

Decimals

How do you divide a number by a decimal?

When you divide a number (whether it's a whole number or a decimal) by a decimal, you must alter the problem so that you are dividing by a whole number. It isn't as bad as it sounds. It is just a matter of sliding some decimal points.

Example

$$4.374 \div 0.03 = ?$$

Original problem in long division form:

$$0.03 \overline{)4.374}$$

Step 1.) Move the decimal point on the number you are dividing with (**0.03**) to the far right so that it becomes a whole number (**3**):

$$\begin{array}{ccc} 0.03 \overline{)4.374} & & 3 \overline{)4.374} \\ \text{2 places} & & \end{array}$$

Step 2.) Next, move the decimal point on the number under the division symbol the same number of places to the right:

$$\begin{array}{ccc} 3 \overline{)4.374} & & 3 \overline{)437.4} \\ \text{2 places} & & \end{array}$$

Step 3.) Bring up the decimal point and finish the problem:

$$\begin{array}{ccc} 3 \overline{)437.4} & & \begin{array}{r} 145.8 \\ 3 \overline{)437.4} \\ \underline{3} \\ 13 \\ \underline{12} \\ 17 \\ \underline{15} \\ 24 \\ \underline{24} \\ 0 \end{array} \end{array}$$

Example

$$29.76 \div 1.2 = ?$$

Step 1.)

$$1.2 \overline{)29.76}$$

Step 2.)

$$12 \overline{)297.6}$$

Step 3.)

$$\begin{array}{r} 24.8 \\ 12 \overline{)297.6} \\ \underline{24} \\ 57 \\ \underline{48} \\ 96 \\ \underline{96} \\ 0 \end{array}$$

Answer

The decimal point has been moved one position to the right here...
...and here.