>$99\frac{9}{10}$</p> <p>$10\frac{8}{10}$</p> <p>$31\frac{3}{10}$</p> <p>$47\frac{0}{10}$</p> <p>47</p>	<table border="1" style="margin: auto;"> <tr> <td style="text-align: center;">tens (10's)</td> <td style="text-align: center;">ones (1's)</td> <td style="text-align: center;">tenths ($\frac{1}{10}$'s)</td> </tr> <tr> <td></td> <td style="text-align: center;">4</td> <td style="text-align: center;">.$\frac{6}{10}$</td> </tr> <tr> <td></td> <td style="text-align: center;">1</td> <td style="text-align: center;">.$\frac{1}{10}$</td> </tr> <tr> <td></td> <td style="text-align: center;">2</td> <td style="text-align: center;">.$\frac{2}{10}$</td> </tr> <tr> <td></td> <td style="text-align: center;">9</td> <td style="text-align: center;">.$\frac{9}{10}$</td> </tr> <tr> <td></td> <td style="text-align: center;">1</td> <td style="text-align: center;">.$\frac{8}{10}$</td> </tr> <tr> <td></td> <td style="text-align: center;">3</td> <td style="text-align: center;">.$\frac{3}{10}$</td> </tr> <tr> <td></td> <td style="text-align: center;">4</td> <td style="text-align: center;">.$\frac{0}{10}$</td> </tr> <tr> <td></td> <td style="text-align: center;">4</td> <td style="text-align: center;">.$\frac{7}{10}$</td> </tr> <tr> <td></td> <td style="text-align: center;">4</td> <td style="text-align: center;">.$\frac{7}{10}$</td> </tr> </table>	tens (10's)	ones (1's)	tenths ($\frac{1}{10}$'s)		4	. $\frac{6}{10}$		1	. $\frac{1}{10}$		2	. $\frac{2}{10}$		9	. $\frac{9}{10}$		1	. $\frac{8}{10}$		3	. $\frac{3}{10}$		4	. $\frac{0}{10}$		4	. $\frac{7}{10}$		4	. $\frac{7}{10}$	<p>sixteen and four tenths</p> <p>fifty-six and one tenth</p> <p>thirty-eight and seven tenths</p> <p>eleven and five tenths</p> <p>nine and six tenths</p> <p>one and one tenth</p> <p>eighty-two</p> <p>five</p>	<table border="1" style="margin: auto;"> <tr> <td style="text-align: center;">tens (10's)</td> <td style="text-align: center;">ones (1's)</td> <td style="text-align: center;">tenths ($\frac{1}{10}$'s)</td> </tr> <tr> <td></td> <td style="text-align: center;">1</td> <td style="text-align: center;">.$\frac{6}{10}$</td> </tr> <tr> <td></td> <td style="text-align: center;">5</td> <td style="text-align: center;">.$\frac{6}{10}$</td> </tr> <tr> <td></td> <td style="text-align: center;">3</td> <td style="text-align: center;">.$\frac{8}{10}$</td> </tr> <tr> <td></td> <td style="text-align: center;">1</td> <td style="text-align: center;">.$\frac{5}{10}$</td> </tr> <tr> <td></td> <td style="text-align: center;">9</td> <td style="text-align: center;">.$\frac{6}{10}$</td> </tr> <tr> <td></td> <td style="text-align: center;">1</td> <td style="text-align: center;">.$\frac{1}{10}$</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> <td style="text-align: center;">.$\frac{2}{10}$</td> </tr> <tr> <td></td> <td style="text-align: center;">8</td> <td style="text-align: center;">.$\frac{2}{10}$</td> </tr> <tr> <td></td> <td style="text-align: center;">4</td> <td style="text-align: center;">.$\frac{7}{10}$</td> </tr> <tr> <td></td> <td style="text-align: center;">4</td> <td style="text-align: center;">.$\frac{7}{10}$</td> </tr> </table>	tens (10's)	ones (1's)	tenths ($\frac{1}{10}$'s)		1	. $\frac{6}{10}$		5	. $\frac{6}{10}$		3	. $\frac{8}{10}$		1	. $\frac{5}{10}$		9	. $\frac{6}{10}$		1	. $\frac{1}{10}$		8	. $\frac{2}{10}$		8	. $\frac{2}{10}$		4	. $\frac{7}{10}$		4	. $\frac{7}{10}$
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The place value charts below have places for hundreds, tens, ones, and tenths digits.

Put each number in the place value chart. Remember, the decimal point always separates the ones place and the tenths place.



two hundred forty-nine and eight tenths

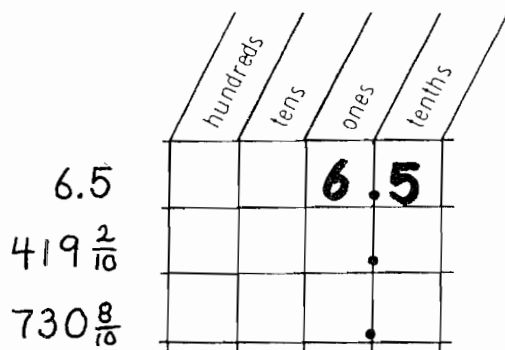
five hundred fourteen and two tenths

eighty-three and one tenth

nine hundred seven and six tenths

four hundred thirty-two

Put each decimal number in the place value chart. Then write the place name of each digit.



The 6 is in the ones place.

The 5 is in the _____ place.

The 4 is in the _____ place.

The 1 is in the _____ place.

The 9 is in the _____ place.

The 2 is in the _____ place.

The 3 is in the _____ place.

The 8 is in the _____ place.

The 7 is in the _____ place.

The 0 is in the _____ place.

Expanded Notation with Tenths

The value of each digit in a number is equal to the digit times the value of its place. To rewrite a number using expanded notation, write the number as the sum of the values of the digits.

Rewrite each number using expanded notation. The place value chart shows you how to find the value of each digit.

$\times 100$	$\times 10$	$\times 1$	$\times \frac{1}{10}$
3	7	5	.6
2	4	9	.8
1	5	6	.2
8	3	7	.5
	6	8	.7
	5	4	.3
	4	0	.1
		9	.6

Decimal
Number

Expanded Notation

$$375.6 = 300 + 70 + 5 + \frac{6}{10}$$

$249.8 =$
 $156.2 =$
 $837.5 =$
 $68.7 =$
 $54.3 =$
 $40.1 =$
 $9.6 =$

Try these without a place value chart.

$468.2 =$

$86.7 =$

$935.4 =$

$29.8 =$

$807.1 =$

$10.1 =$

$200.8 =$

$7.4 =$

Below are numbers in expanded notation. Rewrite them as decimal numbers.

$700 + 80 + 6 + \frac{3}{10} = \mathbf{786.3}$

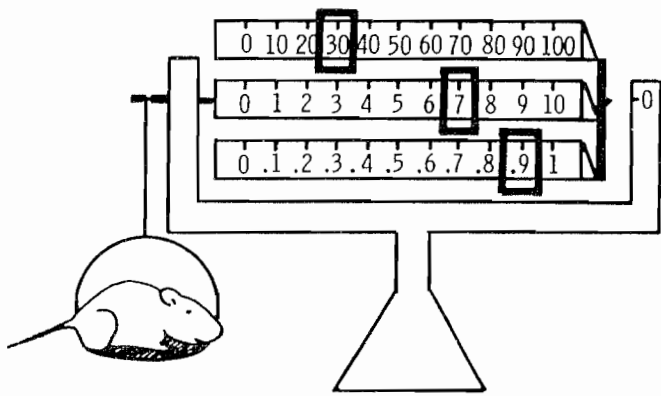
$200 + 10 + 0 + \frac{9}{10} =$

$500 + 30 + 5 + \frac{8}{10} =$

$20 + 0 + \frac{4}{10} =$

$100 + 0 + 9 + \frac{6}{10} =$

$300 + 0 + 0 + \frac{5}{10} =$

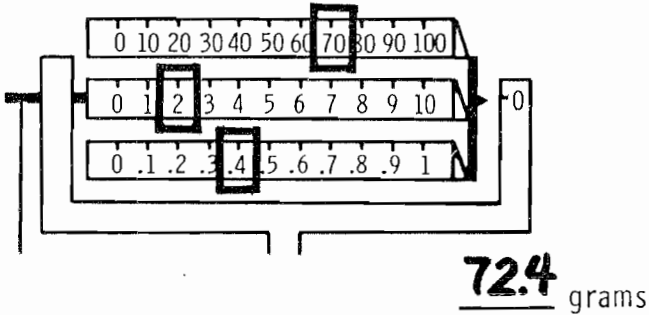


Many scales used in laboratories show weights in expanded notation. The tenths on these scales are shown as decimal fractions.

$$30 + 7 + .9$$

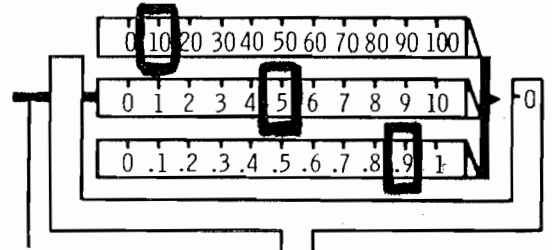
The mouse weighs 37.9 grams.

What weight is shown?

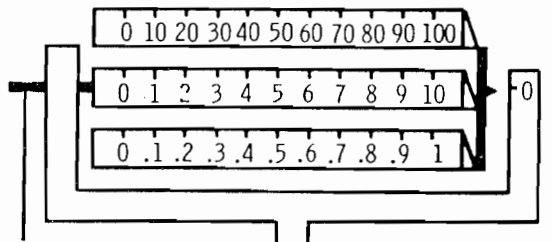


Show each weight.

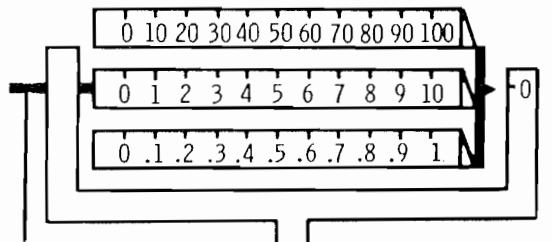
15.9 grams



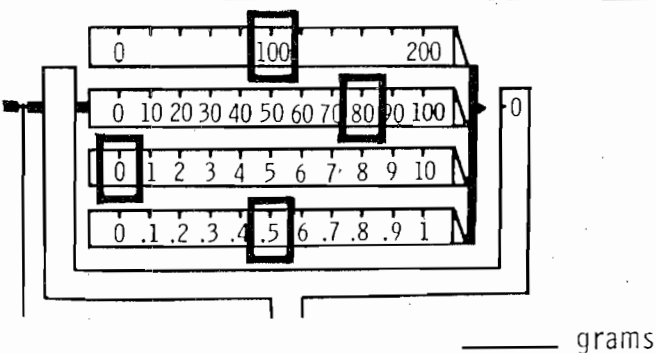
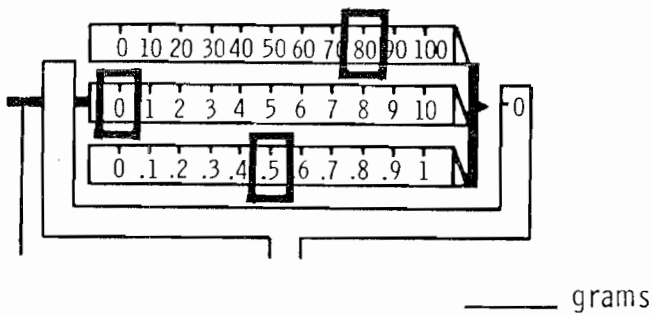
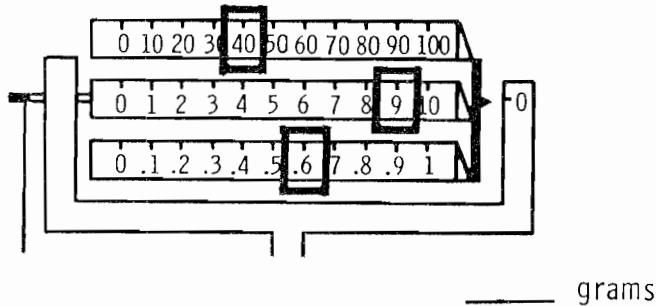
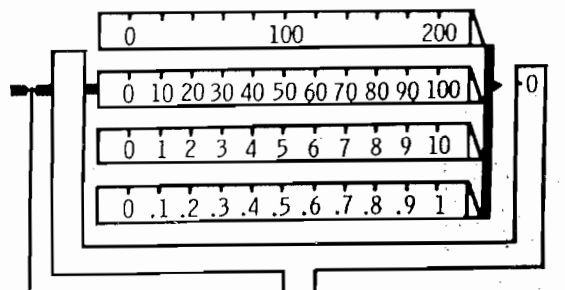
38.2 grams



20.1 grams

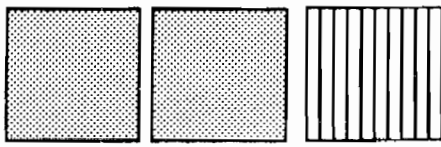


216.8 grams

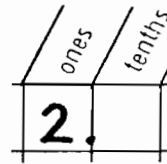


Zero as a Placeholder

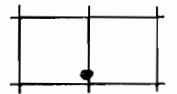
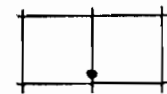
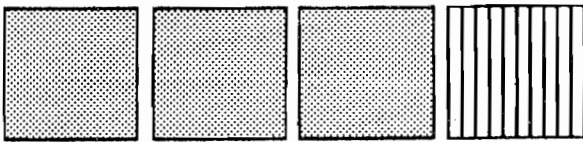
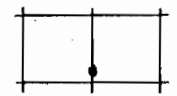
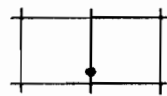
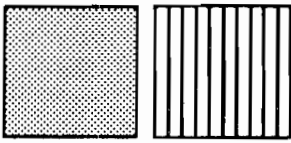
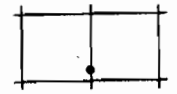
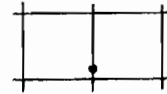
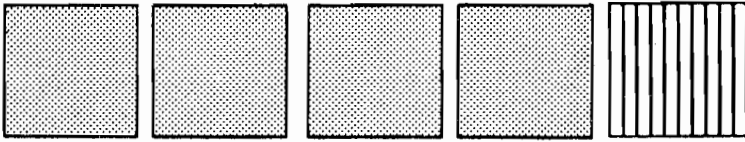
Write the decimal number for each picture in two ways. First without using zero, then using zero.



Without Zero



With Zero



When you use a zero to fill an empty place in a number you are using zero as a placeholder. The zero fills a place in the number, but adds no value.

Rewrite each number below using zero as a placeholder.

Rewrite each number without using zero as a placeholder.

seven
7. = 7.0
seven and zero tenths

5.0 = 5. 19.0 =

6. = 13. =

1.0 = 112.0 =

eight tenths
0.8 = 0.8
zero and eight tenths

8.0 = 437.0 =

.1 = .7 =

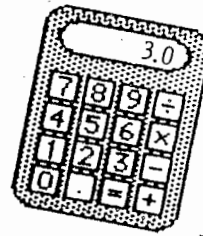
0.5 = 0.2 =

0.6 = 0.9 =

Match equal numbers.

- | | | | |
|------|-------|-------|------|
| 200. | 2.0 | 60.0 | .6 |
| 20. | 0.2 | 6.0 | 6. |
| 2. | 200.0 | 600.0 | 60. |
| .2 | 20.0 | 0.6 | 600. |

If you have a calculator, do this page.
 If you do not have a calculator skip it,
 or do it when you can use a calculator.



Press these buttons:	The display shows:	Then press:	The display shows:	Then clear:
3 . 0	3.0	=		c
7 . 0		=		c
4 . 0		=		c
1 5 . 0		=		c
7 4 9 . 0		=		c

Make up some of your own. Write the digits you push on the buttons below.

<input type="text"/> <input type="text"/> . 0		=		c
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>		<input type="text"/>		<input type="text"/>
<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>		<input type="text"/>		<input type="text"/>

Now try something different.

Press:	Display shows:	Clear:	Press:	Display shows:	Clear:
2	2. <small>Do you see the decimal point?</small>	c	. 9		c
1		c	. 4		c
1 6		c	. 7		c
4 2 9		c	. 3		c

Can you make your display show 6 without a decimal point?

yes no

Can you make your display show .7 without a zero?

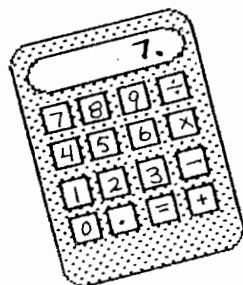
yes no

Most people write whole numbers without a decimal point. Calculators usually display whole numbers with a decimal point on the right. You can write whole numbers either way.



Common Way

7



Calculator Way

7.

7 = 7.

To work with decimal numbers, you should be able to recognize and write whole numbers with and without decimal points.

Write each whole number with a decimal point.

5 = 8 =
 3 = 21 =
 14 = 437 =
 10 = 500 =

Write each whole number without a decimal point.

6. = 9. =
 37. = 2. =
 1. = 1324. =
 75. = 2000. =

Put an equal sign between each pair of equal numbers below. Cross out each pair of numbers that are not equal.

7.0 = 7.	.4 4.	9 9.	0.2 .2	8.0 0.8
19 19.	6 .6	12 1.2	3.0 3.	46. 46.0
19 .19	2.6 26.	.1 0.1	1 .1	1 1.
18.0 0.18	5 5.	5. 5.0	5 5.0	8 8.0

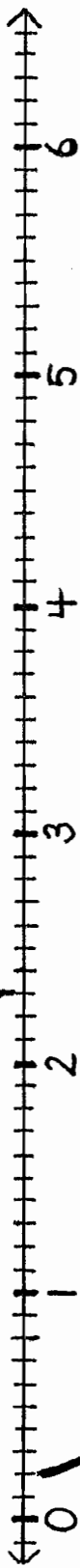
Decimal Number Lines

Here is a number line. Each unit has been divided into tenths. Label each tenth.



Draw a line to locate each decimal number on the number line.

2.3 0.2 2.1 3. 3.8 3.0



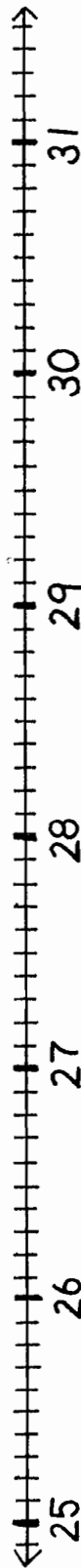
.2 0.5 1.6 3 6.1 5.9 6.2

Equal numbers share the same mark on a number line.

Find the equal numbers. $3 = \underline{\quad} = \underline{\quad}$ and $.2 = \underline{\quad}$

Below is another piece of a number line. Locate each decimal number.

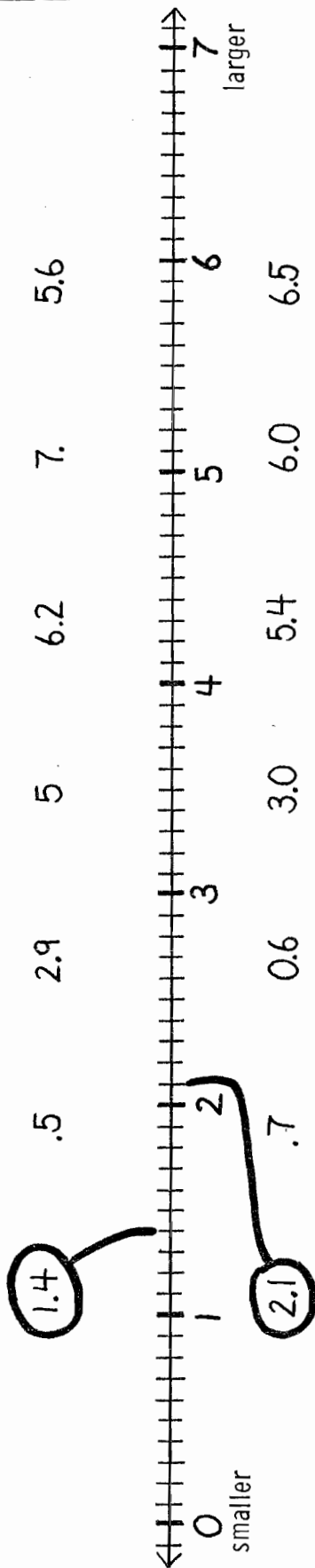
25.3 25.4 27.9 27.5 29.9 30.0 31.4



Comparing Tenths

The numbers on a number line always get larger as you move to the right. The numbers get smaller as you move left.

Locate each number on the number line below.

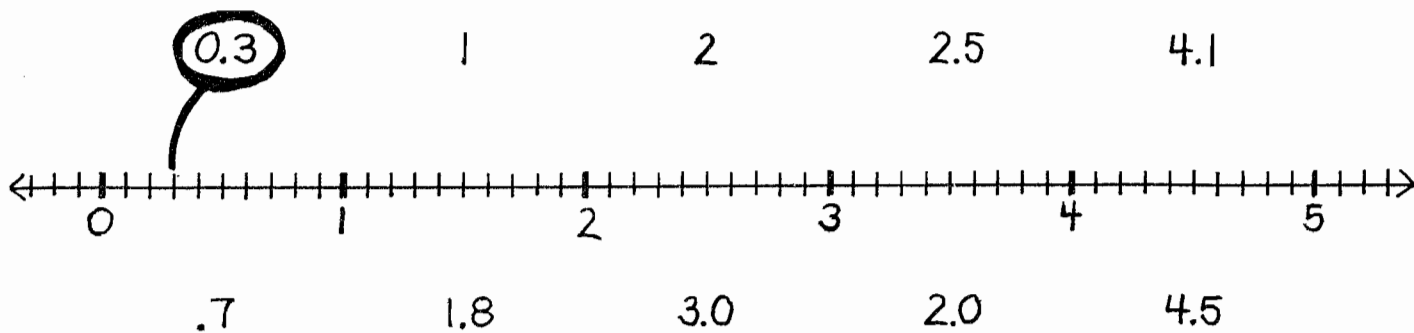


Below are pairs of numbers. Circle the larger number in each pair. The number line will help.

6.2	3.0	2.9	3.0	.5	5	6.2	6.0
0.6	2.1	7.	6.2	7.	.7	0.6	.7
3.0	0.6	6.2	2.9	0.6	6.0	7.	3.0

On the number line, the number to the right is larger.

Locate each number on the number line.



In each problem below, there are three statements. One statement is true, the other two are false. Circle the true statement. Use the number line if you need help.

<u>2.5</u> is greater than 2.0	0.3 is greater than .7	2.5 is greater than 1.8
2.5 is equal to 2.0	0.3 is equal to .7	2.5 is equal to 1.8
2.5 is less than 2.0	0.3 is less than .7	2.5 is less than 1.8
0.3 is greater than 3.0	4.5 is greater than 4.1	2 is greater than 2.0
0.3 is equal to 3.0	4.5 is equal to 4.1	2 is equal to 2.0
0.3 is less than 3.0	4.5 is less than 4.1	2 is less than 2.0

Circle the true statement.

> means "is greater than"	.7 > 4.1	2 > 1.8
= means "is equal to"	.7 = 4.1	2 = 1.8
< means "is less than"	.7 < 4.1	2 < 1.8
4.1 > 1	0.3 > 1	.7 > 1
4.1 = 1	0.3 = 1	.7 = 1
4.1 < 1	0.3 < 1	.7 < 1
		1.8 > 1
		1.8 = 1
		1.8 < 1

Try these without using a number line.

$5.7 > 8.4$	$5.7 > 5.6$	$0.7 > 1.4$	$4.1 > 4.0$
$5.7 = 8.4$	$5.7 = 5.6$	$0.7 = 1.4$	$4.1 = 4.0$
$5.7 < 8.4$	$5.7 < 5.6$	$0.7 < 1.4$	$4.1 < 4.0$
$0.8 > 8.0$	$10.3 > 1.3$	$0.3 > 0.3$	$15 > 15.$
$0.8 = 8.0$	$10.3 = 1.3$	$0.3 = 0.3$	$15 = 15.$
$0.8 < 8.0$	$10.3 < 1.3$	$0.3 < 0.3$	$15 < 15.$

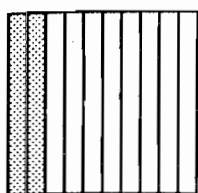
Put $>$, $=$, or $<$ between each pair of numbers to make a true statement.

$3.6 > 2.8$	1.9 9.1	7.2 2.7	1.9 0.9
2.0 2.1	4.0 0.4	0.4 1.4	3.7 7.8
6.7 6.6	1.0 0.1	10 10.	6 6.

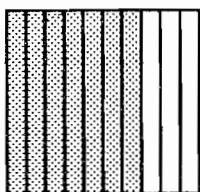
Several of the problems below are tricky. You can make each problem easier by rewriting the numbers using zero as a placeholder. Rewrite each pair of numbers. Use zero as a placeholder. Then use $>$, $=$, or $<$ to make a true statement.

5.2 $\overset{7=7.0}{7.}$ $5.2 < 7.0$	$\overset{2=2.0}{2.}$ 1.7	$\overset{.9=0.9}{.9}$ 1.7	6. 6.0
.5 1.	2. .2	0.3 .3	.7 1.4
14.3 18.	.9 5.	.9 5	1 1.0

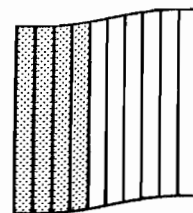
Adding Tenths



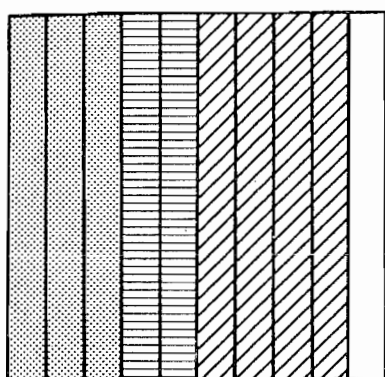
$$\boxed{.2} + \boxed{.8} = 1.0$$



$$\boxed{\text{dotted}} + \boxed{\text{vertical lines}} =$$



$$\boxed{\text{dotted}} + \boxed{\text{vertical lines}} =$$



$$\boxed{\text{dotted}} + \boxed{\text{horizontal lines}} =$$

$$\boxed{\text{horizontal lines}} + \boxed{\text{diagonal lines}} =$$

$$\boxed{\text{diagonal lines}} + \boxed{\text{vertical lines}} =$$

$$\boxed{\text{dotted}} + \boxed{\text{vertical lines}} + \boxed{\text{dotted}} =$$

Do these without pictures.

$$.3 + .6 =$$

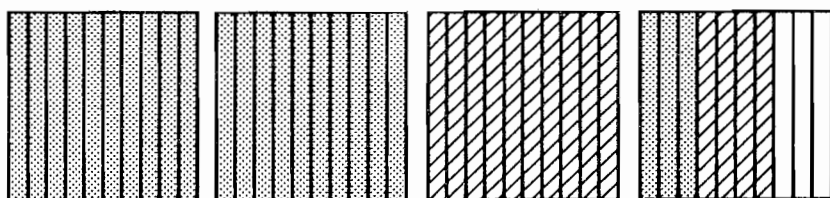
$$.2 + .4 =$$

$$.5 + .2 + .1 =$$

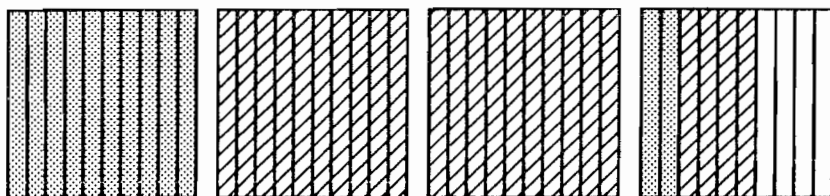
$$.8 + .2 =$$

$$.5 + .5 =$$

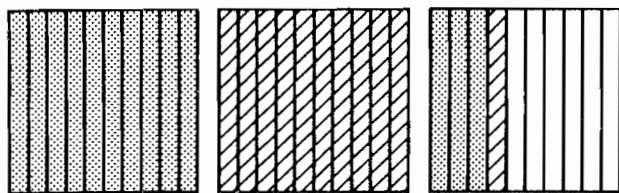
$$.1 + .3 + .6 =$$



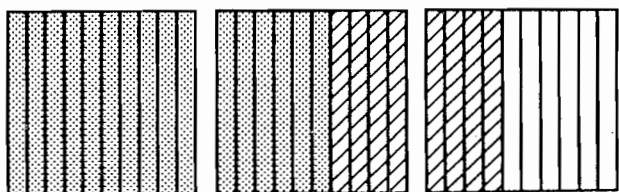
$$\boxed{2.3} + \boxed{1.4} = 3.7$$



$$\boxed{\text{dotted}} + \boxed{\text{diagonal lines}} =$$



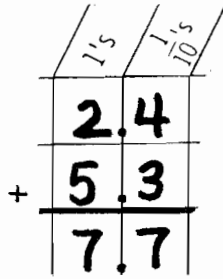
$$\boxed{\text{dotted}} + \boxed{\text{diagonal lines}} =$$



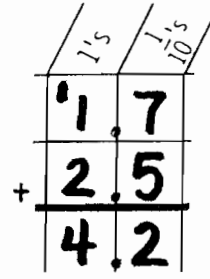
$$\boxed{\text{dotted}} + \boxed{\text{diagonal lines}} =$$

The easiest way to add decimals is to use a place value chart.

$$2.4 + 5.3 = 7.7$$



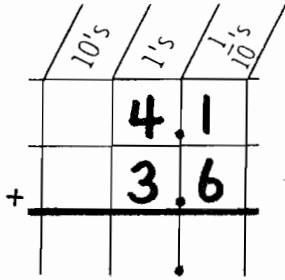
$$1.7 + 2.5 = 4.2$$



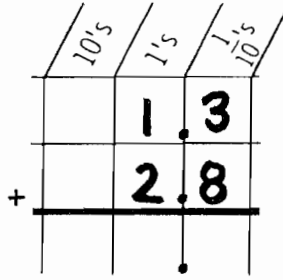
Always line up the decimal points when you add. This way you add tenths to tenths and whole units to whole units. When adding decimals, you regroup just as you do with whole numbers.

You try these.

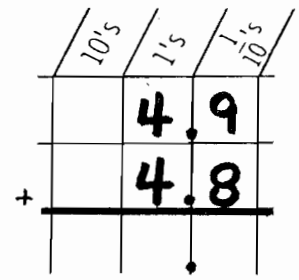
$$4.1 + 3.6 =$$



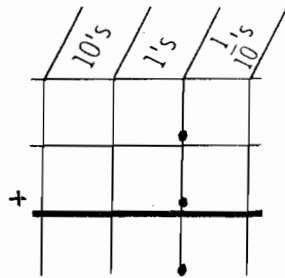
$$1.3 + 2.8 =$$



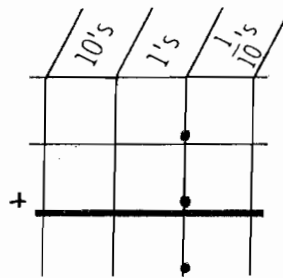
$$4.9 + 4.8 =$$



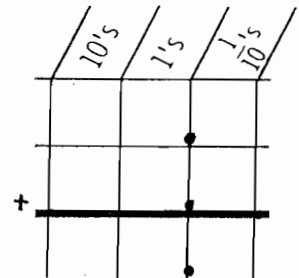
$$64.5 + 3.1 =$$



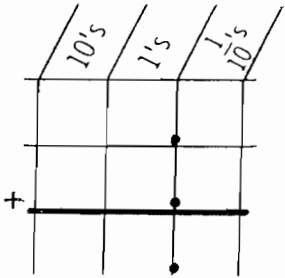
$$2.4 + 3.7 =$$



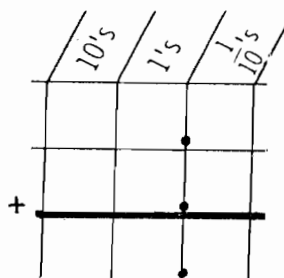
$$3.0 + 42.1 =$$



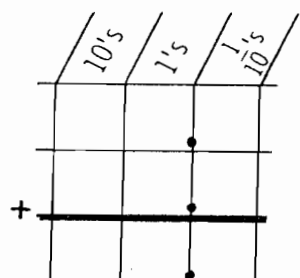
$$7.9 + 3.6 =$$



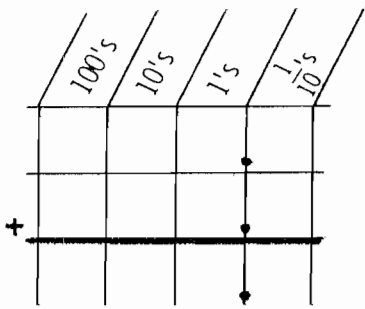
$$5.8 + 12.6 =$$



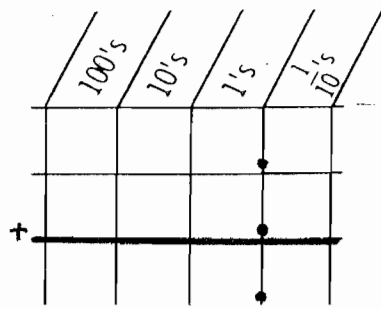
$$2.3 + 18.7 =$$



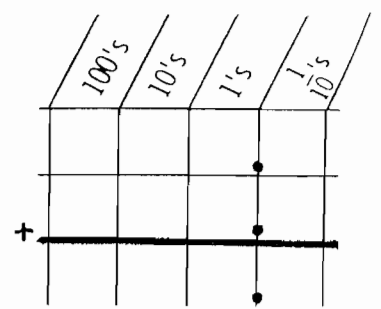
$21.4 + 35.1 =$



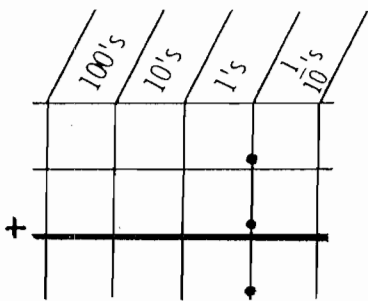
$34.7 + 26.5 =$



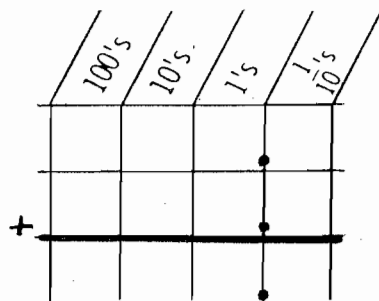
$183.6 + 52.5 =$



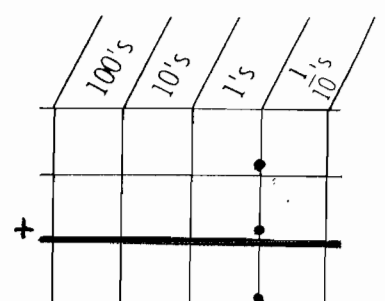
$32.9 + 43.2 =$



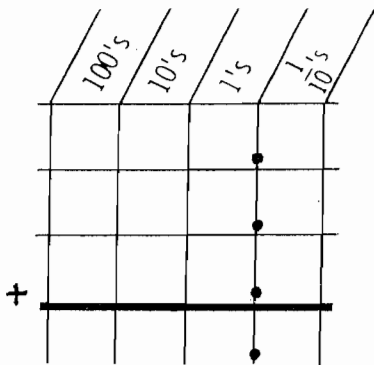
$141.4 + 219.1 =$



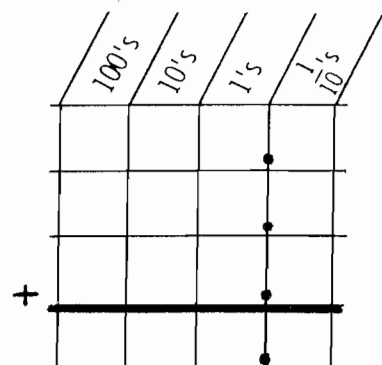
$10.1 + 312.4 =$



$81.6 + 432.5 + 17.2 =$

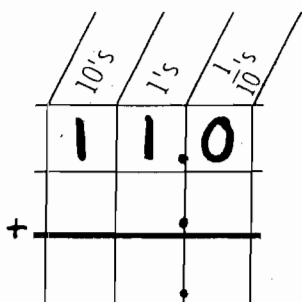


$90.7 + 335.4 + 258.6 =$



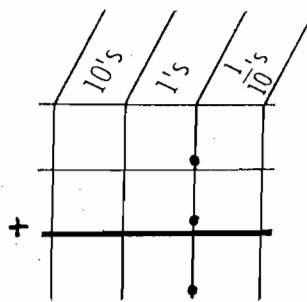
Remember
11 = 11.0

$11 + 42.1 =$

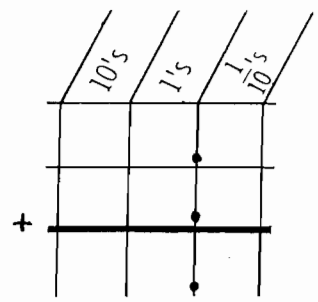


9 = 9.0

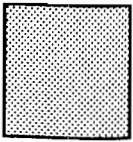
$9 + 33.4 =$



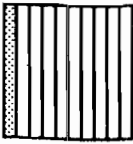
$12.1 + 28 =$



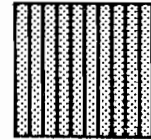
Hundredths



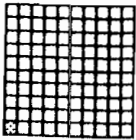
One whole square is shaded.



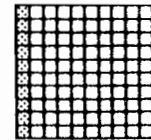
Divide a square into ten equal parts to make tenths. One tenth ($\frac{1}{10}$) of the square is shaded.



Ten tenths together make one whole square

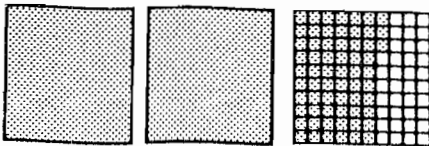


Divide a square into one hundred equal parts to make hundredths. One hundredth ($\frac{1}{100}$) is shaded.



Ten hundredths together make one tenth.

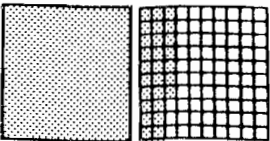
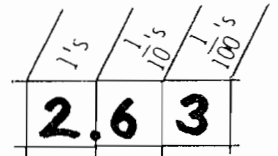
How many whole squares, tenth squares and hundredth squares are shaded?



How many whole squares? 2

How many more tenths? 6

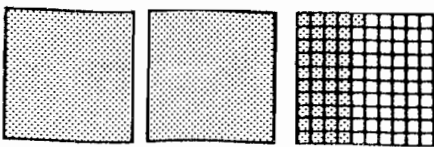
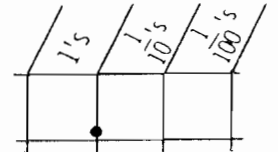
How many more hundredths? 3



How many whole squares?

How many more tenths?

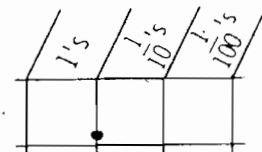
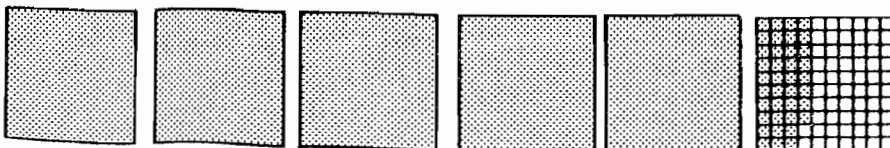
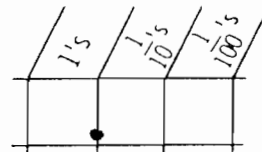
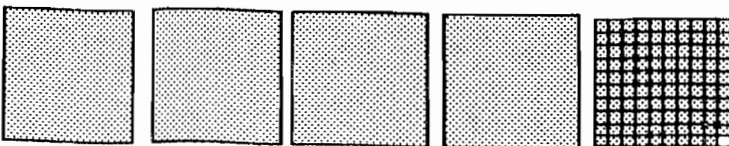
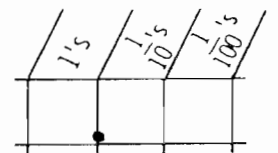
How many more hundredths?



How many whole squares?

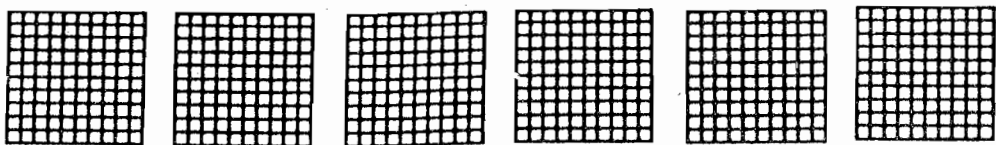
How many more tenths?

How many more hundredths?

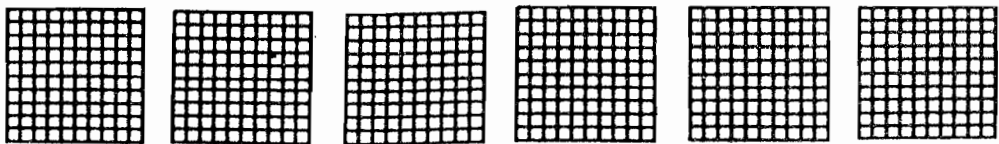


You do the shading.

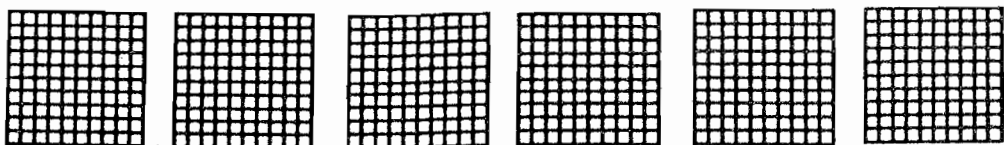
4.37



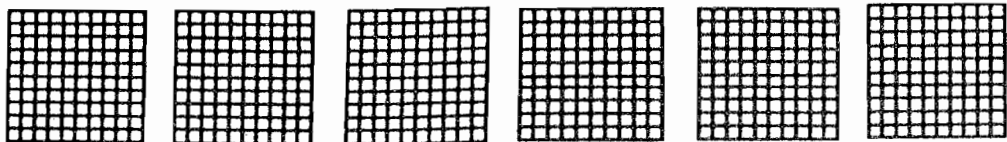
2.15



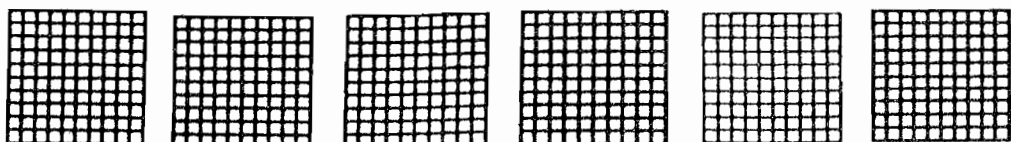
1.83



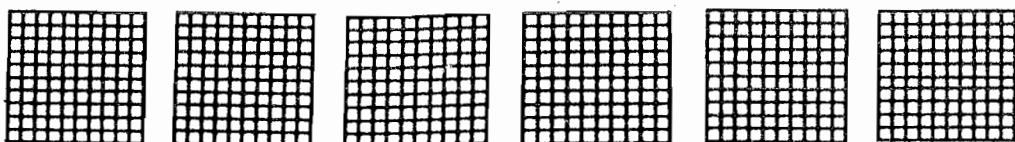
0.25



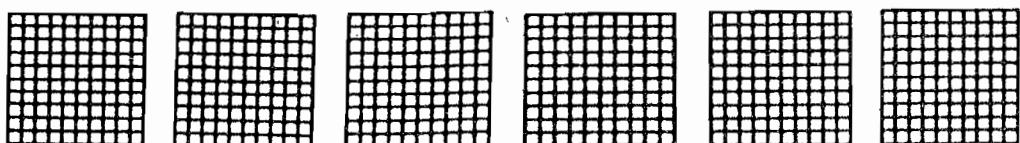
0.99



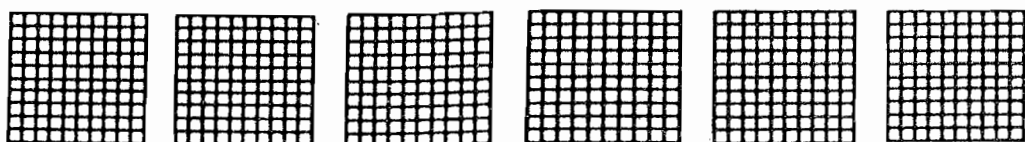
3.08



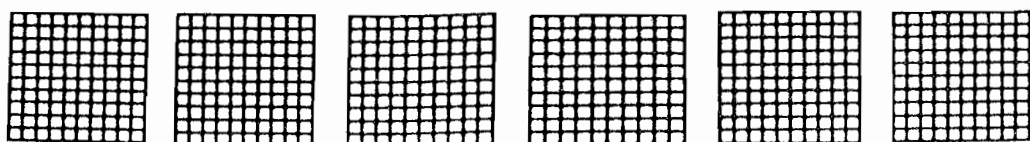
5.6



0.01



0.5



Decimals and Money

We use decimals to count money. Whole units are dollars. One tenth of a dollar is a dime. One hundredth of a dollar is a penny.

How much money is pictured in each problem?

\$ 3.65

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____

\$ _____



\$ _____



\$ _____



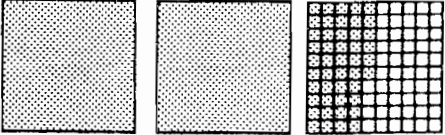
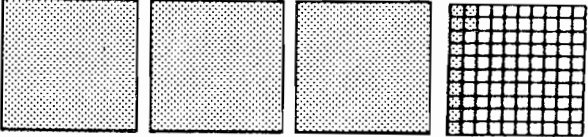
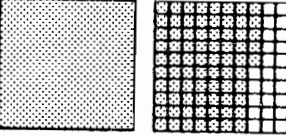
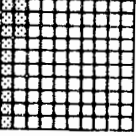
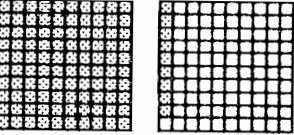
\$ _____



\$ _____

Expanded Notation with Hundredths

Each picture below represents a decimal number. Write the decimal number and then rewrite it in expanded notation.

Picture	Decimal Number	Expanded Notation
	<u>2.46</u>	$= 2 + \frac{4}{10} + \frac{6}{100}$
	_____	=
	_____	=
	_____	=
	_____	=

Be careful!

Use the place value chart to rewrite each number below in expanded notation.

	$\times 100$	$\times 10$	$\times 1$	$\frac{1}{10}$	$\frac{1}{100}$	Decimal Number	Expanded Notation
	1	3	5	6	2	135.62	$= 100 + 30 + 5 + \frac{6}{10} + \frac{2}{100}$
	4	1	7	8	5	417.85	=
		3	9	6	1	39.61	=
	2	0	3	9	4	203.94	=
	2	0	0	0	4	200.04	=
			0	0	1	0.01	=

Rewrite each decimal number below using expanded notation.

Decimal Number Expanded Notation

348.17 =

265.86 =

503.86 =

37.99 =

12.25 =

Rewrite each number below using expanded notation. Then add the whole numbers and add the fractions to write the decimal as a mixed number.

Decimal Number

Expanded Notation

Mixed Number

284.52 = $200 + 80 + 4 + \frac{5}{10} + \frac{2}{100}$

$200 + 80 + 4$
= $284 \frac{52}{100}$

$\frac{5}{10} \times \frac{10}{10} = \frac{50}{100}$
$+$
$\frac{2}{100} = \frac{2}{100}$
<hr/>
$\frac{52}{100}$

371.45 =

=

283.19 =

=

705.25 =

=

841.23 =

=

56.82 =

=

17.05 =

=

26.04 =

=

You don't need expanded notation to rewrite decimals with hundredths as mixed numbers. Simply copy the whole part, then rewrite the fraction part as a common fraction.

57.98 = $57 \frac{98}{100}$

26.52 =

39.04 =

32.46 =

258.83 =

151.07 =

18.35 =

1.68 =

2.01 =

Word Names for Hundredths

To express a decimal number in words, follow these three steps:

1. Name the whole part.
2. Use "and" for the decimal point.
3. Name the fraction part.

Decimal Number	Mixed Number	Word Name
12.35	$12 \frac{35}{100}$	twelve and thirty-five hundredths
20.16		
34.48		
100.51		
87.19		
0.25		
.25		
1.08		
0.01		
15.7		
105.6		

Watch out!

Make up some of your own.

Place Value and Hundredths

Write each number in the chart.

- a) 37.16
- b) 14532.08
- c) $83 \frac{25}{100}$
- d) $3265 \frac{17}{100}$
- e) $452 \frac{6}{100}$
- f) $452 \frac{6}{10}$
- g) $\frac{75}{100}$
- h) $\frac{1}{10}$
- i) 9
- j) six and eighty-one hundredths
- k) five hundred twenty-one and four tenths
- l) twelve and sixteen hundredths
- m) one hundred forty-six and three hundredths

	ten thousands (10,000's)	thousands (1,000's)	hundreds (100's)	tens (10's)	ones (1's)	tenths ($\frac{1}{10}$'s)	hundredths ($\frac{1}{100}$'s)
a)				3	7	.	1 6
b)						.	
c)						.	
d)						.	
e)						.	
f)						.	
g)						.	
h)						.	
i)						.	
j)						.	
k)						.	
l)						.	
m)						.	

Several of the numbers in the chart don't show hundredths. One number doesn't even show tenths. Put zeros in the empty tenths and hundredths places as placeholders. The first one should look like this:

		4	5	2	.	6	0
--	--	---	---	---	---	---	---

Now rewrite each number below to show hundredths.

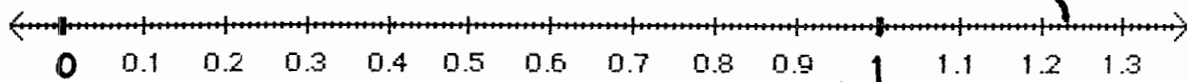
452.6	.1	9	521.4	10
452.60				
1.	.5	2.6	37.8	0.4

Comparing Hundredths

Here is a number line showing hundredths. The whole numbers and the tenths are labeled. There is not enough room to label hundredths.

Locate each number on the number line.

0.16 1.23 1.31 0.09 0.92 1.08



You have just located the numbers below on the number line. Now use $>$, $=$, or $<$ to make true statements. Remember, larger numbers are to the right and smaller numbers are to the left on the number line.

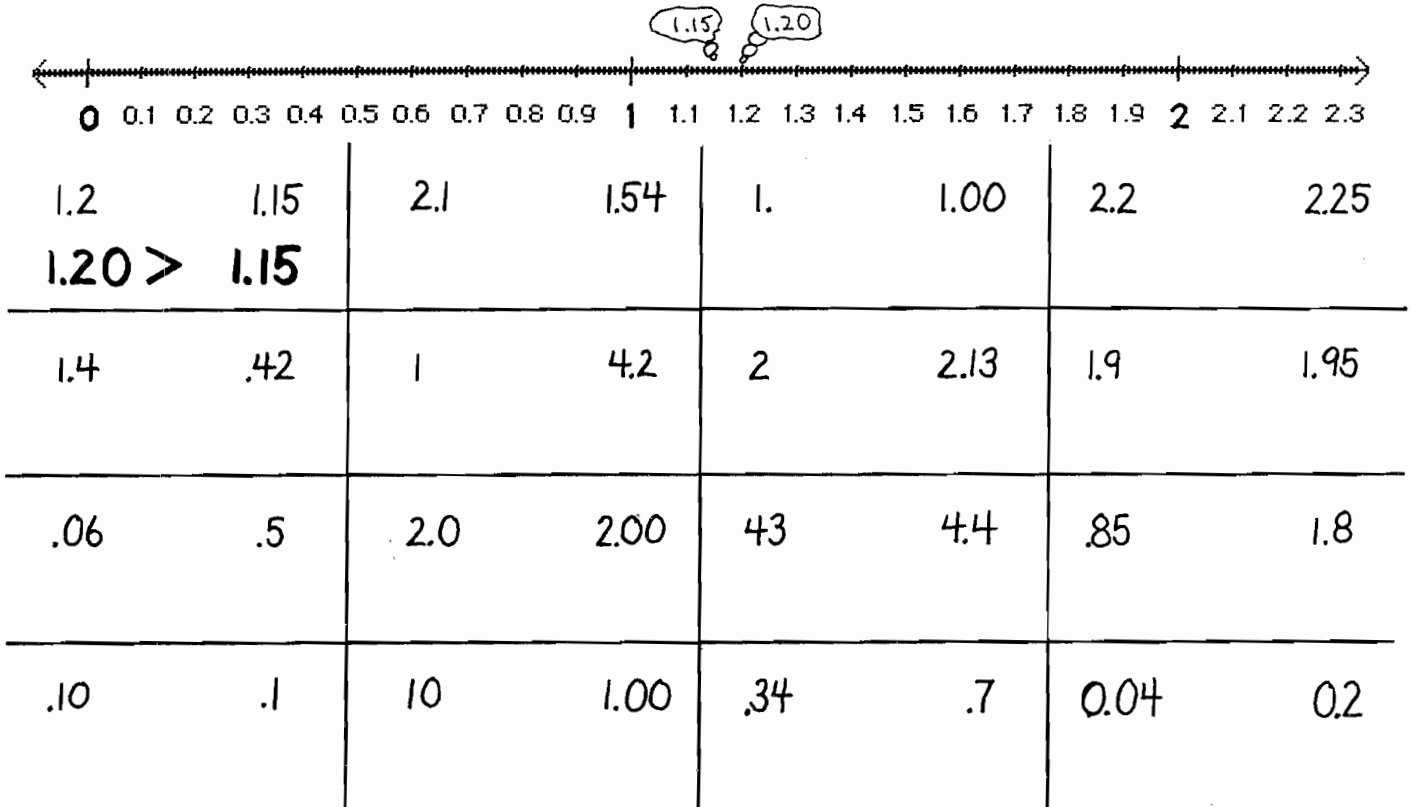
0.16 < 0.92	0.92 1.08	1.31 0.09	0.16 1.08
0.92 0.09	1.08 0.92	0.09 1.23	0.92 0.16
1.23 1.08	1.31 0.16	0.16 0.09	1.23 0.92

Can you do these without a number line?

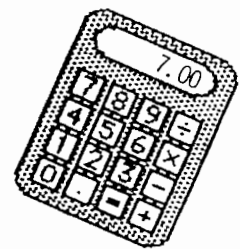
1.02 > 0.10	2.50 2.05	0.96 2.24	1.00 0.99
4.32 4.25	5.10 5.01	2.34 4.23	2.78 2.90
9.99 10.00	9.00 1.09	1.41 1.60	1.64 0.98
1.63 1.72	4.31 4.29	1.34 $\overset{\circ}{\circ}{\circ} \begin{matrix} .92 = 0.92 \\ .92 \end{matrix}$	0.03 0.20

Sometimes it is hard to decide which decimal number is larger and which is smaller. You can rewrite the numbers to show the same number of decimal digits using zeros as placeholders. Then it's easy to tell.

Rewrite each pair of numbers below so that both numbers show tenths or both numbers show hundredths. Then use $>$, $=$ or $<$ to make true statements. Use the number line if you need help.



If you have a calculator, do the section below. If you do not have a calculator, skip it or do it when you can use a calculator.



Press these buttons:	The display shows:	Then press:	The display shows:	Then clear:
7 . 0 0	<input type="text"/>	=	<input type="text"/>	C
5 . 4 0	<input type="text"/>	=	<input type="text"/>	C
1 2 . 0 0	<input type="text"/>	=	<input type="text"/>	C
4 6 . 0 4	<input type="text"/>	=	<input type="text"/>	C

Adding Hundredths

Adding decimals with hundredths is easy if you use a place value chart.

$10.43 + 5.88 = 16.31$

	10's	1's	$\frac{1}{10}$'s	$\frac{1}{100}$'s
	1	0	4	3
+		5	8	8
	1	6	3	1

$26.08 + 15.47 =$

	10's	1's	$\frac{1}{10}$'s	$\frac{1}{100}$'s
+				

$9.65 + 48.67 =$

	10's	1's	$\frac{1}{10}$'s	$\frac{1}{100}$'s
+				

$9.42 + 10.86 =$

	10's	1's	$\frac{1}{10}$'s	$\frac{1}{100}$'s
+				

$21.25 + 52.57 =$

	10's	1's	$\frac{1}{10}$'s	$\frac{1}{100}$'s
+				

$31.91 + 22.74 =$

	10's	1's	$\frac{1}{10}$'s	$\frac{1}{100}$'s
+				

$\$31.11 + \$4.23 =$

	tens of dollars	dollars	dimes	pennies
\$				
+				
\$				

$\$1.42 + \$2.08 =$

	tens of dollars	dollars	dimes	pennies
\$				
+				
\$				

$\$84.08 + \$10.36 =$

	tens of dollars	dollars	dimes	pennies
\$				
+				
\$				

$348.24 + 96.87 =$

	100's	10's	1's	$\frac{1}{10}$'s	$\frac{1}{100}$'s
+					

$253.96 + 84.35 =$

	100's	10's	1's	$\frac{1}{10}$'s	$\frac{1}{100}$'s
+					

$72.89 + 135.41 =$

	100's	10's	1's	$\frac{1}{10}$'s	$\frac{1}{100}$'s
+					

You do not need a place value chart to add decimals. However, you must always line up the decimal points when you add. That way you'll add tens to tens, ones to ones, tenths to tenths, and hundredths to hundredths.

$$34.02 + 25.31 = 59.33$$

	100's	10's	1's	$\frac{1}{10}$'s	$\frac{1}{100}$'s
		3	4	0	2
+		2	5	3	1
		5	9	3	3

Line up the decimal points.

$$\begin{array}{r} 34.02 \\ + 25.31 \\ \hline 59.33 \end{array}$$

$$12.60 + 53.72 = 66.32$$

	100's	10's	1's	$\frac{1}{10}$'s	$\frac{1}{100}$'s
		1	2	6	0
+		5	3	7	2
		6	6	3	2

$$\begin{array}{r} 12.60 \\ + 53.72 \\ \hline 66.32 \end{array}$$

Add each pair below without place value charts. Be sure to line up the decimal points.

$$9.13 + 2.46 =$$

$$\begin{array}{r} 9.13 \\ + 2.46 \\ \hline \end{array}$$

$$6.35 + 2.41 =$$

$$\begin{array}{r} 35 \\ + 41 \\ \hline \end{array}$$

$$7.89 + 4.21 =$$

$$\begin{array}{r} 89 \\ + 21 \\ \hline \end{array}$$

$$\$12.42 + \$31.77 =$$

$$\begin{array}{r} 12.42 \\ + 31.77 \\ \hline \end{array}$$

$$\$72.49 + \$17.35 =$$

$$\begin{array}{r} 72.49 \\ + 17.35 \\ \hline \end{array}$$

$$\$114.06 + \$17.48 =$$

$$314.35 + 271.82 =$$

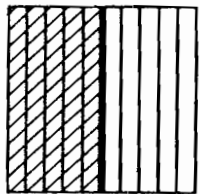
$$148.40 + 204.72 =$$

$$87.91 + 100.00 =$$

Important Decimal Fractions

The shaded part of each square below can be named three ways, as a common fraction, as a fraction with tenths or hundredths, or as a decimal fraction.

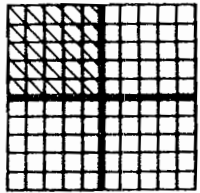
Finish rewriting each common fraction below as a decimal fraction.



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

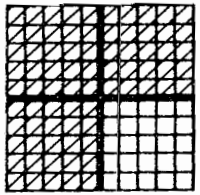
Common Fraction Decimal Fraction

$$\frac{1}{2} = \underline{.5}$$



$$\frac{1}{4} = \frac{\quad}{100} = \underline{\quad}$$

$$\frac{1}{4} = \underline{\quad}$$



$$\frac{3}{4} = \frac{\quad}{100} = \underline{\quad}$$

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

Now that you can rewrite $\frac{1}{2}$, $\frac{1}{4}$ and $\frac{3}{4}$ as decimal fractions, you can rewrite mixed numbers like $3\frac{1}{2}$, $7\frac{1}{4}$ and $21\frac{3}{4}$ as decimal numbers. Simply copy the whole part and rewrite the fraction part.

$$3\frac{1}{2} = 3.5$$

copy rewrite

$$7\frac{1}{4} = 7.25$$

copy rewrite

$$21\frac{3}{4} = 21.75$$

copy rewrite

Rewrite each common fraction or mixed number as a decimal number.

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

$$\frac{1}{4} = .25$$

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

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

$$1\frac{1}{2} = 1.5$$

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

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

$$8\frac{1}{4} =$$

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

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

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

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

$$7\frac{1}{2} =$$

$$26\frac{1}{4} =$$

$$10\frac{3}{4} =$$

$$25\frac{1}{4} =$$

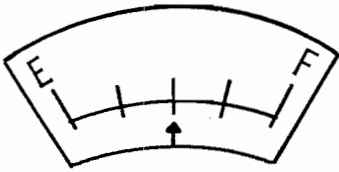
$$18\frac{1}{2} =$$

$$40\frac{1}{4} =$$

$$100\frac{3}{4} =$$

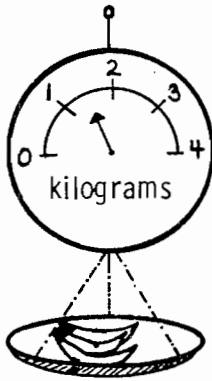
$$3\frac{3}{4} =$$

What decimal number best fits each picture?



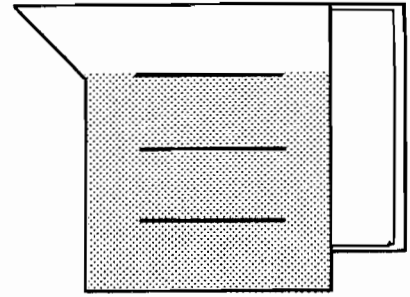
The gas tank is about

.5 full.
 .25 / .5 / .75



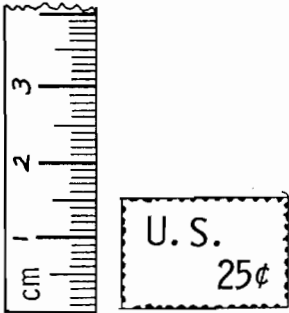
The bananas weigh about

_____ kilograms.
 1.5 / 2.5 / 3.5

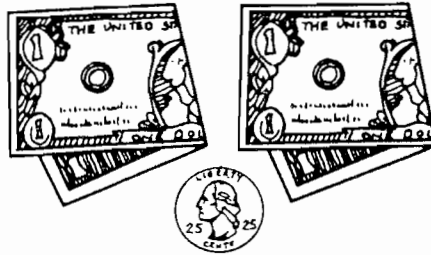


The measuring cup is

about _____ full.
 .25 / .5 / .75

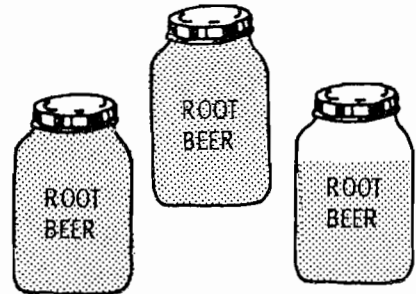


The stamp is about _____
 centimeters tall.

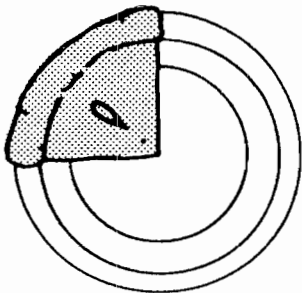


How much money?

\$ _____



There are about _____
 root beer bottles left.



How many pies are left?



There are _____
 Mars bars left.



How much money?

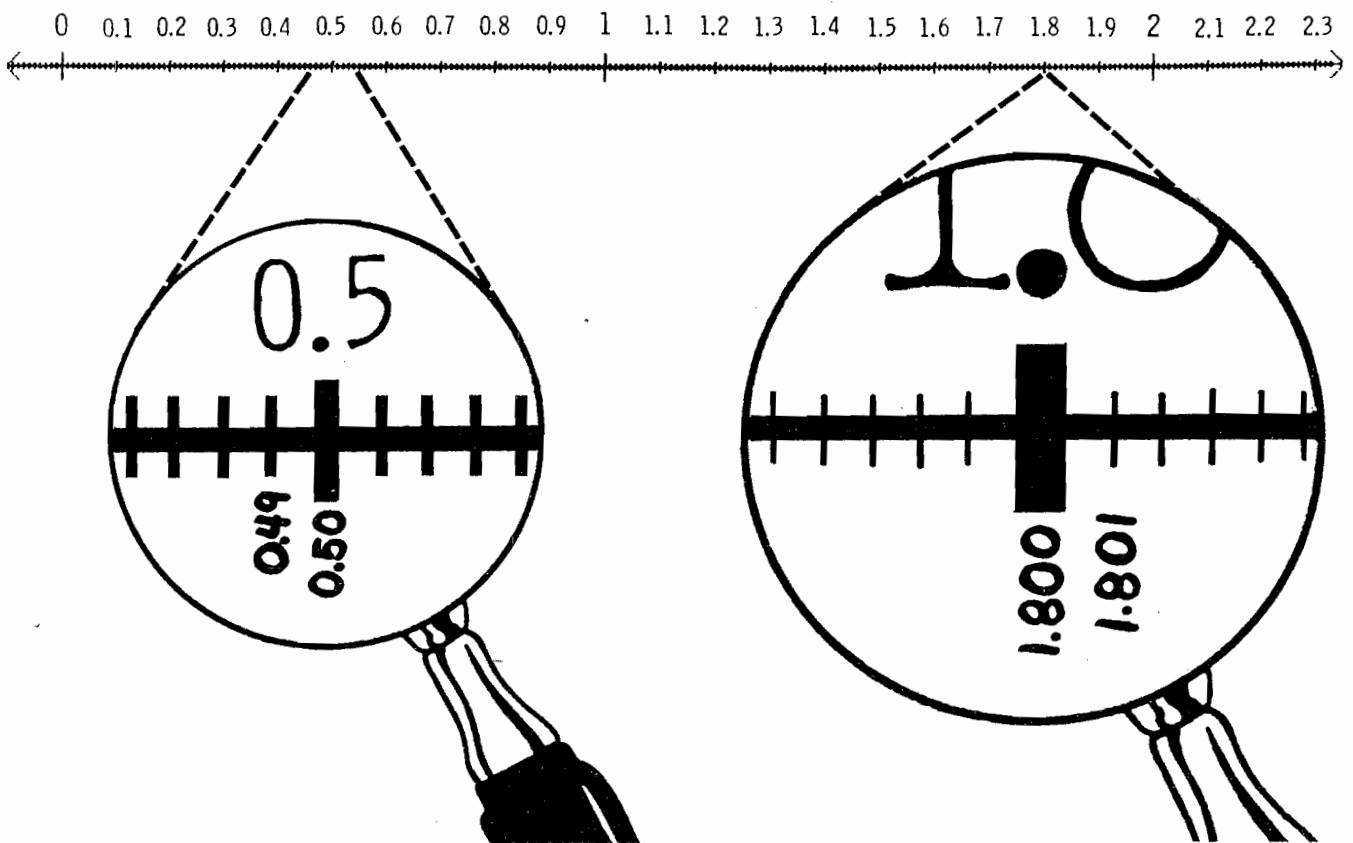
\$ _____

Thousandths

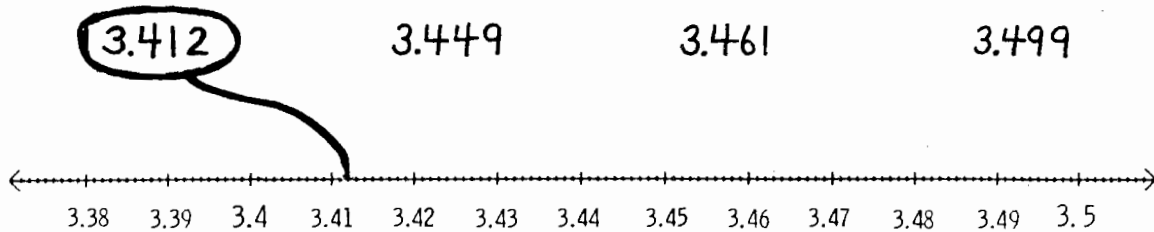
A unit divided into ten equal parts makes tenths. You can divide each tenth into ten equal parts to make hundredths. You can divide each hundredth into ten equal parts to make _____.

Below is a number line. Each unit has been divided and labeled with tenths. A section of the number line near 0.5 has been magnified to show hundredths. Another section near 1.8 has been magnified to reveal thousandths.

Label the magnified marks on the number line with hundredths and thousandths.



Locate each number on the number line below.



3.380

3.432

3.475

3.500

Tenths, Hundredths and Thousandths as Mixed Numbers

When you read a decimal number aloud or write its word name, you express the number just as if it were a mixed number or a common fraction.

Write each decimal number that appears in the place value charts as a mixed number or common fraction.

Step 1 Copy the whole part.

Step 2 Write the fraction part as a common fraction. The numerator (top) is the number to the right of the decimal point. The place of the last decimal digit names the denominator (bottom).

whole part			fraction part			
100's	10's	1's	1/10's	1/100's	1/1000's	
	2	7	3	8	2	$27\frac{382}{1000}$
1	3	6	5	4	3	_____
	8	7	2	0	5	_____
		1	3	4	6	_____
	2	0	0	3	5	_____
	1	5	2	6		_____
	2	3	4	7		_____
		3	6	2		_____

100's	10's	1's	1/10's	1/100's	1/1000's	
		8	0	7		$8\frac{7}{100}$
	1	2	0	1		_____
	4	2	3			_____
		7	6			_____
			4	0		_____
			2	5		_____
		0	5			_____
			5			_____

Write each decimal number below as a mixed number or common fraction. Count decimal digits to determine the fraction's denominator. One decimal digit means tenths, two means hundredths, three means thousandths.

$50.34 = 50\frac{34}{100}$

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

$2578.1 =$

$8.125 =$

$.23 =$

$902.035 =$

$0.537 =$

$.472 =$

$4.09 =$

$142.3 =$

$1.6 =$

$0.001 =$

$15.35 =$

$1.06 =$

$0.0001 =$

$36.85 =$

$1.006 =$

$0.00001 =$

Can you guess these?

Word Names for Tenths, Hundredths, Thousandths

	whole part			fraction part		
	hundreds	tens	ones	tenths	hundredths	thousandths
a)	3	2	0	1	0	7
b)	6	0	9	2	4	0
c)	4	0	3	5	6	
d)		7	2	3	8	
e)	6	5	0	6	0	4
f)		3	6	7		
g)		4	5	0	1	
h)	2	8	0	0	4	9
i)		1	2	0	2	3
j)			1	0	0	5

The decimal numbers in the chart show tenths, hundredths and thousandths.

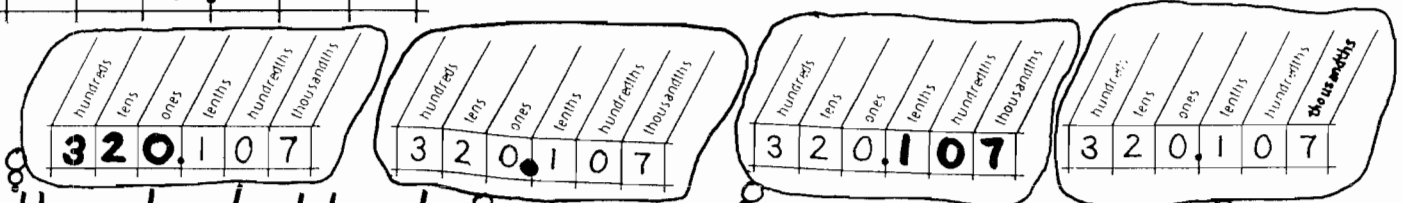
Follow the four steps below to write the word name for each number.

Step 1 Write the number to the left of the decimal point. It names the whole part of the number.

Step 2 Write "and" for the decimal point.

Step 3 Write the number to the right of the decimal point.

Step 4 Write the place name of the last decimal digit. This completes the fraction part of the number.



a) three hundred twenty and one hundred seven thousandths

b) _____

c) _____ hundredths

d) _____

e) _____

f) _____

g) _____

h) _____

i) _____

j) _____

Adding Thousandths

You can add decimals with thousandths just like you add other decimals.

$$14.532 + 7.456 = \mathbf{21.988}$$

	10 's	1 's	$\frac{1}{10}$'s	$\frac{1}{100}$'s	$\frac{1}{1000}$'s
	1	4	5	3	2
+		7	4	5	6
	2	1	9	8	8

$$9.361 + 14.634 =$$

	10 's	1 's	$\frac{1}{10}$'s	$\frac{1}{100}$'s	$\frac{1}{1000}$'s
+					

$$6.458 + 4.836 =$$

	10 's	1 's	$\frac{1}{10}$'s	$\frac{1}{100}$'s	$\frac{1}{1000}$'s
+					

$$12.035 + 8.184 =$$

	10 's	1 's	$\frac{1}{10}$'s	$\frac{1}{100}$'s	$\frac{1}{1000}$'s
+					

Try a few problems without place value charts. What must you do with the decimal points? _____

$$4.614 + 2.375 =$$

$$9.162 + 3.475 =$$

$$2.723 + 9.152 =$$

$$13.107 + 2.534 =$$

$$473.462 + 58.395 =$$

$$7.599 + 266.782 =$$

Beyond Thousandths

As you might guess, you can divide each thousandth into ten equal parts to make ten thousandths. Ten thousandths can be divided again to make hundred thousandths. Hundred thousandths can be divided to make millionths, and so on, and so on, and so on.

Write each number in the chart.

a) 6.430297

b) 382.7499

c) $\frac{1}{100,000}$

d) fifty-four and one thousand, nine hundred eighty-six ten thousandths

e) two hundred seven and forty-three hundred thousandths

f) sixteen and five millionths

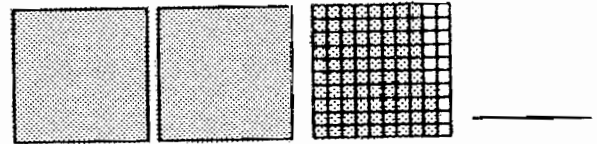
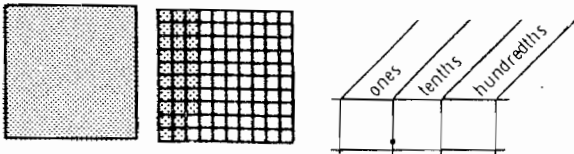
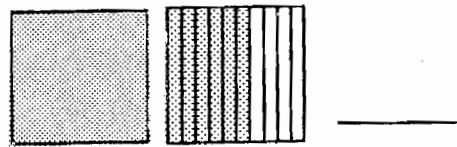
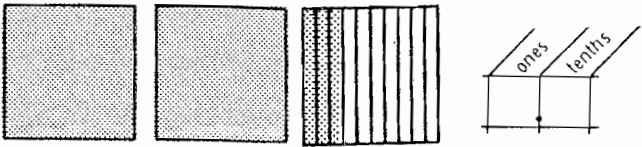
g) one millionth

	hundreds	tens	ones	tenths	hundredths	thousandths	ten thousandths	hundred thousandths	millionths
a)			.						
b)			.						
c)			.						
d)			.						
e)			.						
f)			.						
g)			.						

Match.

3 in the tenths place	652.533878
4 in the thousandths place.	31.361026
5 in the tens place	.875313
5 in the millionths place	249.654661
7 in the hundredths place	7.480495
5 in the hundreds place	12.102506
9 in the ten thousandths place	6.253722
0 in the hundred thousandths place	91.011937
6 in the ones place	583.898584

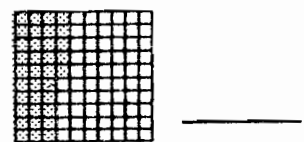
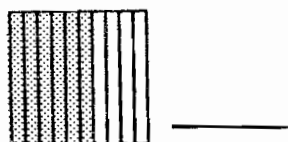
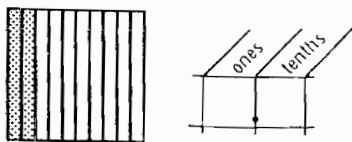
How many squares are shaded?



Fill in the table below.

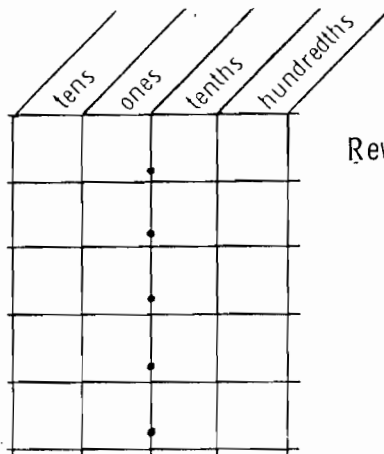
Decimal Number	Mixed Number	Word Name
3.2		
		Seven and six tenths
		one hundred and thirty-two hundredths
	$4 \frac{58}{100}$	

What decimal fraction of each square is shaded?



Put each number in the place value chart.

13.4
two and nine tenths
seventy three and
twelve hundredths
 $8 \frac{6}{100}$
6



Rewrite each number using expanded notation.

62.3 =

248.7 =

53.29 =

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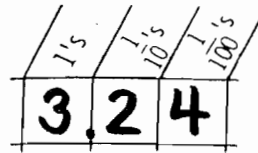
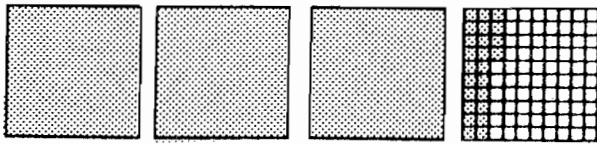


90000>

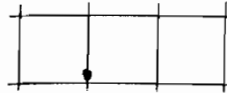
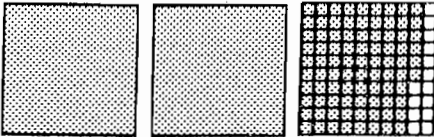
THE REPORT CARD 099
KEY TO DECIMALS BK 1
KEY68421 75401 \$2.50

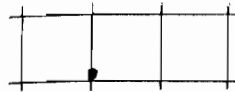
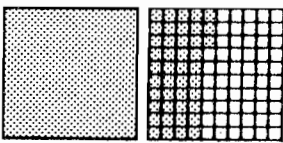
How many squares, tenths and hundredths are shaded?

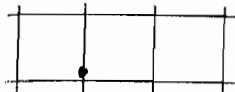
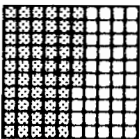
Decimal Number

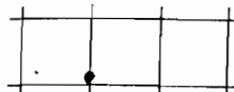
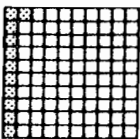


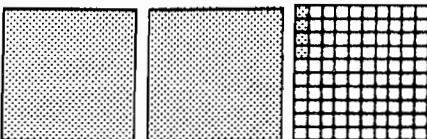
3.24

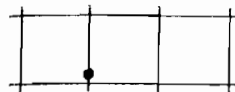
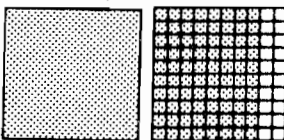




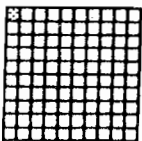


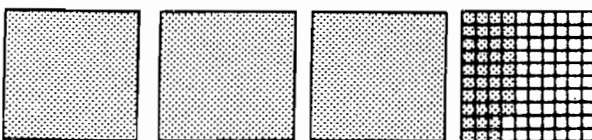






Are you sure?

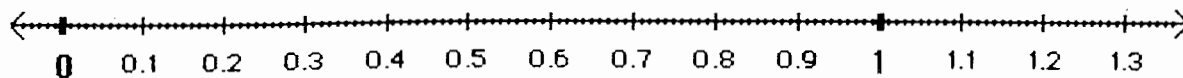




Practice Test - Page 2

Locate each number on the number line.

0.3 0.60 .3 0.46 0.9 1.0 1.34 .95

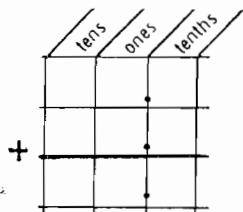


Use $>$, $=$, or $<$ to make a true statement.

0.9	1.0	0.46	0.60	1.34	.95	0.3	.3	1.2	1.9
4.1	3.8	5	5.0	.9	4	8.05	85	10	.20

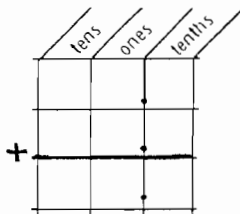
Add.

$$3.4 + 5.3 =$$



$$\begin{array}{r} 6.31 \\ + 4.98 \\ \hline \end{array}$$

$$13.7 + 2.8 =$$



$$\begin{array}{r} 4.825 \\ + 13.767 \\ \hline \end{array}$$

$$9.6 + 24.2 =$$

$$\$5.52 + \$18.96 =$$

Use the decimal fractions for $\frac{1}{2}$, $\frac{1}{4}$, and $\frac{3}{4}$ to rewrite each mixed number as a decimal number.

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

$$100\frac{1}{2} =$$

$$17.38 =$$

$$5.275 =$$

$$15\frac{3}{4} =$$

$$0\frac{1}{2} =$$

$$.7 =$$

$$0.001 =$$