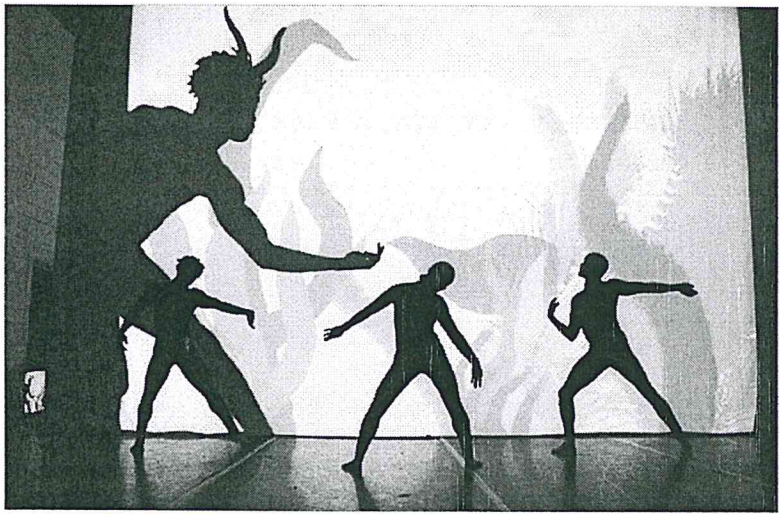
Name _____

Kech Rehearsal
Dividing Decimals Packet
Due Friday, May 15



You already know how to divide with decimals when the divisor is a whole number. Dividing when the divisor has decimal digits is a little harder. You must first rewrite the problem as division by a whole number. Then you can divide.

Rewrite each division problem where the divisor has decimal digits as a division problem where the divisor is a whole number.

Divisor has decimal digits.	Rewrite the division as a fraction. Then multiply both numerator and denominator by 10 or 100 to make the denominator a whole number.	Rewrite as standard division. Now divisor is a whole number.
$.3\overline{)\,.27}$	$\frac{.27}{.3} \times \frac{10}{10} = \frac{2.7}{3}$	$3\overline{)\,2.7}$
$.5\overline{)\,.35}$	$\frac{\quad}{\quad} \times \frac{10}{10} = \frac{\quad}{\quad}$	
$.2\overline{)\,6.8}$		
$.04\overline{)\,.368}$	$\frac{\quad}{\quad} \times \frac{100}{100} =$	
$.06\overline{)\,1.56}$		
$.11\overline{)\,9.9}$		
$1.2\overline{)\,7.2}$		

Dividing by a Decimal Number

To divide by a decimal number you first rewrite the problem as division by a whole number. Then you can divide.

Problem	Step 1	Step 2	Step 3
Use these steps when the divisor has decimal digits.	Rewrite the division as a fraction. Then multiply numerator and denominator by 10 or 100 to make the denominator a whole number.	Now you're dividing by a whole number. Rewrite the fraction as standard division and divide. Circle your answer.	Check. Multiply your answer by the divisor from the original problem.
$.3\overline{)15}$	$\frac{15 \times 10}{.3 \times 10} = \frac{150}{3}$	$3\overline{)150}$ (50) -15 00 -0 0	50 (Answer) $\times .3$ (Original divisor) 15.0 (Original dividend. It works!)
$.5\overline{)2.5}$	$\frac{2.5 \times}{.5 \times} =$ (1 decimal digit so multiply by 10.)		
$.2\overline{)6.}$			
$.4\overline{)8.4}$			
$.4\overline{)84}$			

Divide. Check each answer with numbers from the original problem.

$.07\overline{)35}$

$\frac{35 \times 100}{.07 \times 100} = \frac{3500}{7}$

$7\overline{)3500}$ → 500

-35

00

-0

00

-0

0

check your answer with original problem

500 answer

$\times .07$

$35\ 00$

0000

35.00

Since 35.00 = 35 it works!

$.07\overline{)3.5}$

$\frac{3.5 \times 100}{.07 \times 100} =$

check your answer with original problem

$.7\overline{)35}$

check your answer with original problem

$.7\overline{)3.5}$

check your answer with original problem

$.2\overline{)41}$

check

$.3\overline{)21.6}$

check

$.8\overline{)32}$

check

$.5\overline{)10.5}$

check

Another Method for Dividing by a Decimal Number

Here is another way to divide when the divisor has decimal digits. With this method, you do not have to rewrite the division as a fraction. Follow the steps below.

Problem

$.2\overline{)1.36}$

Step 1

Count the decimal digits in the divisor.

(1 decimal digit)

$.2\overline{)1.36}$

Step 2

Move both decimal points to the right that number of places.

$.2\overline{)1.36}$

Step 3

Put a decimal point above the spot where you stop.

$.2\overline{)1.36}$

Step 4

Divide like you would with whole numbers.

$$\begin{array}{r} 6.8 \\ .2\overline{)1.36} \\ -12 \\ \hline 16 \\ -16 \\ \hline 0 \end{array}$$

Step 5

Check. Multiply your answer by the original divisor and see if the product equals the original dividend.

$$\begin{array}{r} {\scriptstyle 1} \\ 6.8 \\ \times\ .2 \\ \hline 1.36 \end{array}$$

Divide and check.

$$\begin{array}{r} 12.7 \\ 3.\overline{)38.1} \\ -3 \\ \hline 08 \\ -6 \\ \hline 21 \\ -21 \\ \hline 0 \end{array}$$

check

$$\begin{array}{r} {\scriptstyle 2} \\ 12.7 \\ \times\ .3 \\ \hline 3.81 \end{array}$$

Use original divisor and original dividend.

$.2\overline{)4.38}$ check

Use original divisor and original dividend.

$.4\overline{)6.28}$ check

$.5\overline{)7.15}$ check

Divide. Check each problem.

$.2\overline{)3.654}$ $.4\overline{)58.36}$ $.5\overline{)1.385}$

$.3\overline{).7131}$ $.2\overline{)63.08}$ $.6\overline{).0972}$

$.9\overline{)1.512}$

Whichever way you divide, the answer should be the same. Finish the division problems below.

$.4\overline{)3.84}$

$\frac{3.84}{.4} \times \frac{10}{10} = \frac{38.4}{4}$

$4\overline{)38.4}$

$$\begin{array}{r} 9. \\ 4\overline{)38.4} \\ -36 \end{array}$$

Are both answers the same? yes / no

Dividing by Hundredths

On this page you will be dividing by decimal numbers with two decimal digits. Divide and check.

$$
\begin{array}{r}
218.8 \\
.02\overline{)4376} \\
-4 \\
\hline
03 \\
-2 \\
\hline
17 \\
-16 \\
\hline
16 \\
-16 \\
\hline
0
\end{array}
\qquad
\begin{array}{r}
{\scriptstyle 1\ \ 1} \\
218.8 \\
\times\ \ .02 \\
\hline
4376 \\
00000 \\
\hline
4.376
\end{array}
$$

$.05\overline{)9.835}$

$.03\overline{)9.468}$

$.02\overline{).7314}$

$.06\overline{).4134}$

$.04\overline{)13.48}$

$.12\overline{)2.808}$

$.11\overline{)6.006}$

$.13\overline{)5.395}$

Sandy started the problem below but got stuck. Pat helped out.

Step 1	$.03\overline{)11.4}$	Count the decimal digits in the divisor.
Step 2	$.03\overline{)11.4}$	Help! There aren't enough decimal digits in the dividend!
Step 3	$.03\overline{)11.40}$	Put a zero at the end of the dividend after the decimal point. (This won't change its value.)
Step 4	$\times 03.\overline{)11\times 40.}$	Move both decimal points to the right.
Step 5	$\times 03.\overline{)11\times 40.}$	Put a decimal point where it belongs and divide.

In each problem below you must put a zero at the end of the dividend before you divide.

Divide and check.

$$\begin{array}{r} 128. \\ \times 05.\overline{)6\times 40.} \\ -5 \\ \hline 14 \\ -10 \\ \hline 40 \\ -40 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 14 \\ 128. \\ \times .05 \\ \hline 640 \\ 0000 \\ \hline 6.40 \end{array}$$

$$\times 02.\overline{)8\times 50.}$$

$$.04\overline{)8.4}$$

You put the zero at the end.

$$.03\overline{)16.2}$$

$$.05\overline{)43.7}$$

$$.12\overline{)86.4}$$

To divide a whole number written without a decimal point by a decimal number, just put a decimal point to the right of the whole number and then divide as you did on the last page.

If the problem looks like this: $.4\overline{)30}$

Put a decimal point to the right of the whole number so it looks like this: $.4\overline{)30.}$

Put a decimal point to the right of each whole number and then divide. Check each answer.

$$\begin{array}{r} 75. \\ .4\overline{)30.0} \\ -28 \\ \hline 20 \\ -20 \\ \hline 0 \end{array}$$

$$\begin{array}{r} 75 \\ \times\ .4 \\ \hline 30.0 \end{array}$$

$.2\overline{)71}$

$.5\overline{)92}$

$.6\overline{)45}$

$.3\overline{)81}$

$.4\overline{)81}$

You'll need more than one zero to finish this division.

$.4\overline{)175}$

$.3\overline{)948}$

$.5\overline{)371}$