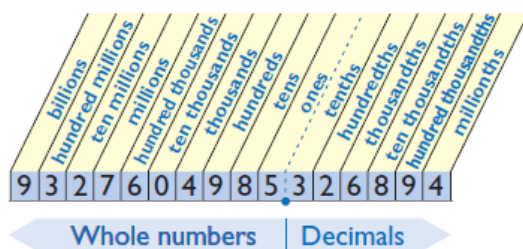# Decimal Numbers

The numbers after the decimal point represent fractions with denominators that are powers of 10. The decimal point separates the whole number part from the fractional part.

For example, 0.9 represents $\frac{9}{10}$.

Place Value Chart

ADDING AND SUBTRACTING DECIMAL NUMBERS

To add or subtract decimal numbers, line up the numbers so that the decimal points are aligned. Then add or subtract as usual, keeping the decimal point in the same place.

For example, $23 - 0.37 =$

$$
\begin{array}{r}
23.00 \\
-\ 0.37 \\
\hline
=\ 22.63
\end{array}
$$

MULTIPLYING AND DIVIDING DECIMAL NUMBERS

To multiply decimal numbers, multiply them as though they were whole numbers. The number of decimal places in the product is the sum of the number of decimal places in the factors. *For example*, 3.72×4.5 is

$$
\begin{array}{r}
3.72 \quad\text{— 2 decimal places} \\
\times\ 4.5 \quad\text{— 1 decimal place} \\
\hline
16.740 \quad\text{— 3 decimal places}
\end{array}
$$

To divide decimal numbers, first make sure the divisor is a whole number. If it is not, move the decimal place to the right (multiply by 10, 100, and so on) to make it a whole number. Then move the decimal point the same number of places in the dividend.

For example,

$$0.42 \div 1.2 = 4.2 \div 12$$

$$
= 12\overline{)4.20}^{\,0.35}.
$$

The decimal point in the answer is placed directly above the new decimal point in the dividend.