

CLASS 10

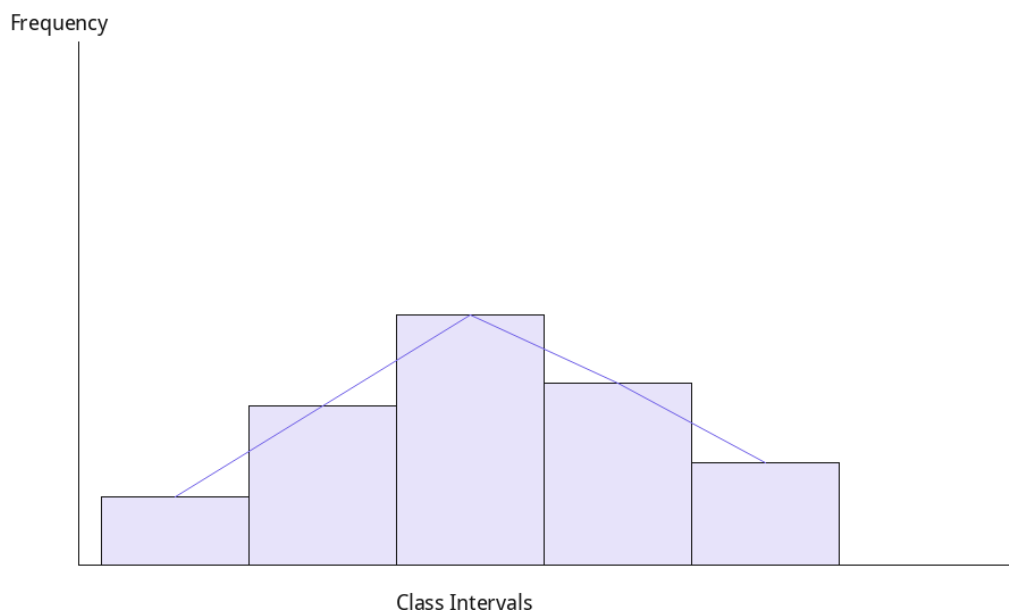
MATHS

REVISION NOTES

Class 10 Maths Chapter 13 Statistics Revision Notes

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Class 10 Maths Chapter 13 – Statistics: Quick Revision Notes



A histogram (bars) with its frequency polygon (joining line) -- used to visualise grouped frequency data.

Reference figure — histogram of grouped data

Class 10 Maths Chapter 13 – Statistics: Quick Revision Notes

Class mark $x_i = (\text{Upper limit} + \text{Lower limit})/2$

Mean (Direct): $\bar{x} = \frac{\sum f_i x_i}{\sum f_i}$

Mean (Assumed Mean): $\bar{x} = a + \frac{\sum f_i d_i}{\sum f_i}$, $d_i = x_i - a$ — use for unequal class widths

Mean (Step-Deviation): $\bar{x} = a + \left(\frac{\sum f_i u_i}{\sum f_i} \right) \times h$, $u_i = (x_i - a)/h$ — use for equal widths, large numbers

All three mean methods always give the same numeric answer

Inclusive/gapped classes must be converted to continuous classes first (adjust limits by half the gap)

Mode = $l + \left[\frac{(f_1 - f_0)}{(2f_1 - f_0 - f_2)} \right] \times h$ — modal class = class with highest frequency

Median = $l + \left[\frac{(n/2 - cf)}{f} \right] \times h$ — median class = first class whose cf $\geq n/2$, found from a cumulative frequency table

“Less than” cumulative tables must be converted to individual class frequencies before use

Empirical relationship: Mode = 3 Median – 2 Mean (equivalently 3 Median = Mode + 2 Mean)

Ogive: less-than ogive rises (upper limits vs cf); more-than ogive falls (lower limits vs cf); their intersection's x-coordinate gives the median graphically

Common trap: modal class = highest frequency, NOT highest cumulative frequency

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