

### Steps to Divide Decimals

1. W.O.P.
2. Set up problem in long division format.
3. If dividend does not contain a decimal point, place one at the end.
4. If divisor has a decimal point, move decimal point all the way to the right and do the same move for the decimal point in the dividend. Add zeros in dividend, if necessary, when moving decimal point.
5. Copy the decimal point directly above in quotient area.
6. Divide as usual.
7. Do not use a remainder in decimal division. If there is a remainder, insert zeros in the original dividend at end of the dividend.
8. Continue to divide until number goes in evenly, or enough to do rounding to a particular place. If the answer is a repeating decimal, then stop.

Example:  $4.6 \div .24$

- Set up problem in long division format:

$$.24 \overline{) 4.6}$$

- We see that .24, the divisor, has a decimal point. Move the decimal point two places to the end (see **red arrow** ↘). Do the same move in the dividend and insert a zero (see **green zero**). Copy the decimal directly above to the quotient area (see **purple arrow** ↙).

$$.24 \overline{) 4.60}$$

↙ (purple arrow pointing to the decimal point in the quotient area)  
↘ (red arrow pointing to the decimal point in the divisor)  
↘ (green arrow pointing to the zero in the dividend)

- Start dividing and there is a remainder of four. Keep dividing, by inserting a zero (see **blue zero**). Bring down the zero and continue to divide. There is now a new remainder.

$$\begin{array}{r}
 19.1 \\
 24 \overline{) 460.0} \\
 \underline{-24} \phantom{0} \\
 220 \\
 \underline{-216} \\
 40 \\
 \underline{-24} \\
 16
 \end{array}$$

- Insert more zeros (see **blue zeros**) and continue division. The problem repeats with 6's.

$$\begin{array}{r}
 19.166 \\
 24 \overline{) 460.000} \\
 \underline{-24} \phantom{00} \\
 220 \\
 \underline{-216} \\
 40 \\
 \underline{-24} \\
 160 \\
 \underline{-144} \\
 160 \\
 \underline{-144} \\
 16
 \end{array}$$

- When doing these problems, all of the decimal moves, insertion of zeros, etc., are done in one problem. The previous steps were only broken up for instructional purposes. An actual problem would look like the following.

$$\begin{array}{r}
 19.166 \\
 \hline
 .24 \overline{) 4.60.000} \\
 \underline{-24} \phantom{000} \\
 220 \phantom{00} \\
 \underline{-216} \phantom{00} \\
 40 \phantom{00} \\
 \underline{-24} \phantom{00} \\
 160 \phantom{00} \\
 \underline{-144} \phantom{00} \\
 160 \phantom{00} \\
 \underline{-144} \phantom{00} \\
 \phantom{00} 160 \\
 \phantom{00} \underline{-144} \\
 \phantom{00} 160
 \end{array}$$