STATISTICS

MEAN

(1) $Simple\ mean,\ \bar{x} = \frac{\sum x_i}{n}$

(2) $Weighted\ mean,\ \bar{x} = \frac{\sum f_i x_i}{\sum f_i}$

(3) $Short - cut\ method\colon\ \bar{x} = A + \frac{\sum f_i d_i}{\sum f_i}$

(4) $Step - deviation\ method\colon\ \bar{x} = A + \frac{\sum f_i u_i}{\sum f_i} \times h$

(5) $Mean\ of\ a\ composite\ sample = \frac{n_1\overline{x_1}+n_2\overline{x_2}}{n_1+n_2}$

$where,$

$n = Total\ observations$

$x_i = Mid\ values\ of\ the\ class\ intervals$

$f_i = Frequencies\ of\ the\ class\ intervals$

$A = Assumed\ mean$

$d_i = x_i - A$

$u_i = \frac{x_i - A}{h}$

$h = Width\ of\ each\ class$

MEDIAN

$$\boldsymbol{Median = l + \frac{\frac{N}{2} - CF}{f_m} \times h}$$

$where,$

$l = Lower\ boundary\ of\ median\ class$

$N = Total\ frequency$

$CF = Cumulative\ frequency\ of\ the\ class\ preceeding\ to\ the\ median\ class$

$f_m = Frequency\ of\ the\ median\ class$

$h = Width\ of\ the\ median\ class$

Quartiles, Deciles & Percentiles