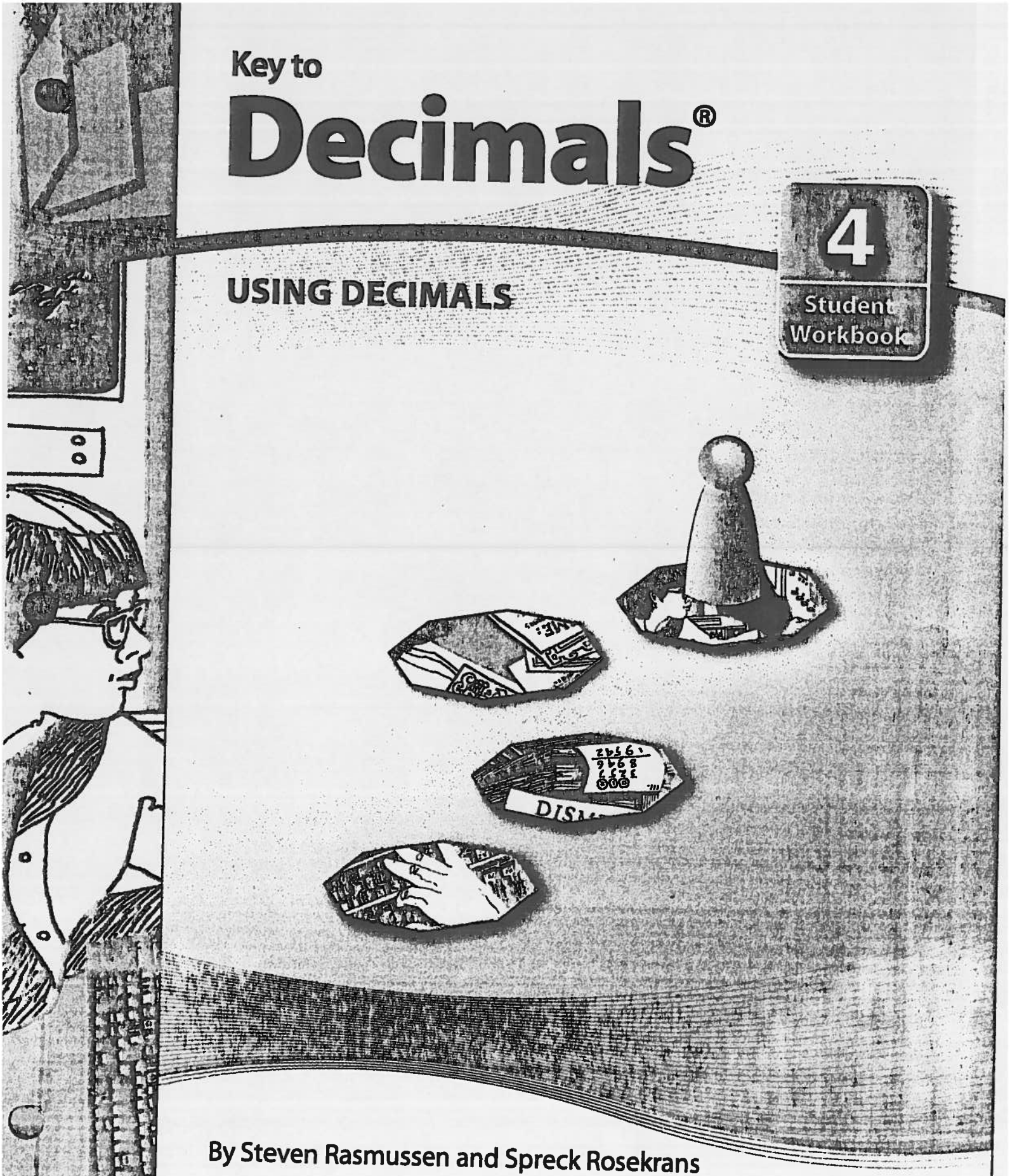
Key to

Decimals®

4

Student Workbook

USING DECIMALS



By Steven Rasmussen and Spreck Rosekrans

Name _____ Class _____

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About the Cover:

In his 1585 essay on decimal fractions, Simon Stevin advocated that "all measures—linear, liquid, dry, and monetary—be divided equally" into units, tenths, hundredths, and so on, based on the concept of decimal fractions. Although other scholars were slow to see the importance of Stevin's work, the idea finally caught fire. In the four hundred years since their invention by Stevin, decimal numbers have become the standard in the international language of science and commerce.

Two hundred years after the publication of Stevin's work, the Continental Congress of the newly formed United States adopted the use of the decimal system in coinage, dividing the dollar (unit) into dimes (tenths) and cents (hundredths).

At roughly the same time, also inspired by a revolutionary spirit, the French created the metric system of measure, with all units based on divisions and multiples of ten. The metric system, known formally as the Système International d'Unités (S.I.), has become the worldwide standard of measurement. While the United States still uses the old English system, metric measurements are often found in stores, factories, offices, and schools. Metric units have replaced English units in laboratories and scientific work.

In the last decade, calculators, computers and other instruments with digital displays have become commonplace. All of these devices display quantities less than one using decimal fractions instead of common fractions. Many use decimal numbers in scientific notation to display large numbers as well. As time goes on, it becomes more and more important to be able to understand and use decimals.

On the cover of this booklet, Dr. Sandra Faber, an astronomer at the University of California at Santa Cruz, works in the observation room of the Lick Observatory on Mt. Hamilton outside San Jose, Calif. Like scientists throughout the world, Dr. Faber uses decimal numbers and the metric system of measurement in her calculations. Decimal notation is useful for expressing the very large numbers used in astronomy as well as for expressing very small numbers. Since astronomers around the world share information continuously, it is important that they share a common system of calculation and measurement.

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Adding, Subtracting, Multiplying, Dividing Review

Add or subtract. Be sure to line up the decimal points.

$$\begin{array}{r} 1.6 \\ +\ 2.4 \\ \hline \end{array} \qquad \begin{array}{r} 6.5 \\ -\ 1.3 \\ \hline \end{array} \qquad \begin{array}{r} 12.04 \\ +\ 6.4 \\ \hline \end{array} \qquad \begin{array}{r} 14.2 \\ -\ 0.87 \\ \hline \end{array}$$

$12.2 + 17.1 =$ $\qquad$ $92.46 - 7.2 =$ $\qquad$ $14.6 - 1.83 =$

120 = 120.

$120 + 62.1 =$ $\qquad$ $17.5 + 6 =$ $\qquad$ $9 - .3 =$

Multiply. Remember, the total number of decimal digits in the factors equals the number of decimal digits in the product.

$$\begin{array}{r} {\scriptstyle 2} \\ .76 \\ \times\ .4 \\ \hline .304 \end{array}$$

2 decimal digits + 1 decimal digit = 3 decimal digits

$$\begin{array}{r} .6 \\ \times\ .8 \\ \hline \end{array} \qquad \begin{array}{r} 1.24 \\ \times\ 4 \\ \hline \end{array} \qquad \begin{array}{r} .12 \\ \times\ .4 \\ \hline \end{array}$$

$1.25 \times 5 =$ $\qquad$ $1.25 \times .5 =$ $\qquad$ $2.4 \times 1.5 =$

Dividing Review

Divide. When dividing by a whole number, the decimal point in the answer goes directly above the decimal point in the product.

$2\overline{)2.8}$ $3\overline{)3.6}$ $4\overline{)4.4}$ $4\overline{)5.6}$

$9.8 \div 2 =$ $1.5 \div 3 =$ $6.25 \div 5 =$ $13.2 \div 12 =$

When dividing by a decimal number, remember:

1. Count the decimal digits in the divisor.
2. Move both decimal points to the right that number of places. This gives you a whole number divisor.

$$\begin{array}{r} 8.2 \\ 2\overline{)16.4} \\ -16 \\ \hline 04 \\ -4 \\ \hline 0 \end{array}$$

check

$$\begin{array}{r} 8.2 \\ \times\ .2 \\ \hline 1.64 \end{array}$$

$.3\overline{)7.2}$ check

$.05\overline{)1.50}$ check

$.02\overline{)6.2}$ check

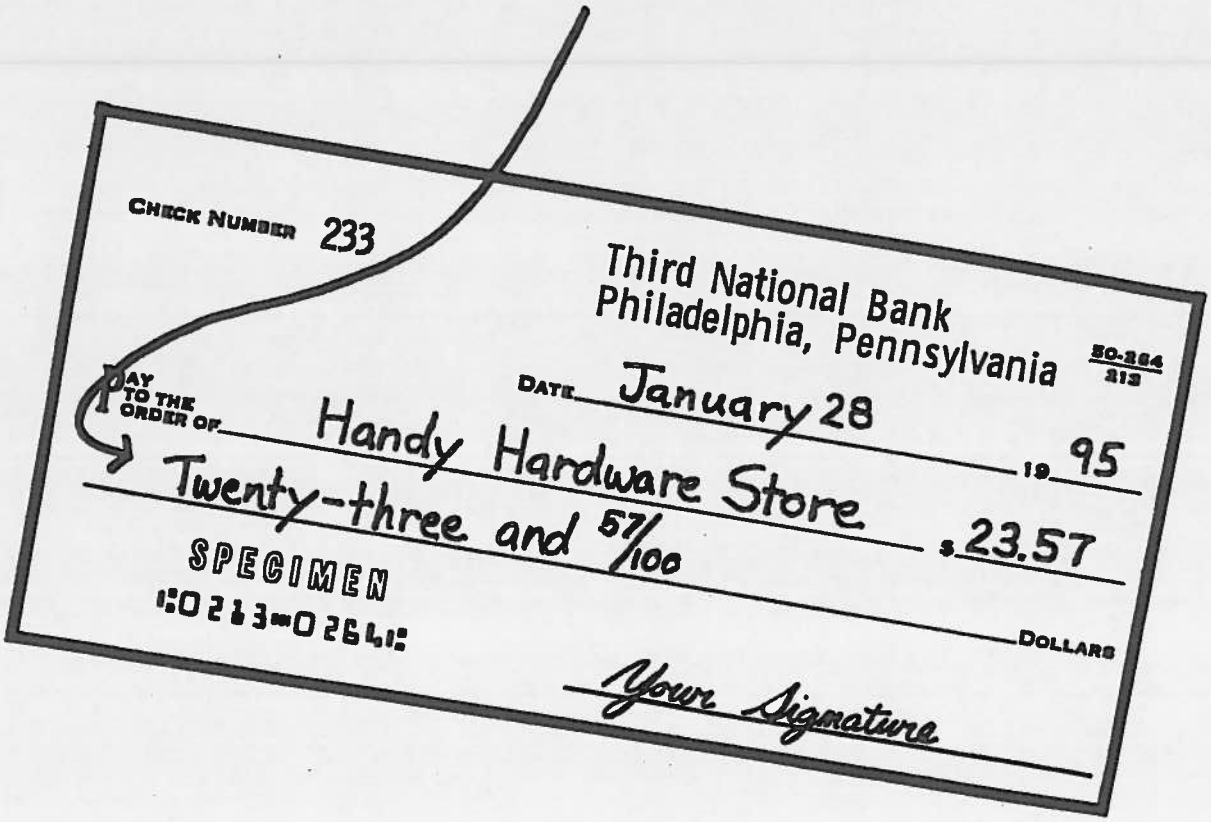
What is the sum of 1.96 and 12.4? 1.96 +12.4	What is 15.08 divided by 2?	What is 2 divided by 5? Be careful!
What is the product of 6 and 4.07?	What number is 7 less than 18.5?	What number is 1 more than 6.25?
What is the product of seventeen hundredths and three tenths? .17 × .3	What number is six and four hundredths larger than two and five tenths?	What is the sum of eight, twelve and one tenth, six and six tenths, and nine tenths?
What number is five less than seven and two tenths?	What is twenty-six and eighty-three hundredths times zero?	What is the difference between one tenth and one hundredth?

Checking Accounts

You probably have or someday will have a checking account in a bank. People write checks to avoid carrying large amounts of cash. You can use checks to pay bills and to pay for purchases at many stores.

Each time you write a check you must fill in five important items. Draw a line to match each item below with its place on the check.

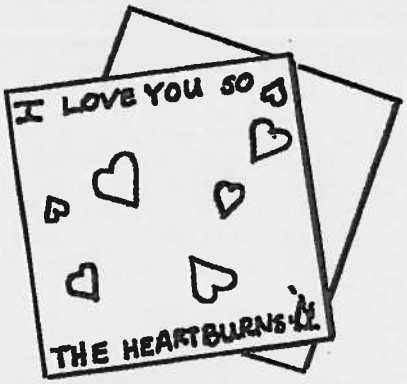
1. The name of the person or business you're paying.
2. The dollar amount of the check written as a decimal.
3. The word name for the dollar amount with the hundredths written as a common fraction.
4. The date.
5. Your signature.



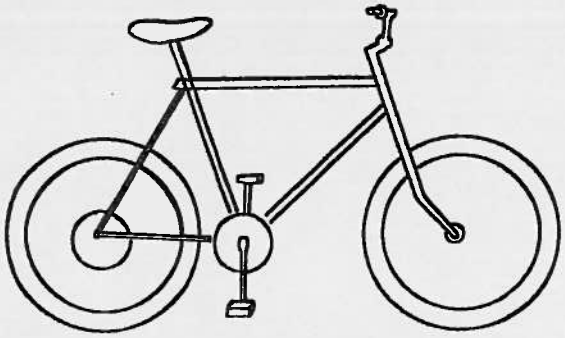
When your check is cashed, your bank pays the person or business named on the check. Then the bank subtracts the amount of the check from your account.

Write checks for the two purchases below. Use today's date and your own signature.

Store: Fantasy Record Store
Amount: $29.95



Store: Broken Bicycle Shop
Amount: $183.42



CHECK NUMBER 234

Third National Bank
Philadelphia, Pennsylvania

50-264
213

DATE _____ 19____

PAY TO THE ORDER OF _____ $_____

_____ DOLLARS

SPECIMEN

⑆0213⑆0264⑆

_____

Be careful filling in this line. Study check number 233.

CHECK NUMBER 235

Third National Bank
Philadelphia, Pennsylvania

50-264
213

DATE _____ 19____

PAY TO THE ORDER OF _____ $_____

_____ DOLLARS

SPECIMEN

⑆0213⑆0264⑆

_____

Each time you write a check, you must compute and record your checking account balance. The balance is the amount of money that you currently have in your account. If you don't keep track of your balance, you may accidentally write a check for more money than you have in your account and your check will bounce!

Some checks have stubs attached to help you keep track of your balance. You tear off the check and keep the stub.

Study the first check and its stub. Then finish filling in the second check and its stub. Subtract to find the new balance.

CHECK NO. 236 $ 18.48
DATE January 30 19 86
TO Spotless Cleaners
FOR Cleaning

	DOLLARS	CENTS
BALANCE	397	84
DEPOSIT	0	00
TOTAL	397	84
AM'T THIS CHECK	18	48
BALANCE	379	36

CHECK NUMBER 236

Third National Bank
Philadelphia, Pennsylvania
30-264
213

DATE January 30 19 95

PAY TO THE ORDER OF Spotless Cleaners $ 18.48

Eighteen and 48/100 DOLLARS

SPECIMEN

⑆0213⑆0264⑆

Your Signature

CHECK NO. _____ $ _____
DATE _____ 19 ____
TO _____
FOR _____

	DOLLARS	CENTS
BALANCE	379	36
DEPOSIT	0	00
TOTAL		
AM'T THIS CHECK		
BALANCE		

CHECK NUMBER 237

Third National Bank
Philadelphia, Pennsylvania
30-264
213

DATE January 31 19 95

PAY TO THE ORDER OF Fillerup's Gas Station $ 32.14

_____ DOLLARS

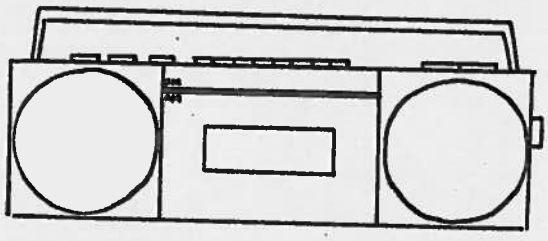
SPECIMEN

⑆0213⑆0264⑆

Continue the series of checks for the purchases and bills shown. Fill out both the check and the check stub. The starting balance on check number 238 is $347.22. The starting balance on each following check is the ending balance from the check before it.

Store: Flash Fashions, Inc.
Amount: $32.15

Store: Shaky Stereo Store
Amount: $107.83



CHECK NO. _____ $ _____
DATE _____ 19___
TO _____
FOR _____

	DOLLARS	CENTS
BALANCE	347	22
DEPOSIT		
TOTAL		
AM'T THIS CHECK		
BALANCE		

CHECK NUMBER 238

Third National Bank
Philadelphia, Pennsylvania
30-264
213

DATE _____ 19___

PAY TO THE ORDER OF _____ $ _____

_____ DOLLARS

SPECIMEN

⑈0213⑆0264⑈

_____

The starting balance on check 239 is the ending balance on check 238.

CHECK NO. _____ $ _____
DATE _____ 19___
TO _____
FOR _____

	DOLLARS	CENTS
BALANCE		
DEPOSIT		
TOTAL		
AM'T THIS CHECK		
BALANCE		

CHECK NUMBER 239

Third National Bank
Philadelphia, Pennsylvania
30-264
213

DATE _____ 19___

PAY TO THE ORDER OF _____ $ _____

_____ DOLLARS

SPECIMEN

⑈0213⑆0264⑈

_____

Use this amount as the starting balance on check number 240.

Won's Restaurant		
Soup	3	50
Fried Rice	4	60
Sweet & Sour Chicken	9	85
Subtotal	17	95
Tax	1	08
Total	19	03

Muddy Water Co.
Phila., PA 19139

METER READINGS

Month Start	73946
Month End	78421
You Used	4475

You pay $12.68

CHECK NO. _____ $_____
DATE _____ 19___
TO _____
FOR _____

	DOLLARS	CENTS
BALANCE		
DEPOSIT		
TOTAL		
AM'T THIS CHECK		
BALANCE		

CHECK NUMBER 240

Third National Bank
Philadelphia, Pennsylvania

50-264
213

DATE _____ 19___

PAY TO THE ORDER OF _____ $_____

_____ DOLLARS

SPECIMEN

⑈0213⑈0264⑈ _____

When you put money into your account you make a deposit. Deposits make your balance go up. Record a deposit of $50 on the stub of check number 241. Then add to find the total.

CHECK NO. _____ $_____
DATE _____ 19___
TO _____
FOR _____

	DOLLARS	CENTS
BALANCE		
DEPOSIT		
TOTAL		
AM'T THIS CHECK		
BALANCE		

CHECK NUMBER 241

Third National Bank
Philadelphia, Pennsylvania

50-264
213

DATE _____ 19___

PAY TO THE ORDER OF _____ $_____

_____ DOLLARS

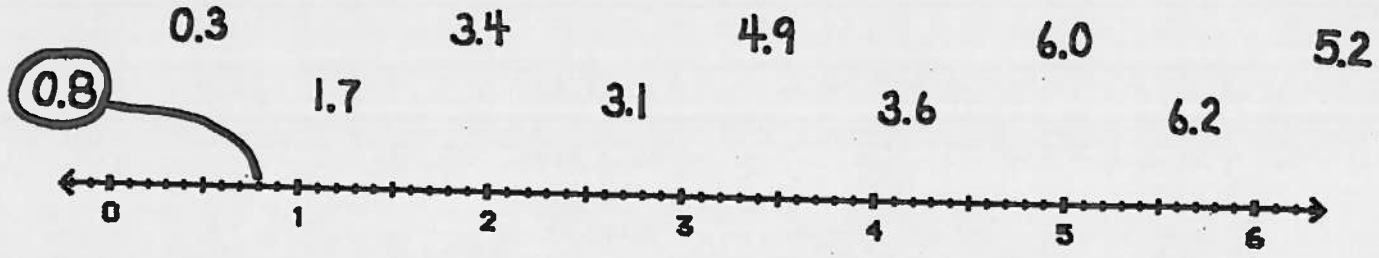
SPECIMEN

⑈0213⑈0264⑈ _____

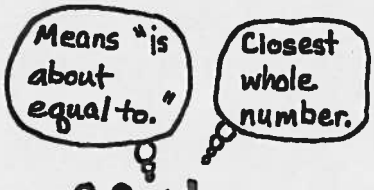
You should finish with a balance of $225.53. If you don't finish with this balance, go back to check number 238 and hunt for your mistake.

Rounding Off

1. Locate each decimal number on the number line.



Write the whole number that is closest to each decimal number.



$0.8 \approx 1$

$1.7 \approx$

$3.6 \approx$

$3.4 \approx$

$6.0 \approx$

$3.1 \approx$

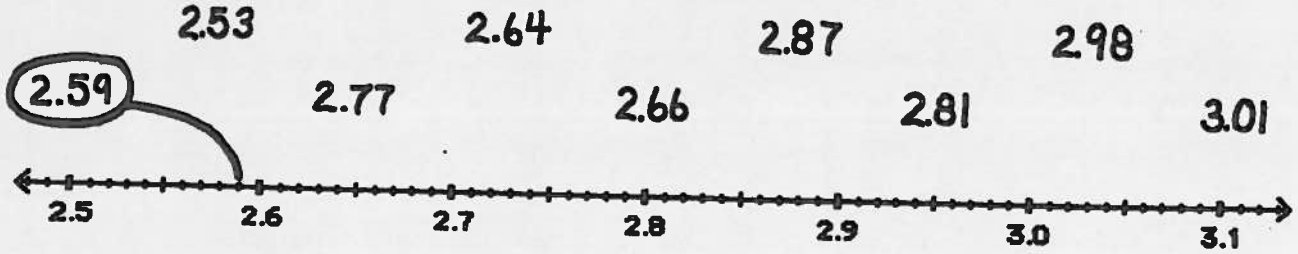
$6.2 \approx$

2. $0.3 \approx$

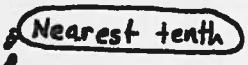
$4.9 \approx$

$5.2 \approx$

Locate each decimal number on the number line.



Round off each number to the nearest tenth.



$2.59 \approx 2.6$

$2.64 \approx$

$2.81 \approx$

$2.53 \approx$

$2.66 \approx$

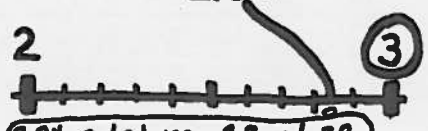
$2.98 \approx$

3. $2.77 \approx$

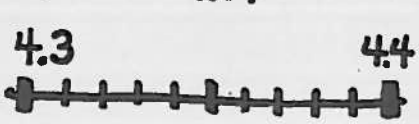
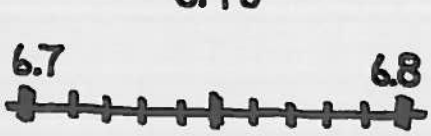
$2.87 \approx$

$3.01 \approx$

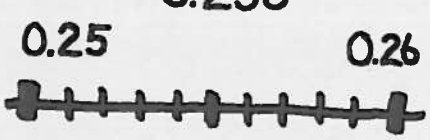
Round off each decimal number to the nearest whole number. Circle the correct answer. Draw a number line if you need help deciding which whole number is closest.

3.7 	1.2 	1.4 
7.1 7 8	7.6 7 8	3.8 3 4
11.8 11 12	8.5 	7.5 
4.2 4 5	9.5 9 10	19.9 19 20
13.8 13 14	13.1 13 14	13.5 13 14
2.84 	1.27 	3.71 
6.54 6 7	38.46 38 39	102.352 102 103

Round to the nearest tenth. Circle the correct answer.

1.27  	4.31  	6.76 
2.15  	7.75 7.7 7.8	3.43 3.4 3.5
3.99 3.9 4.0	1.18 1.1 1.2	22.66 22.6 22.7
5.806 5.8 5.9	39.989 39.9 40.0	1082.345 1082.3 1082.4

Round to the nearest hundredth. Circle the correct answer.

2.113  	0.258  	0.642 0.64 0.65
1.125 1.12 1.13	0.025 0.02 0.03	7.783 7.78 7.79
83.002 83.00 83.01	2.541 2.54 2.55	16.995 16.99 17.00

A Method for Rounding Off Decimal Numbers

Here is a simple method you can use to round off decimal numbers:

Round to the nearest tenth.

Step 1 Find the place you are rounding off to and underline the digit in that place.

7.32 ≈ 5.264 ≈

Step 2 Circle the next decimal digit.

7.3(2) ≈ 5.2(6)4 ≈

Step 3 If the circled digit is 0, 1, 2, 3, or 4, then the underlined digit stays the same.

If the circled digit is 5, 6, 7, 8, or 9, then add one to the underlined digit.

7.3(2) ≈ (The 3 stays the same.)

5.2(6)4 ≈ (Add 1 to the 2.)

Step 4 Drop all the digits that follow the underlined digit.

7.3(2) ≈ 7.3 5.2(6)4 ≈ 5.3

Round to the nearest tenth. All your answers should have one decimal digit.

3.8(2) ≈ 3.8 (The 8 stays the same.)	8.4(7) ≈ 8.5 (Add 1 to the 4.)	2.13 ≈
7.96 ≈	5.23 ≈	6.35 ≈
4.30 ≈	9.89 ≈	0.417 ≈
13.684 ≈	0.5678 ≈	.5678 ≈
8.9(5)3 ≈ 9.0	4.976 ≈	2.911 ≈
13.92 ≈	13.98 ≈	13.95 ≈
2.084 ≈	2.034 ≈	0.012 ≈
36.753 ≈	80.333 ≈	0.66666 ≈
.111111 ≈	.15 ≈	0.55555 ≈
9.9(9) ≈ 10.0	99.99 ≈	999.99 ≈

Round off to the nearest whole number. Underline the digit in the ones place and circle the digit in the tenths place. Then round off. All answers should be whole numbers.

6.⑤4 ≈ 7.	3.72 ≈	8.3 ≈
2.6 ≈	2.1 ≈	2.5 ≈
13.5 ≈	25.2 ≈	14.73 ≈
10.75 ≈	53.25 ≈	321.764 ≈
9.9 ≈	0.9 ≈	.9 ≈

Round off to the nearest hundredth. All answers should have two decimal digits.

1.12⑤ ≈ 1.13	1.394 ≈	6.257 ≈
6.891 ≈	5.125 ≈	17.49712 ≈
0.6666 ≈	22.145 ≈	5.99999 ≈

Round off to the nearest thousandth. All answers should have ___ decimal digits.

1.615④ ≈ 1.615	2.2645 ≈	8.33333 ≈
20.6897 ≈	5.0003 ≈	.012843 ≈

Round off to the nearest:

whole number	12.375 ≈	0.714285 ≈
tenth	12.375 ≈	0.714285 ≈
hundredth	12.375 ≈	0.714285 ≈

whole number	3.14159 ≈	2.7182818 ≈
tenth	3.14159 ≈	2.7182818 ≈
hundredth	3.14159 ≈	2.7182818 ≈
thousandth	3.14159 ≈	2.7182818 ≈
ten thousandth	3.14159 ≈	2.7182818 ≈

Rounding Off with Division

Sometimes, when you divide, you do not need an exact answer. An answer close to the exact answer is good enough. You can divide and round off to find a close answer.

Find each answer below to the nearest whole number. To find an answer to the nearest whole number, you must divide until you find the tenths digit. Then use the tenths digit to round off to the nearest whole number.

$17 \div 3 \approx 6$

Divide

$$\begin{array}{r} 5.6 \\ 3\overline{)17.0} \\ -15 \\ \hline 20 \\ -18 \\ \hline 2 \end{array}$$

Stop dividing once you've found the tenths digit.

You don't need to continue.

Round Off

$5.6 \approx 6$

This is the answer rounded off to the nearest whole number.

$27 \div 4 \approx$

Divide

Round Off

$22 \div 5 \approx$

Divide

Round Off

$21 \div 6 \approx$

Divide

Round Off

$75 \div 4 \approx$

Divide

Round Off

$50 \div 3 \approx$

Divide

Round Off

Find each answer to the nearest tenth. Divide until you find the hundredths digit, and then round off to the nearest tenth.

$2 \div 3 \approx$

Divide

$3\overline{)2.00}$

Round Off

$3 \div 7 \approx$

Divide

Round Off

$8 \div 3 \approx$

Divide

Round Off

$7.5 \div 2 \approx$

Divide

Round Off

Find each answer to the nearest hundredth.

$3 \div 7 \approx .43$

Divide

$.428$

$7\overline{)3.000}$

-28

20

-14

60

-56

4

Round Off

$.428 \approx .43$

$5 \div 6 \approx$

Divide

$\overline{)5}$

Round Off

Make sure you make 1 the dividend.

$1 \div 8 \approx$

Divide

Round Off

$1 \div 7 \approx$

Divide

Round Off

Unit Pricing

Find each answer below to the nearest cent. Since cents are hundredths of a dollar, you must divide until you find the thousandths digit. Then round off.

Betsy bought four donuts for $.75. Each donut cost about how much?

$.187
4)$.750
-4
35
-32
30
-28
2

$.187 ≈ $.19

Each donut cost about $.19.

Lee bought a box of 8 pens for $3.49. Each pen cost about how much?

Each pen cost about $____.

Nathaniel bought a six-pack of root beer for $2.98. Each can cost about how much?

Each root beer cost about $____.

Susan bought a package of gum with 5 sticks for $.29. Each stick cost about how much?

Each stick cost about $____.

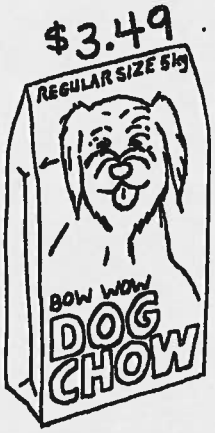
Undershirts are sold in packages with three shirts to a package. Terry bought a package for $17.99. Each undershirt cost about how much?

Each undershirt cost about $____.

Dana needs to buy some dog food for her dog Spot. She needs to decide which bag to buy.

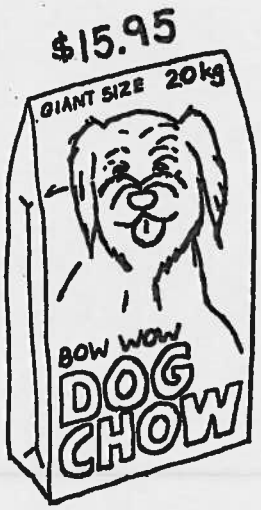
Find each answer below to the nearest cent.

How much does each kilogram cost in the regular size bag?



$\_\_\_\_$ per kg

How much does each kilogram cost in the giant size bag?

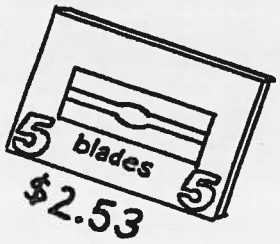


$\_\_\_\_$ per kg

Which bag should Dana buy? _____ (regular / giant)

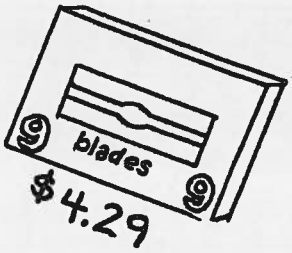
Willie needs to buy razor blades so he can shave. Help him decide which pack is a better deal.

How much for each blade in the small package?



$\_\_\_\_$ per blade

How much for each blade in the large package?



$\_\_\_\_$ per blade

Which pack should Willie buy? _____ (5 blades / 9 blades)

Estimating

Rounding off can help you make a guess close to the answer to a problem. Making a close guess is called estimating.

Round off each decimal to the nearest whole number. Then add or subtract the whole numbers to estimate the answer.

$6.\underline{4}8 \approx 6$ $+3.\underline{7} \approx +4$ 10	17.32 $+\ 1.84 \approx +\ \_\_$	15.39 $+22.58 \approx +\ \_\_$	1.342 $+1.6$
6.39 -3.84	8.75 -5.6	15.2 $-\ 7.4$	3.52 4.6 7.1 0.89 1.28 $+5.09$
4 $+9.198$	2.05 $.01$ $+9.86$	15.09 2.64 $+\ 5.3$	

Estimate each answer below to the nearest whole number.

$1.\underline{4} + 3.\underline{8} \approx 5$ $1 + 4$	$7.2 + 1.9 \approx$	$3.2 + 4.3 \approx$
$7.2 - 3.4 \approx$	$8.0 - 3.1 \approx$	$8.0 - 3.8 \approx$
$17.437 + 2.8 \approx$	$32 + 4.032 \approx$	$16 - 7.2 \approx$
$20.1 + 20.2 \approx$	$90.1 + 10.9 + 7.2 \approx$	$36 + 36.2 \approx$
$2.46 + 7 \approx$	$3.6 + 4.492 + 1.8 \approx$	$92.1 - 92 \approx$

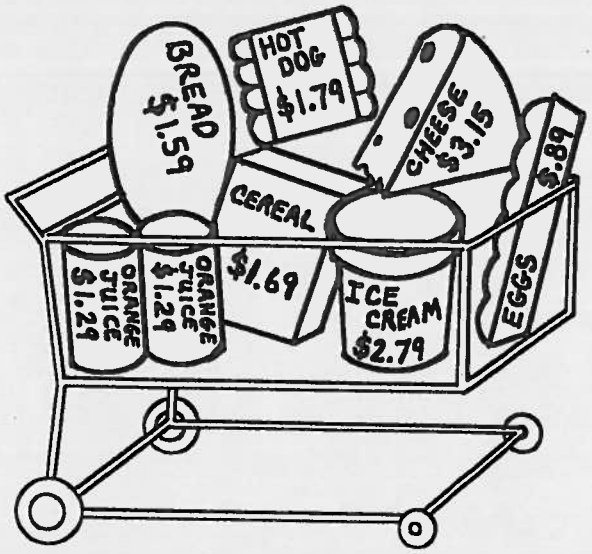
Round off each price to the nearest dollar. Then add to estimate the total cost of the items.

Gretchen went to the grocery store. Estimate the cost of the items in her cart.

$$\begin{array}{r} \$1.59 \\ 1.79 \\ 3.15 \\ 1.29 \\ 1.29 \\ 1.69 \\ 2.79 \\ +\ .89 \\ \hline \end{array}$$

$\$2$

$+$ _____



Estimate the amount Gretchen spent. $_____

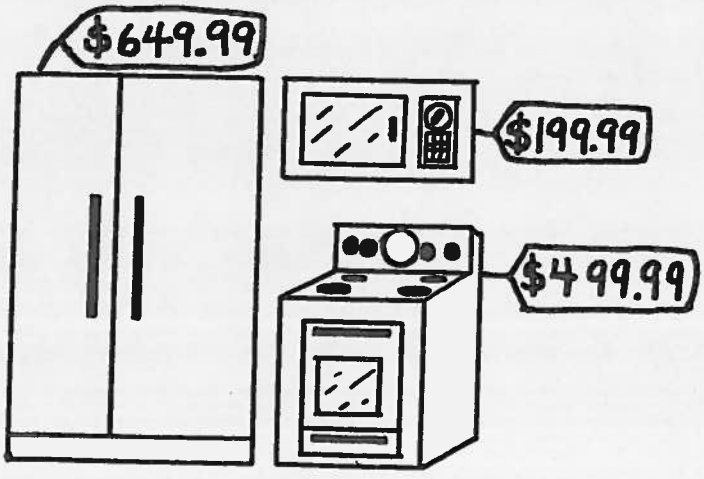
Next time you go to the supermarket, estimate the cost of the items in your cart before the clerk adds them up. See how close your estimate came to the actual total.

Julio drove from San Francisco, CA to Boise, ID. He bought gas three times spending $9.12, $18.42, and $12.79. Estimate Julio's gas expense.

Julio spent about $_____ on gas.

Frankie and Annette went to the drive-in. Frankie had a burger ($1.89), onion rings ($.89) and a cola ($.49). Annette had a hot dog ($1.29) and a shake ($1.09). Estimate how much they spent.

They spent about $_____.



The Gomez family bought new kitchen appliances. Estimate the total cost.

The appliances cost about $_____.

Averages

To find the average of a group of numbers:

1. Add to find the sum of the numbers in the group.
2. Divide the sum by how many numbers are in the group.

Find each average below.

Average: .6 and 1.0

$$\begin{array}{r} .6 \\ +1.0 \\ \hline 1.6 \end{array}$$

There are 2 numbers in the group.

$$2\overline{)1.6} \quad .8$$
$$-16$$
$$0$$

The average is .8 .

Average: .9, .5 and 1.0

$$\begin{array}{r} .9 \\ .5 \\ +1.0 \\ \hline \end{array}$$

There are 3 numbers in the group.

$3\overline{)}$

The average is _____ .

Average: 0.4, 0.3, 0.7, and 0.2

The average is _____ .

Average: 1.9 and 2.7

The average is _____ .

Average: 1.4, 2.2 and 3.

The average is _____ .

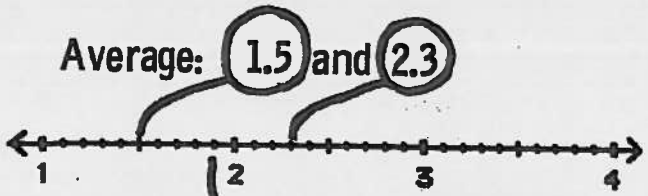
Average: 2.1, 1.3 and 2.3

The average is _____ .

Number Line Averaging

Locate each number on the number line. Add and divide to find the average. Then locate the average on the number line.

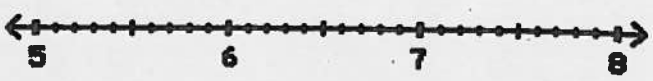
Average: 1.5 and 2.3



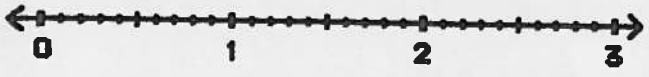
$$\begin{array}{r} 1.5 \\ +\ 2.3 \\ \hline 3.8 \end{array}$$

$$2\overline{)3.8} \quad 1.9$$
$$-2$$
$$18$$
$$-18$$
$$0$$

Average: 5.2 and 6.4

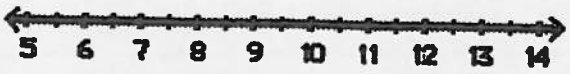


Average: 1.4 and 3

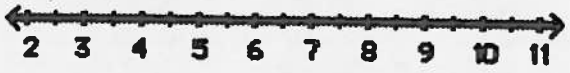


Average: 2.4, 3.5, 4.1, and 4.4

Average: 5, 8.1 and 13.6



Average: 3, 4, 5, and 10

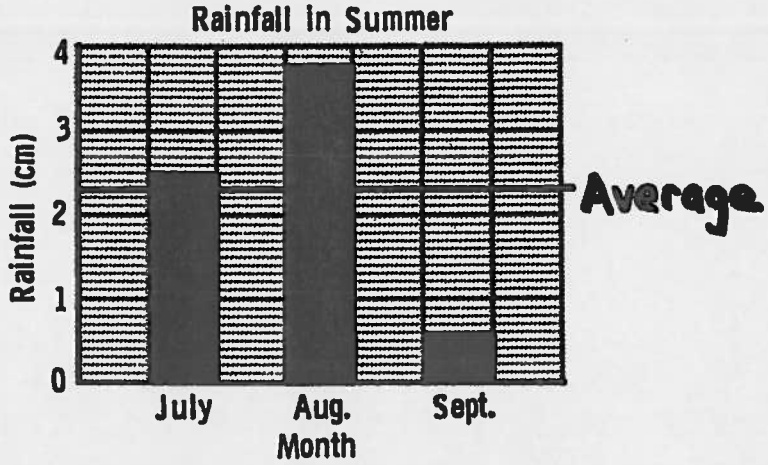


Bar Graph Averaging

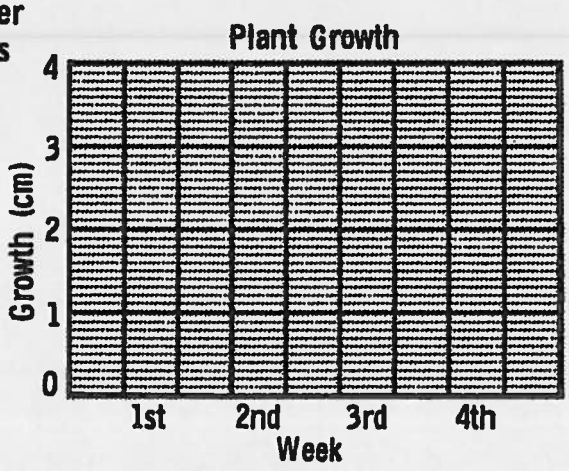
Graph the information in each problem. Add and divide to find the average. Then draw a line to show the average.

The rainfall for July, August and September was 2.5, 3.8 and 0.6 centimeters. What was the average rainfall?

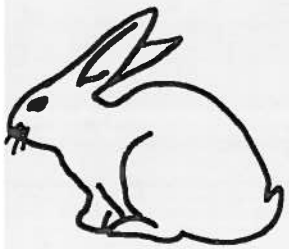
$$\begin{array}{r} 2.5 \\ 3.8 \\ +0.6 \\ \hline 6.9 \end{array} \qquad \begin{array}{r} 2.3 \\ 3\overline{)6.9} \\ -6 \\ \hline 09 \\ -9 \\ \hline 0 \end{array}$$

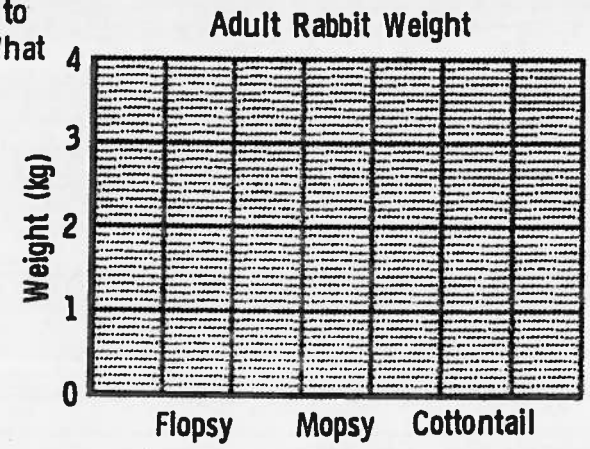


Isabella is growing a bean plant for her science class. In the first four weeks it grew 0.9, 1.2, 1.9 and 1.6 cm. What was the average growth?



Flopsy, Mopsy and Cottontail grew up to weight 2.4, 3.7 and 2.3 kilograms. What is their average weight?





Averages in Sports

Linda is a basketball coach. Help her figure out the scoring averages for some of the players on her team.

Annabel played in 8 games. She scored 6, 11, 3, 1, 7, 13, 5, and 6 points. What was her average?

$$\begin{array}{r} 6 \\ 11 \\ 3 \\ 1 \\ 7 \\ 13 \\ 5 \\ +\ 6 \\ \hline 52 \end{array}$$

$$\begin{array}{r} 6.5 \\ 8\overline{)52.0} \\ -\ 48 \\ \hline 40 \\ -\ 40 \\ \hline 0 \end{array}$$

Annabel averaged 6.5 points.

Liz played in only 4 games. She scored 14, 15, 9, and 16 points. What was her average?

Liz averaged _____ points.

Monica played in eight games. She scored 8, 7, 21, 12, 10, 13, 15, and 8 points. What was her average?

Monica averaged _____ points.

Betsy is very good at defense. She played in five games. She scored 2, 5, 4, 1, and 4 points. What was her average?

Betsy averaged _____ points.

Which player had the highest average? _____

Which player scored the most total points? _____

Which player scored the most points in one game? _____

To find a baseball player's batting average, you divide the number of "hits" by the number of "at bats." Then you round off to the nearest thousandth.

Divide until you find the ten thousandth digit. That's the fourth decimal digit.

Player	At Bats	Hits	Average
Sam	14	5	.357
Roberto	30	10	
Rocky	25	6	
Willie	22	7	
Fred	21	6	

Sam

.3570 ≈ .357

```
   .3571
14|5.000
 -42
  80
 -70
  100
  -98
   20
  -14
    6
```

Sam's average is .357 .

Roberto

Roberto's average is _____ .

Rocky

Rocky's average is _____ .

Willie

Willie's average is _____ .

Fred

Fred's average is _____ .

Which player had the most hits?

_____

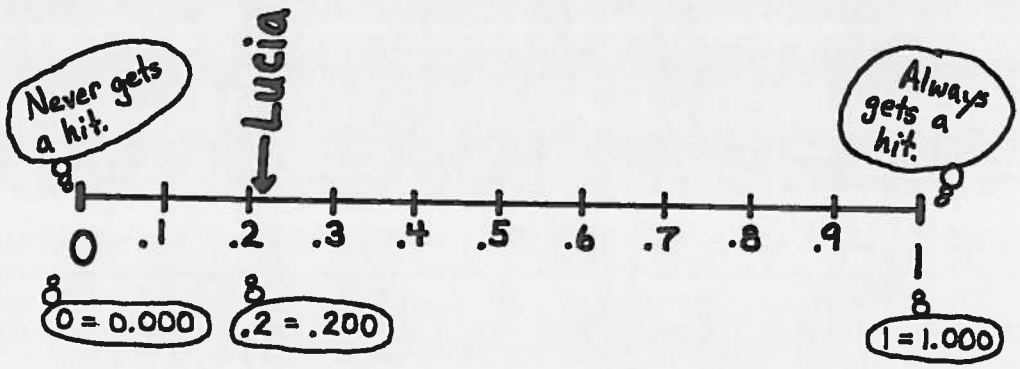
Which player had the highest average?

_____

Rogers Hornsby, who played for the St. Louis Cardinals in 1924, had the best seasonal average in the modern history of major league baseball. Hornsby had 227 hits in 536 times at bat. What was his average?	Suppose you were a perfect baseball hitter. You got a hit every time you came to bat. If you had 536 at bats and got 536 hits, what would your average be?	Suppose you never got a hit. You came to bat 536 times but got 0 hits. What would your average be?
Rogers Hornsby's average was _____ in 1924.	If you were perfect your average would be _____	If you never got a hit your average would be _____.

The Great Hope High School girls' softball team is playing in the league championship game. Five girls have not yet played in the game and are waiting for their chance to play. Below is a table with their names and batting averages. Estimate the location of each average on the number line.

	Average
Lucia	.203
Monica	.368
Viki	.401
Toby	.278
Ada	.310



Suppose it was the last inning of the game, the score was tied, the bases were loaded, and there were two outs. Tonia, who was supposed to bat, hurt her hand. Among the five girls waiting to play, who has the best chance of getting a hit to win the game? _____

Decimal numbers are used to score gymnastic events. Each judge gives a score from zero to ten. (Ten is perfect.) Then the scores are averaged to determine the final score. Find the average then round to the nearest hundredth to determine each final score in the balance beam competition.

Cathy | 7.3 | 6.8 | 7.2 | 7.4 |

$$\begin{array}{r} 7.3 \\ 6.8 \\ 7.2 \\ +\ 7.4 \\ \hline 28.7 \end{array}$$

$$\begin{array}{r} 7.175 \\ 4\overline{)28.700} \\ -28 \\ \hline 07 \\ -4 \\ \hline 30 \\ -28 \\ \hline 20 \\ -20 \\ \hline 0 \end{array}$$

7.175 ≈ 7.18

Final Score 7.18

Nadia | 8.1 | 7.9 | 7.5 | 7.6 |

Final Score _____

Anna | 8.5 | 8.8 | 9.1 | 8.9 |

Final Score _____

Nellie | 9.5 | 9.1 | 9.7 | 9.5 |

Final Score _____

Olga | 7.9 | 7.2 | 7.7 | 7.6 |

Final Score _____

Balance Beam Ranking

Place	Name	Final Score
1		
2		
3		
4		
5	Cathy	7.18

Test Averages

Ms. Rodriguez gave her math class 5 tests. Find each student's average rounded to the nearest whole number. Then fill in the "Average" column in Ms. Rodriguez's gradebook.

Student	1st Test	2nd Test	3rd Test	4th Test	5th Test	Average
Jeff	81	79	86	91	91	86
Rose	71	77	85	81	96	
Terry	85	72	73	70	75	
Maria	84	88	92	91	89	
Ivan	61	68	73	80	82	

Jeff

$$\begin{array}{r} 81 \\ 79 \\ 86 \\ 91 \\ +\,91 \\ \hline 428 \end{array}$$

$$5\overline{)428.0} \quad 85.6 \approx 86$$

$$\begin{array}{r} -40 \\ \hline 28 \\ -25 \\ \hline 30 \\ -30 \\ \hline 0 \end{array}$$

Jeff's average is 86.

Rose

Rose's average is _____.

Terry

Terry's average is _____.

Maria

Maria's average is _____.

Ivan

Ivan's average is _____.

Which student had the highest average?

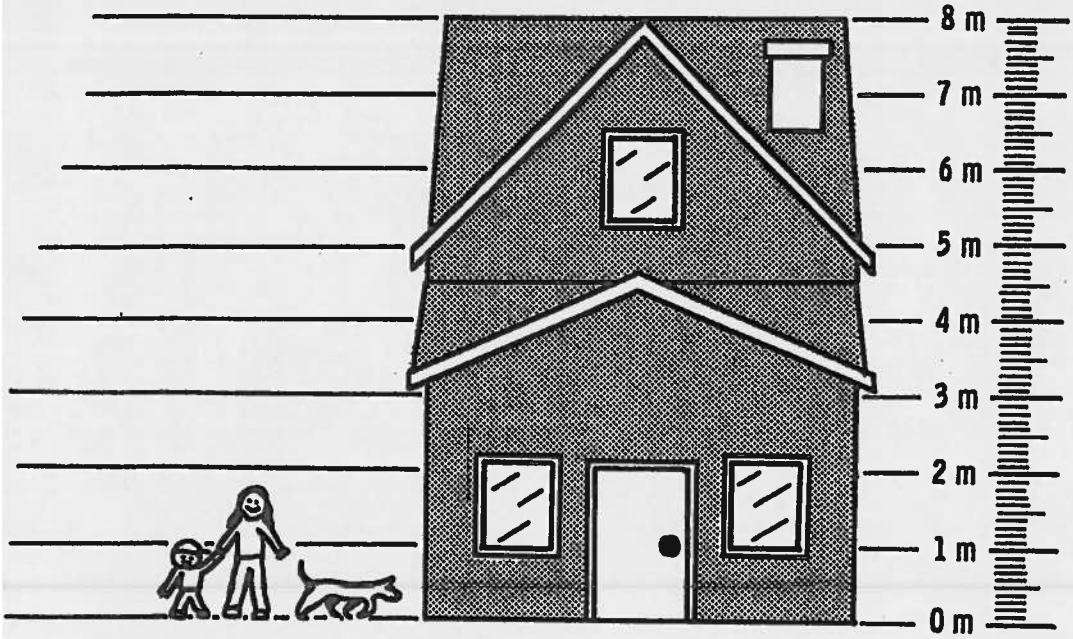
_____

Which student had the best single test?

_____

Length in the Metric System

The meter is the standard unit for measuring lengths in the metric system.

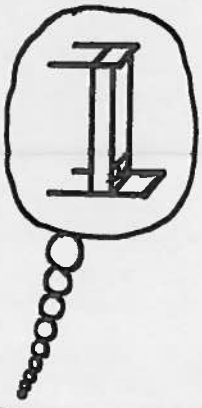


The child is about one meter (1 m) tall.

The door is about 2 m high.

The house is about 8 m tall.

The dog is about .5 m tall.



Circle the most reasonable answer.

Use the scale on the drawing to help you picture each length.	Length of a bed: .2 m (Much too short.) 2 m 20 m (Way too long.)
Length of a dog's tail: .3 m 3 m 30 m	Height of a chair .9 m 9 m 90 m
Length of a city block: .8 m 8 m 80 m	Height of a window: 1.3 m 13 m 130 m
Height of a desk lamp: .5 m 5 m 50 m	Distance from the floor to the ceiling: .25 m 2.5 m 25 m
Distance across a street: .12 m 1.2 m 12 m	Height of a skyscraper: .75 m 7.5 m 75 m
Height of an adult: .17 m 1.7 m 17 m	Height of a toaster: .17 m 1.7 m 17 m

Small lengths are measured in centimeters or millimeters.

A meter is divided into 100 equal parts to make centimeters (cm).

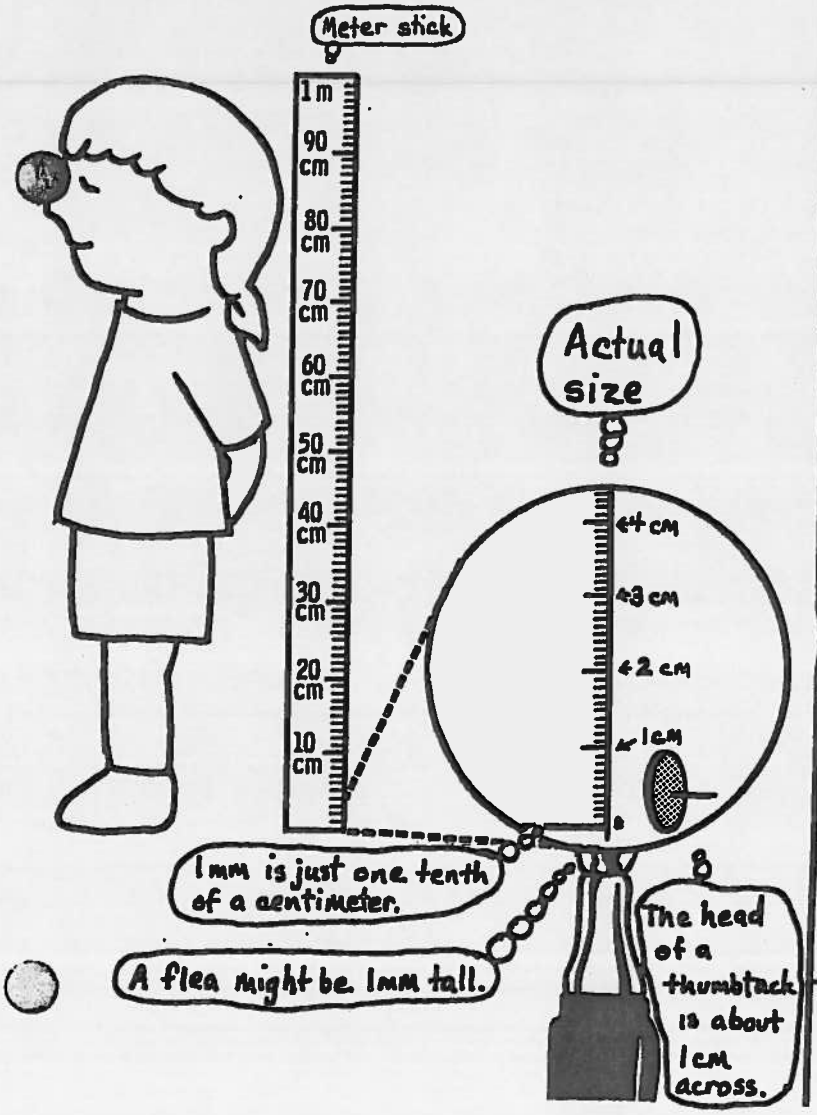
100 cm = 1 m or 1 cm = .01 m

The head of a thumbtack is about one one centimeter across.

A centimeter is divided into 10 equal parts to make millimeters (mm).

A flea might be one millimeter tall.

10 mm = 1 cm or 1 mm = .1 cm



Circle the reasonable answer. Use the scale on the drawing to help you picture each length.

Height of a child:
1mm 1cm 1m

Width of a fingernail:
1mm 1cm 1m

Height of a flea:
1mm 1cm 1m

Length of a paper clip:
3mm 3cm 3m

Length of an ant:
4mm 4cm 4m

Height of a telephone pole:
15mm 15cm 15m

Length of a big snake:
1.9mm 1.9cm 1.9m

Length of a candy cane:
9.1mm 9.1cm 9.1m

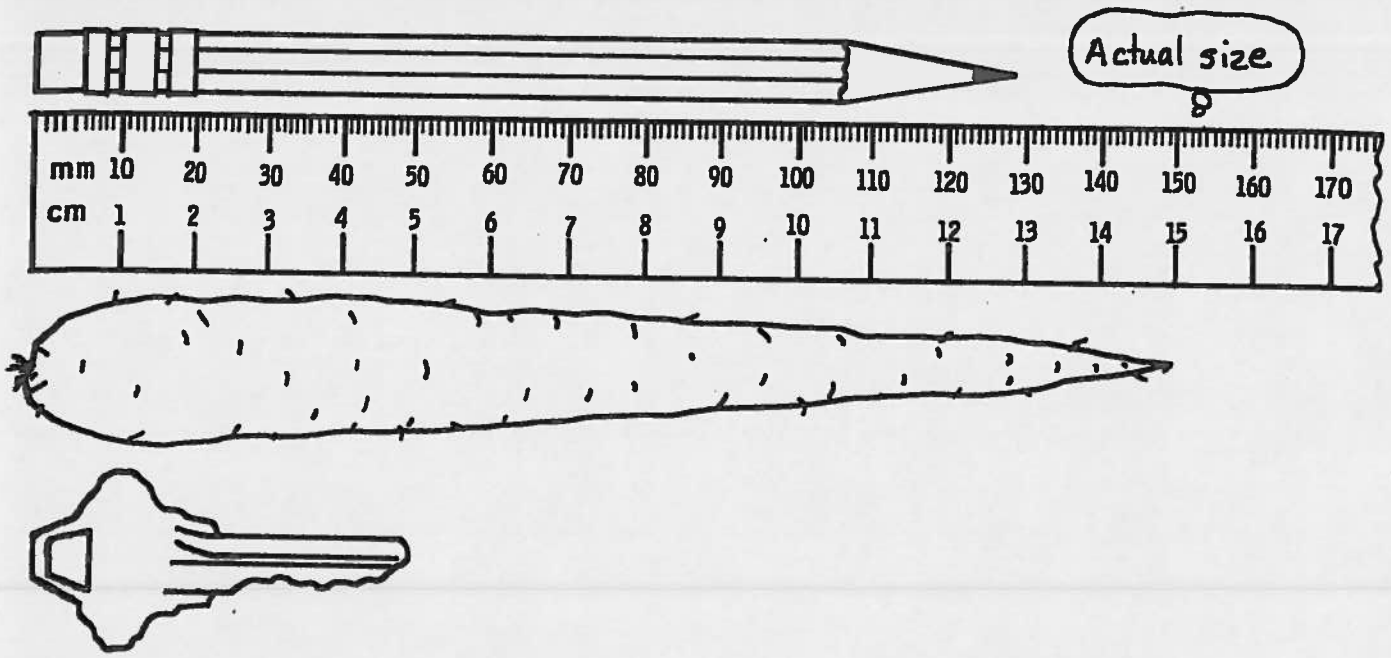
Height of a tricycle:
.5mm .5cm .5m

Height of a giraffe:
6.2mm 6.2cm 6.2m

Height of a milk carton:
29.2mm 29.2cm 29.2m

Length of a shoebox:
.25mm .25cm .25m

As you can see on the ruler below, ten millimeters make one centimeter (10 mm = 1 cm). You can measure any length in meters, centimeters, or millimeters. The pencil below is about 130 mm or 13 cm long. Measured with a meter stick, this pencil is about .13 m long.

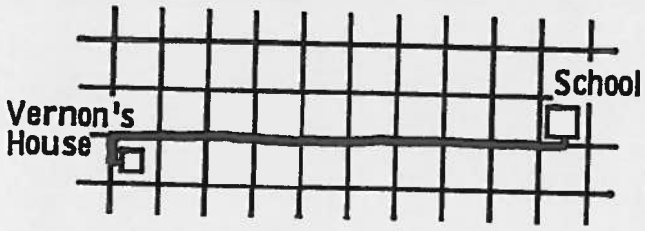


Circle each reasonable answer in millimeters, centimeters and meters.

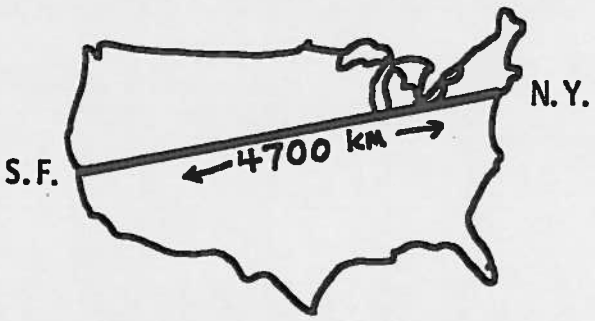
Length of a pencil:	millimeters	.013	.13	1.3	13	(130)	1300
	centimeters	.013	.13	1.3	(13)	130	1300
	meters	.013	(.13)	1.3	13	130	1300
Length of a carrot:	millimeters	.015	.15	1.5	15	150	1500
	centimeters	.015	.15	1.5	15	150	1500
	meters	.015	.15	1.5	15	150	1500
Length of a key:	millimeters	.05	.5	5	50	500	5000
	centimeters	.05	.5	5	50	500	5000
	meters	.05	.5	5	50	500	5000
Length of a paper clip:	millimeters	.033	.33	3.3	33	330	3300
	centimeters	.033	.33	3.3	33	330	3300
	meters	.033	.33	3.3	33	330	3300
Length of a softball bat:	millimeters	.008	.08	.8	8	80	800
	centimeters	.008	.08	.8	8	80	800
	meters	.008	.08	.8	8	80	800

Large distances are measured in kilometers (km). There are 1000 meters in one kilometer.

It takes Vernon about 15 minutes to walk one kilometer to school.



San Francisco is about 4700 km from New York.



1000 m = 1 km or 1 m = .001 km

Circle the reasonable answer.

Height of a tall person: 1.9 m 1.9 km	Length of a soccer field: 100 m 100 km
Distance around the earth: 38,600 m 38,600 km	Length of a large ocean freighter: 35 m .35 km
Length of a school bus: 12.7 m 12.7 km	Length of a short footrace: 75 m 75 km
Height of world's tallest mountain: 8900 m 8900 km	Height of world's tallest mountain: 8.9 m 8.9 km
Height of a tall tree: 87.2 m 87.2 km	Height of a tall tree: .0872 m .0872 km
Length of a marathon footrace: 41,600 m 41,600 km	Length of a marathon footrace: 41.6 m 41.6 km
Height of world's tallest building: 450 m 450 km	Height of world's tallest building: .45 m .45 km

Changing Units of Length

Changing units of length in the metric system is easy. To change to smaller units you multiply by 10, 100 or 1000. To change to larger units you multiply by .1, .01 or .001.

Find an equal length.

1 m = 100 cm

6 m = 600 cm

6 × 100 = 600

2.68 m = _____ cm

A door is 2.1 meters tall. How many centimeters is this?

It is _____ cm.

1 cm = .01 m

76 cm = .76 m

76
×.01
.76

142 cm = _____ m

1 km = 1000 m

3 km = _____ m

8.5 km = _____ m

It is .25 km from Steve's house to Spreck's apartment. How many meters is this?

It is _____ meters.

1 m = .001 km

231 m = _____ km

1500 m = _____ km

Word Problems with Metric Lengths

Jim was 1.66 m tall last year. In one year he has grown .14 m. How tall is he now?

Jim is _____ m tall now.

Belinda is 1.84 m tall. Her sister Keola is 1.42 m tall. How many meters taller is Belinda?

Belinda is _____ m taller.

How many centimeters taller is Belinda?

Belinda is _____ cm taller.

Nancy has a piece of licorice 2 m long. She wants to divide it into eight equal pieces. How many meters long will each piece be?

Each piece will be _____ m long.

How many centimeters is that?

It is _____ cm.

Susan was driving from Portland to Los Angeles, a distance of 1726 km. After driving 1061 km to San Francisco, she stopped for the night. How much farther is it to Los Angeles?

It is _____ km farther.

Dad drove 470 km from St. Louis to Chicago. Then mom drove 670 km from Chicago to Toronto. How far did they drive together?

They drove _____ km.

A relay race has teams of four people. Each person runs 400 m. How many kilometers does each person run?

Each person runs _____ km.

How many meters does each team run?

Each team runs _____ m.

How many kilometers does each team run?

Each team runs _____ km.

Powers of Ten

Our number system is based on powers of ten. The numbers 10, 100, 1000, ... are all powers of ten.

Complete the table.

Standard Form	Factored Form	Power Form	Words
10	10	10^1	ten to the first power
100	10×10		ten to the second power
1000			
	$10 \times 10 \times 10 \times 10$		
		10^5	
1,000,000			
10,000,000			

Multiplying decimal numbers by a power of ten is easy. You simply move the decimal point. The power of ten tells you how far. You may need to use zeros as placeholders.

6x20.

$6.2 \times 10^2 = 620.$

Move decimal point 2 places right.

3x6.2

$3.62 \times 10^1 = 36.2$

Move decimal point 1 place right.

1x43000.

$1.43 \times 10^5 = 143000.$

Move decimal point 5 places right.

$7.13 \times 10^2 =$

$1.4 \times 10^5 =$

$7.32 \times 10^6 =$

$2.45 \times 10^8 =$

$3.1415 \times 10^1 =$

$1.4 \times 10^3 =$

$9.7 \times 10^4 =$

$6.02 \times 10^{23} =$

$6.4 \times 10^3 =$

$7.8 \times 10^2 =$

$6.24 \times 10^5 =$

Scientific Notation

The earth is about 150,000,000 km from the sun and about 384,000 km from the moon. The closest star (other than the sun) is Proxima Centauri. It is about 41,000,000,000,000 km from earth. Scientists often write large numbers like these in scientific notation.

Number between 1 and 10 | Power of 10

$150{,}000{,}000 = 1.5 \times 10^{8}$

$384{,}000 = 3.84 \times 10^{5}$

$41{,}000{,}000{,}000{,}000 = 4.1 \times 10^{13}$

A number in scientific notation is written as the product of a number between one and ten and a power of ten.

Scientific notation is useful because large numbers don't take up as much space when written in scientific notation.

Here is a simple way to write large numbers in scientific notation:

Step 1 $237{,}000{,}000 = 2.37$

Use the digits at the left end of the number to write a decimal number between 1 and 10. You don't need to include the string of zeros.

Step 2 $237{,}000{,}000 = 2.37 \times 10^{8}$

2.37000000 The decimal point would move eight places.

Count how many places you would need to move the decimal point to make the large number. That gives you the power of ten to multiply by.

Write each number below in scientific notation.

$67{,}200 = 6.72 \times 10^{4}$

$14{,}300 =$

$37{,}400{,}000 =$

$8{,}600{,}000 =$

$521{,}000 =$

$47{,}000 =$

$12{,}000{,}000{,}000 =$

$1{,}400{,}000{,}000{,}000 =$

$2{,}000{,}000{,}000{,}000{,}000{,}000 =$

$29{,}000{,}000 =$

$2{,}900{,}000 =$

$290{,}000 =$

$70{,}000 =$

$1642 =$

$16.42 =$

Extending Scientific Notation

Scientific notation can be used to express very small decimal numbers also. See if you can find the pattern and complete the problems below.

$3.47 \times 10^{6} = 3,470,000.$

$3.47 \times 10^{5} =$

$3.47 \times 10^{4} =$

$3.47 \times 10^{3} =$

$3.47 \times 10^{2} =$

$3.47 \times 10^{1} = 34.7$

$3.47 \times 10^{0} = 3.47$

$3.47 \times 10^{-1} = .347$

$3.47 \times 10^{-2} = .0347$

$3.47 \times 10^{-3} =$

$3.47 \times 10^{-4} =$

$3.47 \times 10^{-5} =$

$3.47 \times 10^{-6} =$

$8.2314 \times 10^{6} =$

$8.2314 \times 10^{5} =$

$8.2314 \times 10^{4} =$

$8.2314 \times 10^{3} =$

$8.2314 \times 10^{2} =$

$8.2314 \times 10^{1} =$

$8.2314 \times 10^{0} =$

$8.2314 \times 10^{-1} =$

$8.2314 \times 10^{-2} =$

$8.2314 \times 10^{-3} =$

$8.2314 \times 10^{-4} =$

$8.2314 \times 10^{-5} =$

$8.2314 \times 10^{-6} =$

Multiply. Look at the problems above if you get stuck.

$2.89 \times 10^{-3} =$

$4.3 \times 10^{-8} =$

$7.7 \times 10^{-10} =$

$1.43 \times 10^{-1} =$

$6.4 \times 10^{-2} =$

$4.32 \times 10^{-5} =$

$2.72 \times 10^{-6} =$

$3.6 \times 10^{0} =$

Multiply to rewrite each number in standard form.

Large Numbers	Small Numbers
$7.4 \times 10^3 =$	$7.4 \times 10^{-3} =$
$8.1 \times 10^2 =$	$8.1 \times 10^{-2} =$
$3.16 \times 10^4 =$	$3.16 \times 10^{-4} =$
$1.6 \times 10^5 =$	$1.6 \times 10^{-5} =$
$4.253 \times 10^9 =$	$4.253 \times 10^{-9} =$
$5 \times 10^7 =$	$5 \times 10^{-7} =$
$2 \times 10^6 =$	$2 \times 10^{-6} =$
$8.5 \times 10^{12} =$	$5.73 \times 10^{-10} =$

Rewrite each number below in scientific notation. Use the left or right digits to form a number between one and ten. Then count how many places you need to move the decimal point to find the power of ten.

Large Numbers	Small Numbers
1400 =	.0014 =
42,900 =	.000429 =
1,610,000 =	.00000161 =
519 =	.0519 =
7000 =	.007 =
100,000 =	.00001 =
10,000 =	.0001 =
1000 =	.001 =
100 =	.01 =

Rewrite each number below in standard form.

In space light travels about 2.98×10^5 kilometers in one second. That means light travels one kilometer in 3.36×10^{-6} seconds.

$2.98 \times 10^5 =$ $3.36 \times 10^{-6} =$

In one year light travels 9.46×10^{12} kilometers. Astronomers call this distance a light-year. A light-year is so far that it is not useful for measuring distances here on earth. A soccer field is about 1.1×10^{-14} light-years long. It's easier to say 100 meters.

$9.46 \times 10^{12} =$ $1.1 \times 10^{-14} =$

Proxima Centauri, the closest star other than the sun, is about 4.3 light-years or 4.1×10^{13} kilometers from earth. Sirius, the brightest star in the night sky, is about 8.1×10^{13} kilometers away.

$4.1 \times 10^{13} =$ $8.1 \times 10^{13} =$

On a clear night, far from city lights, you might see 3.5×10^3 stars without a telescope. In our galaxy, the Milky Way, there are about 1.4×10^{11} stars. Astronomers estimate that there may be 10^{22} stars in the entire universe.

$3.5 \times 10^3 =$ $1.4 \times 10^{11} =$

$10^{22} =$

The diameter of the moon is about 3.48×10^3 kilometers. The diameter of the earth is about 1.28×10^4 kilometers. The diameter of the sun is more than 100 times the diameter of the earth. It is about 1.39×10^6 kilometers.

$3.48 \times 10^3 =$ $1.28 \times 10^4 =$ $1.39 \times 10^6 =$

Earth's atmosphere is composed primarily of two gases, oxygen and nitrogen. These gases consist of tiny particles called molecules. One oxygen molecule weighs about 5.32×10^{-23} grams. One nitrogen molecule weighs about 4.65×10^{-23} grams.

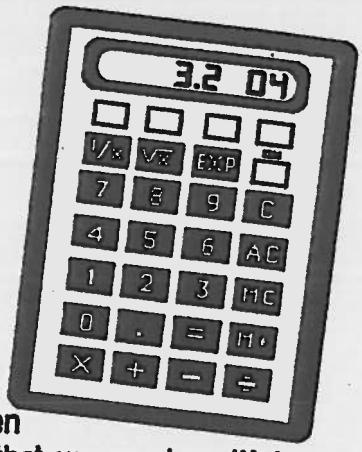
$5.32 \times 10^{-23} =$

$4.65 \times 10^{-23} =$

The earth is about 4.6×10^9 years old. Scientists estimate that the universe is about 1.5×10^{10} years old.

$4.6 \times 10^9 =$ $1.5 \times 10^{10} =$

Scientific Notation with Calculators



Some calculators have a special key for expressing numbers in scientific notation. It usually looks like this: EXP or EE .

EXP is short for exponent. In 3.2×10^4, the 4 is called an exponent.

A calculator with an exponent key is called a scientific calculator. Scientific calculators usually have many more buttons than regular calculators.

Scientific calculators display scientific notation without a multiplication sign and without the number ten. The display shows a number between one and ten followed by a space and the exponent. The exponent indicates the power of ten that you must multiply by.

What number is represented by each calculator display below?

Number between one and ten. Power of ten.

3.2 04 = $3.2 \times 10^4 = 32000.$

5.6 03 =

7.31 04 =

6.5 16 =

3.475 -12 =

2.7 -04 =

4. -03 =

1.268 -05 =

If you have a scientific calculator with an exponent button, do the rest of this page and the next page. If your calculator doesn't have an exponent button, skip them or do them later when you can use a scientific calculator.

Use your calculator to multiply and divide. Copy exactly what appears on the display. Don't guess.

$40 \times 30 =$ 1200.

$40 \times 300 =$

$40 \times 3{,}000 =$

$40 \times 30{,}000 =$

$40 \times 300{,}000 =$

$40 \times 3{,}000{,}000 =$

$40 \times 30{,}000{,}000 =$

$1 \div 25 =$

$1 \div 250 =$

$1 \div 2{,}500 =$

$1 \div 25{,}000 =$

$1 \div 250{,}000 =$

$1 \div 2{,}500{,}000 =$

$1 \div 25{,}000{,}000 =$

If some of the answers surprised you, that's because your calculator switched to scientific notation when the answer became very large or very small. Most calculators can't display numbers with more than eight digits (larger than 99999999 or smaller than 0.000001) in standard form.

Use your scientific calculator to multiply. Copy the display exactly.

Press these buttons	3 EXP 9	×	2 EXP 8	=	6. 17	
Scientific Notation	3×10^9	×	2×10^8	=		
Standard Form	3,000,000,000	×	200,000,000	=		

Press these buttons	4 . 2 EXP 7	×	1 . 9 EXP 5	=		
Scientific Notation	4.2×10^7	×		=		
Standard Form		×		=		

Press these buttons	1 . 3 EXP 8	×	2 EXP 1 1	=		
Scientific Notation		×		=		
Standard Form		×		=		

Use your scientific calculator to multiply. Express each answer as it appears on the calculator's display. It will be in scientific notation.

Standard Form	4,000,000,000	×	2,000,000,000	=	Let your calculator do the work!
Scientific Notation		×		=	
Calculator	□ EXP □	×	□ EXP □	=	

Standard Form	3,000,000	×	250,000,000	=	Let your calculator do the work!
Scientific Notation		×		=	
Calculator	□ □ □	×	□ . □ □ □	=	

Standard Form	490,000	×	6,700,000,000	=	Let your calculator do it!
Scientific Notation		×		=	
Calculator	□ □ □ □ □	×	□ □ □ □ □	=	

Word Names for Large Numbers

Underline each number that appears in the magazine article below.

HUMANS HAVE BEEN ON EARTH A SHORT TIME

Human beings have been on the earth for only a short part of the earth's history, according to biologist Dr. Sharona Barzilay.

The earth itself is 4.6 billion years old. About 3.5 billion years ago the first forms of life appeared in the oceans. Multi-celled organisms came into existence about 3.0 billion years ago.

It was only about 600 million years ago that large sea creatures were to be found in the earth's oceans. The first air-breathing animals emerged onto land about 350 million years ago.

Huge dinosaurs first roamed the earth about 200 million years ago. The oldest primates (ancestors of monkeys, apes and humans) developed about 40 million years ago.

The earliest indications of human-like creatures are 3.6 million year old footprints that have been discovered in Africa.

"So you see," says Barzilay, "human beings have inhabited the earth for less than a thousandth of the planet's existence. That's not very long."

Now write each number in three ways.

1 billion = 1,000,000,000 1 million = 1,000,000

Age of:

Earth	4.6 billion	4.6 × 1,000,000,000	4,600,000,000
Life			
Multi-celled Organisms			
Large Sea Creatures			
Land Animals			
Dinosaurs			
Primates			
Human-like Creatures			

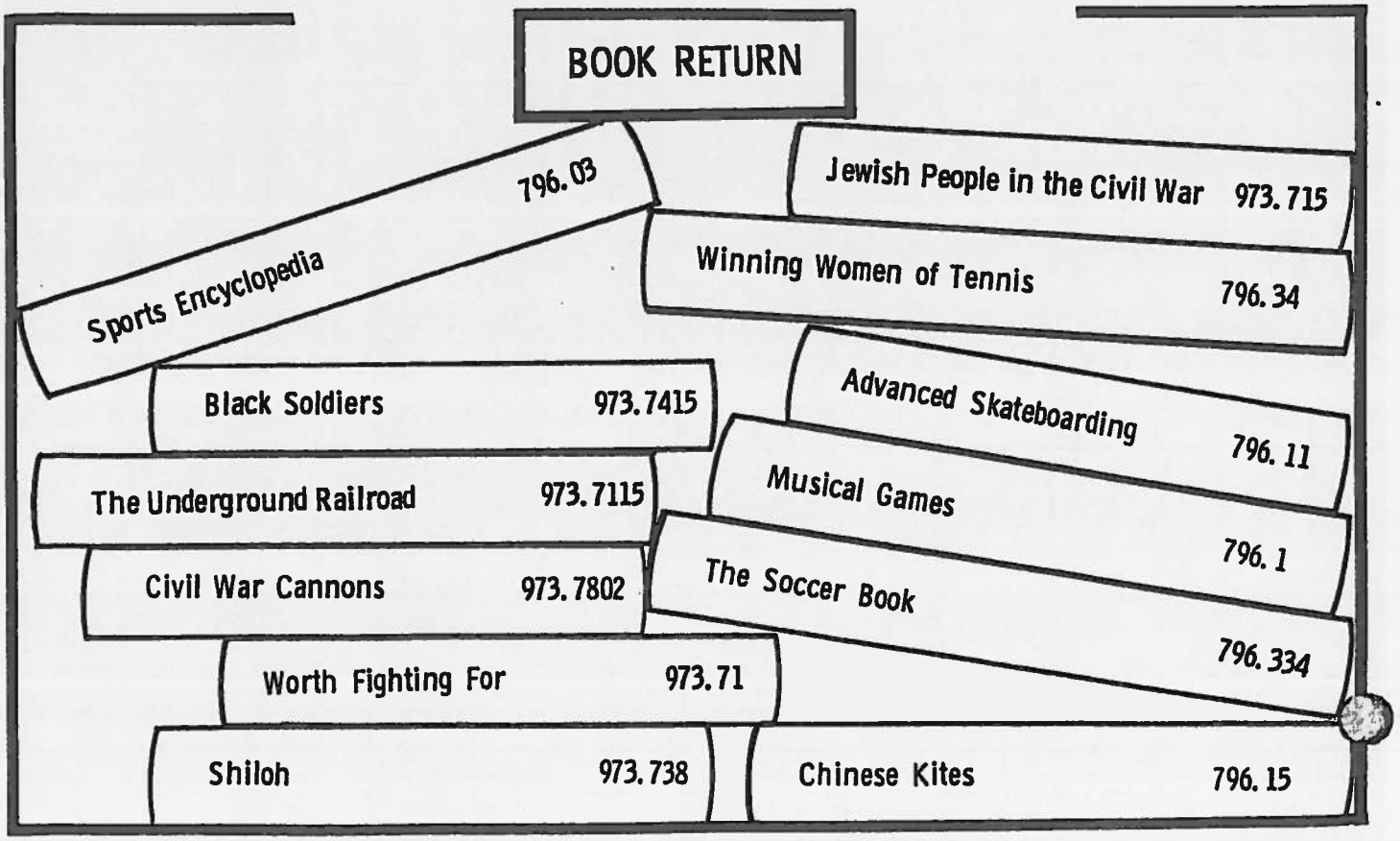
Decimal Numbers in Libraries

Some libraries use the Dewey Decimal System to organize their shelves. Each book has a decimal number written on its spine. The number identifies the subject of the book.

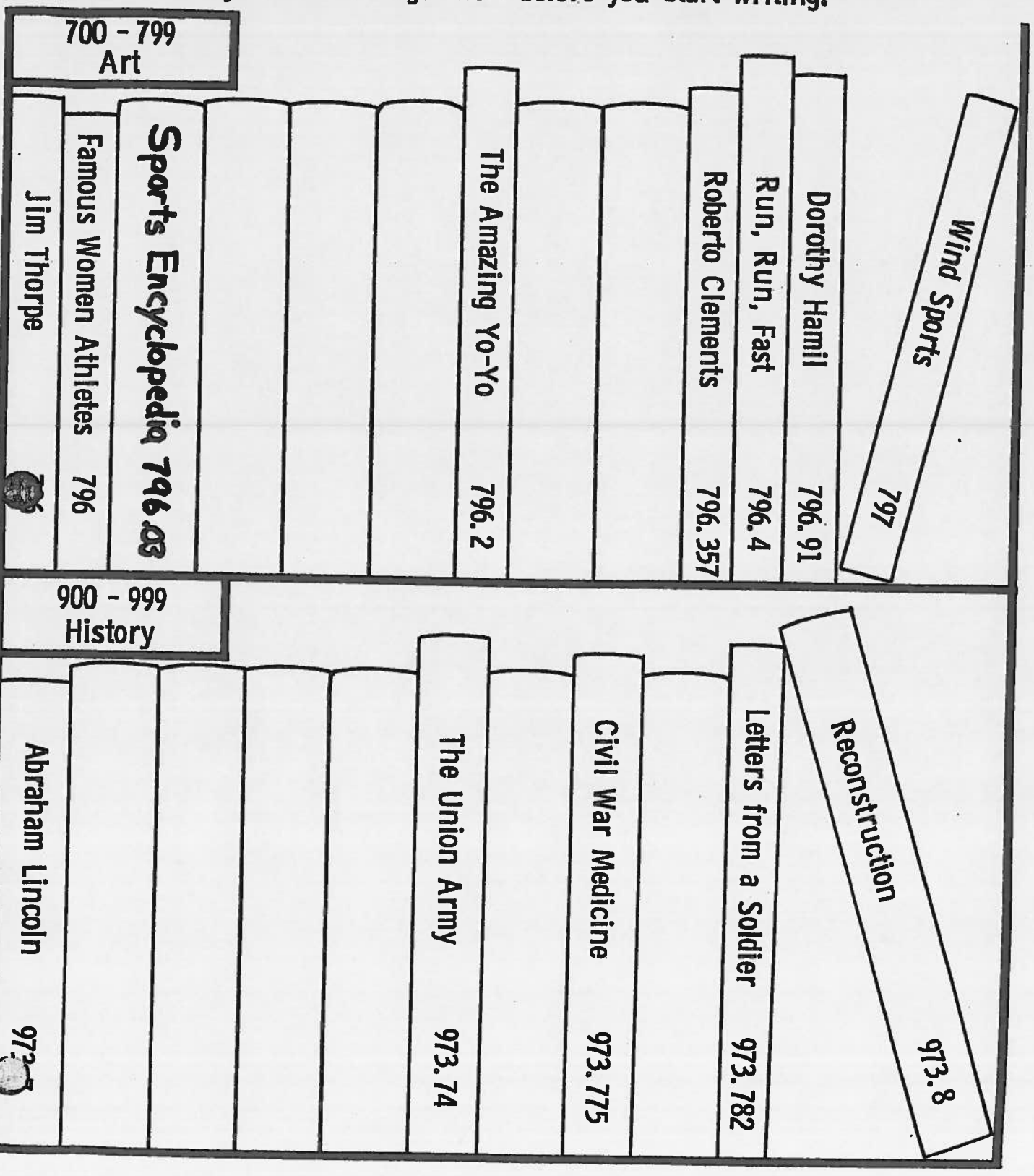
000 - 099 General	100 - 199 Philosophy	200 - 299 Religion	300 - 399 Social Science	400 - 499 Language
500 - 599 Pure Science	600 - 699 Technology	700 - 799 Art	800 - 899 Literature	900 - 999 History

Books are placed on the shelves in the order of their numbers. Higher numbers are placed to the right and lower numbers to the left, just as they are on a number line.

Marilyn wrote a report on the Civil War. She borrowed six books from the library. When she was finished, she placed the books in the book return bin. Jack wrote a report on sports. When he finished his research, he put his books in the return bin also.



You are the librarian's assistant. Your job is to replace the returned books back on the shelves where they belong. Show where Marilyn's and Jack's books belong on the shelves below. Write the correct name and Dewey Decimal Number on each blank book. You might want to cut out the books on page 42. Then you can arrange them before you start writing.

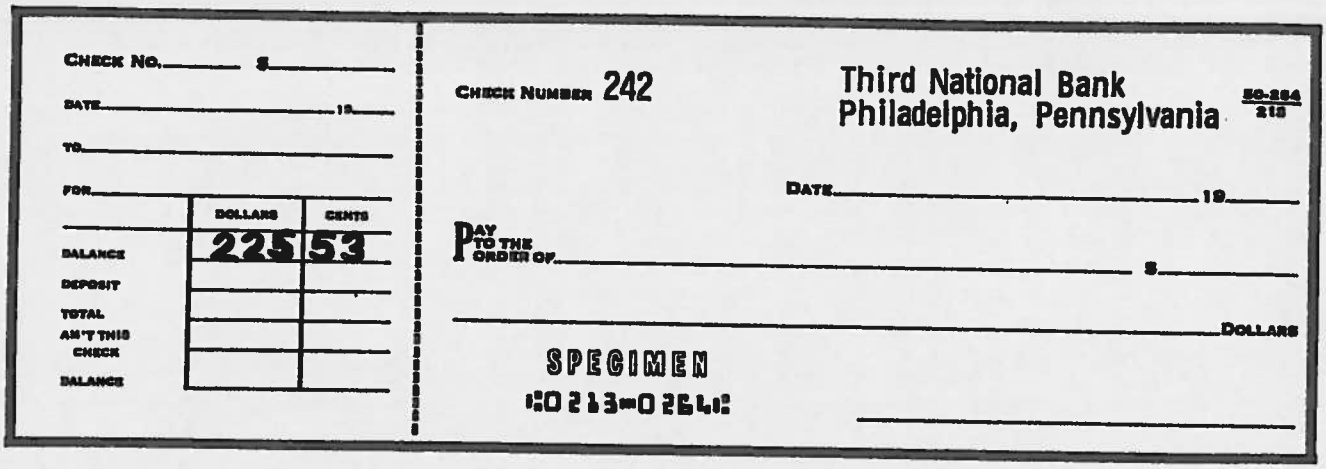


Practice Test - Key to Decimals Book 4

Name _____

Date _____

Write a check for $25.43 to Cost More Foods for groceries. Then fill out the stub.



Round off to the nearest whole number.

3.7 ≈

4.85 ≈

6.1 ≈

17.6342 ≈

Round off to the nearest tenth.

7.61 ≈

2.361 ≈

7.65 ≈

2.4259 ≈

Find the answer to the nearest hundredth.

11 ÷ 6 ≈

Bonzo bought 6 bananas for $1.35. Estimate the cost of each banana to the nearest cent.

Each banana cost about $____ .

Round off each number to the nearest whole number. Then add or subtract to estimate the answer.

$$\begin{array}{r} 2.62 \\ +3.19 \\ \hline \end{array}$$

$$\begin{array}{r} 8.09 \\ 2.643 \\ +5.7 \\ \hline \end{array}$$

$$\begin{array}{r} 22.7 \\ -15.46 \\ \hline \end{array}$$

Practice Test - Page 2

Find the average of 6 and 7.4.

The average is _____.

23.4 cm of rain fell one month and 27.7 cm fell the next month. Find the average to the nearest tenth.

The average rainfall was _____ cm.

Find the average of 87, 76, 91 and 79 rounded off to the nearest whole number.

The average is _____.

Find an equal length.

1 m = _____ cm

3.7 m = _____ cm

1 km = _____ m

7.5 km = _____ m

Circle the reasonable answer.

Deepest point in the Pacific Ocean:

11 mm 11 cm 11 m 11 km

Length of a fork:

17.2 mm 17.2 cm 17.2 m 17.2 km

Length of a car:

3.5 mm 3.5 cm 3.5 m 3.5 km

Thickness of a quarter:

1.5 mm 1.5 cm 1.5 m 1.5 km

Write each number in standard form.

$5.62 \times 10^{4} =$

$8.71 \times 10^{-2} =$

$3.2 \times 10^{6} =$

$3.2 \times 10^{-6} =$

Write each number in scientific notation.

2,100,000 =

.00021 =

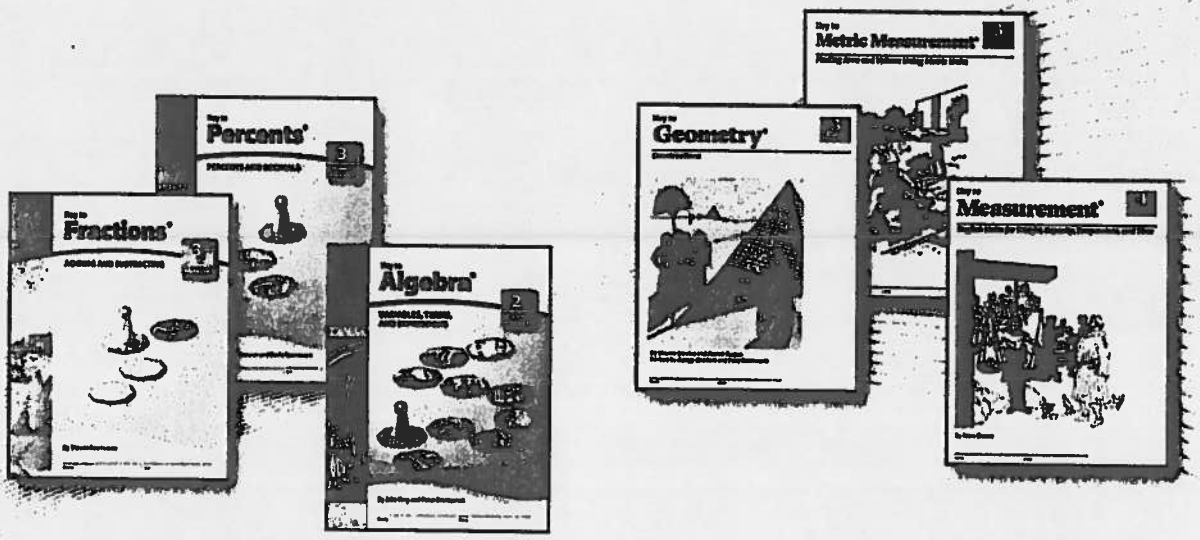
47,000,000 =

.0000028 =

Key to Decimals® workbooks

Book 1: Decimal Concepts
Book 2: Adding, Subtracting, and Multiplying
Book 3: Dividing
Book 4: Using Decimals

Answers and Notes for Books 1–4
Reproducible Tests for Books 1–4



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