Chapter 12

Exponents and Powers

Standard form:

Numbers written using exponents are said to be in scientific notation or standard form.

i.e., A number, which is expressed as a decimal between 1.0 and 10.0 including 1.0 multiplied by a power of 10, is called a number in the "Standard form" or "Scientific notation".

Example (1):

The distance from the earth to the sun is 149,600,000,000 m. Such a large number in calculation we write in standard form as 1.496×10^{11}m.

- 53.45 x 10 = 534.5
- 2.67 x 100 = 267.0
- 3.8 x 1000 = 3800

Example (2):

Thickness of piece of paper is 0.0016 cm such a small number even less than unit also can be written in standard form as 1.6×10^{-3}.

- $\frac{567}{10} = 56.7$
- $\frac{789.23}{100} = 7.8923$
- $\frac{35}{1000} = 0.035$

Note:

If the number is less than one, then move the decimal point to the right so that there is just one digit on the left side of the decimal point. Write the given number as the product of the number so obtained and 10^{-n}, where 'n' is the number of places the decimal point has been moved to the right. The number so obtained is the standard form of the given number.