Significant Figures

Significant figures in the measured value of a physical quantity tell the number of digits in which we have confidence. Larger the number of significant figures obtained in a measurement, greater is the accuracy of the measurement. The reverse is also true.

The following rules are observed in counting the number of significant figures in a given measured quantity.

(1) All non-zero digits are significant.

Example : 42.3 has three significant figures.

243.4 has four significant figures.

24.123 has five significant figures.

(2) A zero becomes significant figure if it appears between to non-zero digits.

Example: 5.03 has three significant figures.

5.604 has four significant figures.

4.004 has four significant figures.

(3) Leading zeroes or the zeroes placed to the left of the number are never significant.

Example: 0.543 has three significant figures.

0.045 has two significant figures.

0.006 has one significant figures.

(4) Trailing zeroes or the zeroes placed to the right of the number are significant.

Example: 4.330 has four significant figures.

433.00 has five significant figures.

343.000 has six significant figures.

(5) In exponential notation, the numerical portion gives the number of significant figures.

Example:1.32×10^{-2} has three significant figures.
1.32×10^{4} has three significant figures.