Statistics

MonoMath.com - Ajay Yadav

Statistics

Board:

CBSE |

Class:

Class 9

Comprehensive study notes for

Statistics

by

Ajay Yadav

(Math King of Katargam). Master every concept with clear explanations, solved examples, and practice problems.

Key Concepts

Introduction to Statistics

Statistics

deals with collection, organization, analysis, and interpretation of data.

Data:

Facts and figures collected for analysis.

Primary data:

Collected directly.

Secondary data:

Already collected by others.

Presentation of Data

Data can be presented as:

Ungrouped

(raw data),

Grouped

(organized into intervals),

Frequency Distribution

(showing how often each value occurs).

Measures of Central Tendency

Mean:

Average of all values.

Median:

Middle value when data is arranged in order.

Mode:

Most frequently occurring value.

Mean of Ungrouped Data

Mean = (Sum of all observations) / (Number of observations). For grouped data: Mean = ?(fixi) / ?fi.

Median

Arrange data in ascending order. If n is odd: Median = (n+1)/2th term. If n is even: Median = Average of (n/2)th and

(n/2+1)th terms.

Mode

The value with the highest frequency. A dataset may have one mode (unimodal), two modes (bimodal), or no mode.

Graphical Representation

Data can be shown as:

Bar graphs

(bars of equal width),

Histograms

(for grouped data),

Frequency polygons

(line graph joining midpoints),

Pie charts

(for percentages).

Important Formulas

Mean

x = ?x/n

Median (odd n)

Median = (n+1)/2th term

Median (even n)

Median = [n/2th + (n/2+1)th]/2

Mean (grouped)

x = ?fx/?f

Solved Examples

Example 1:

Find the mean of 3, 7, 9, 12, 14.

Solution:

Mean = (3+7+9+12+14)/5 = 45/5 =

9

.

Example 2:

Find the median of 4, 8, 2, 9, 5, 1.

Solution:

Arrange: 1, 2, 4, 5, 8, 9. n=6 (even). Median = (4+5)/2 =

4.5

.

Example 3:

Find the mode of 2, 4, 4, 5, 7, 4, 8, 9, 4, 6.

Solution:

4 occurs 4 times (most frequent).

Mode = 4

.

Practice Questions

Find the mean of first 10 natural numbers.

Find the median of 23, 18, 25, 20, 19, 22, 21.

Find the mode of 1, 3, 2, 3, 4, 1, 3, 5, 3, 2, 1.

The mean of 6 numbers is 12. If one number 8 is removed, find the new mean.

Draw a frequency distribution table for: 3, 5, 2, 3, 4, 5, 3, 2, 4, 3, 5, 3.

Download PDF

Click here to download the PDF notes for this chapter. (Coming soon)

Video Lessons

Watch video explanations on our Videos page.