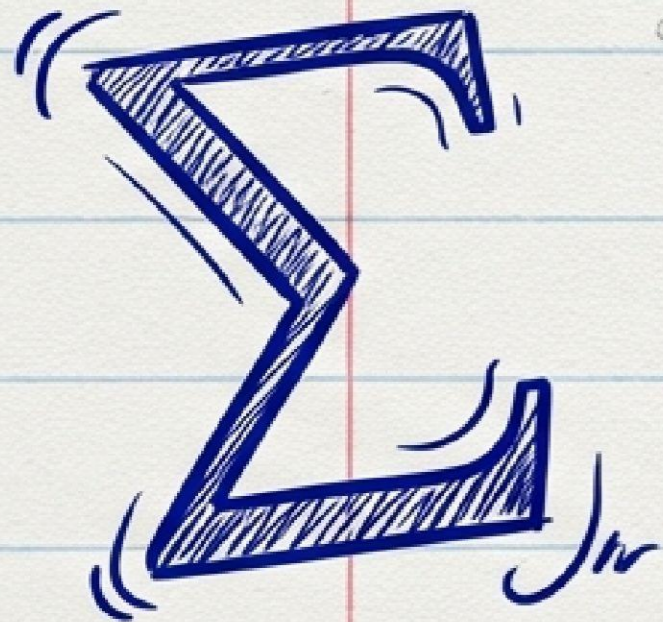


STATISTICS

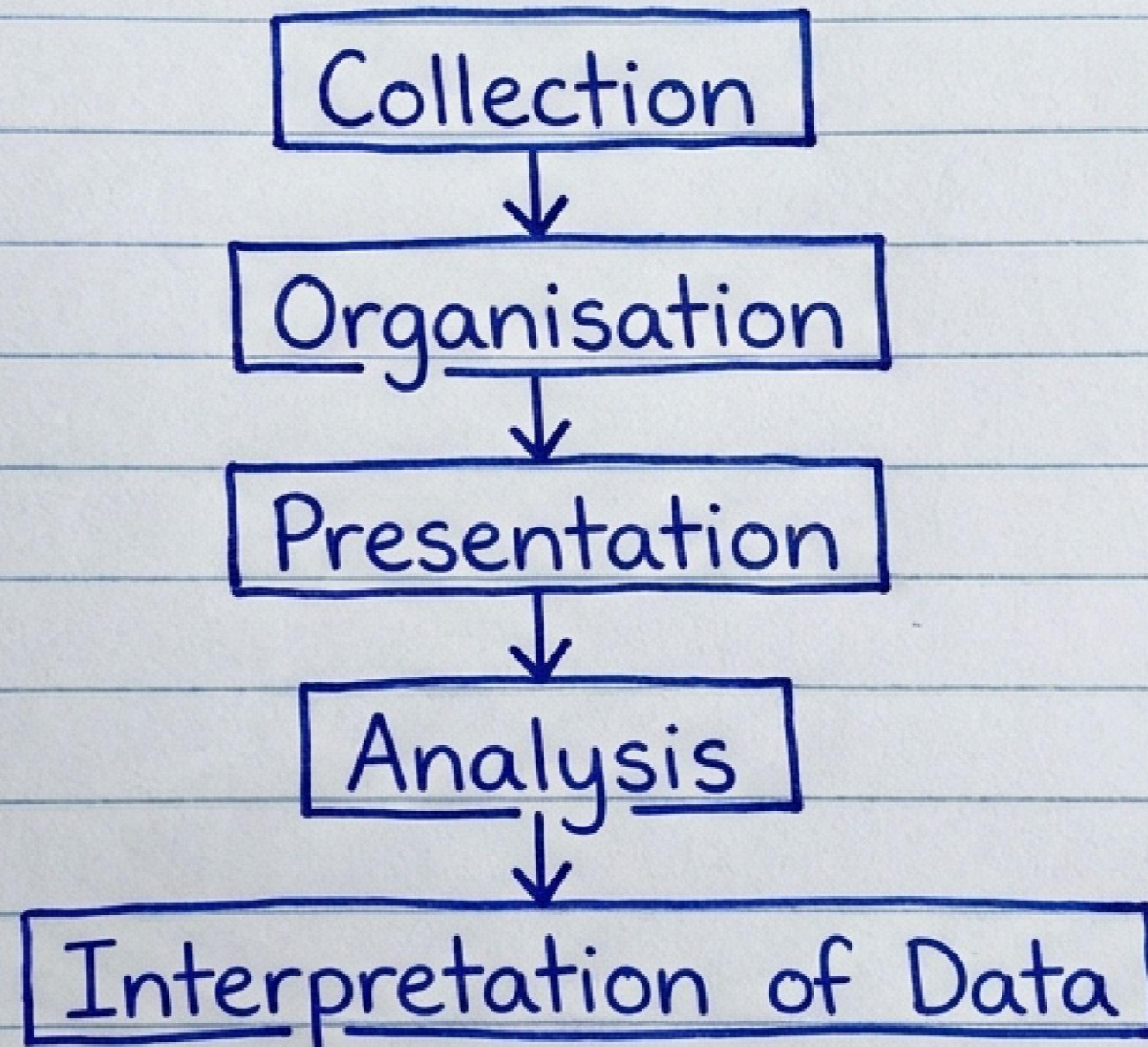
Revision Notes & Key Concepts



Focus:
From Data
to Decisions

1. What is Statistics?

The branch of mathematics dealing with:



Goal: To understand information clearly & make decisions.

2. The Data (Numerical Facts)

Raw Data

12 5 8
1 12 9 5
9 4 9 12 9 5
3 17 3 14
15 9 8 15 4
15 2 3 7 12
14

Organised →

Grouped Data

Marks	Students
0-10	2
10-20	5
20-30	3

Data collected in original form (Messy!)

Arranged in class intervals (Tidy!)

3. Frequency Distribution Table

Range of values
(e.g., 0-10)

How often
it happens

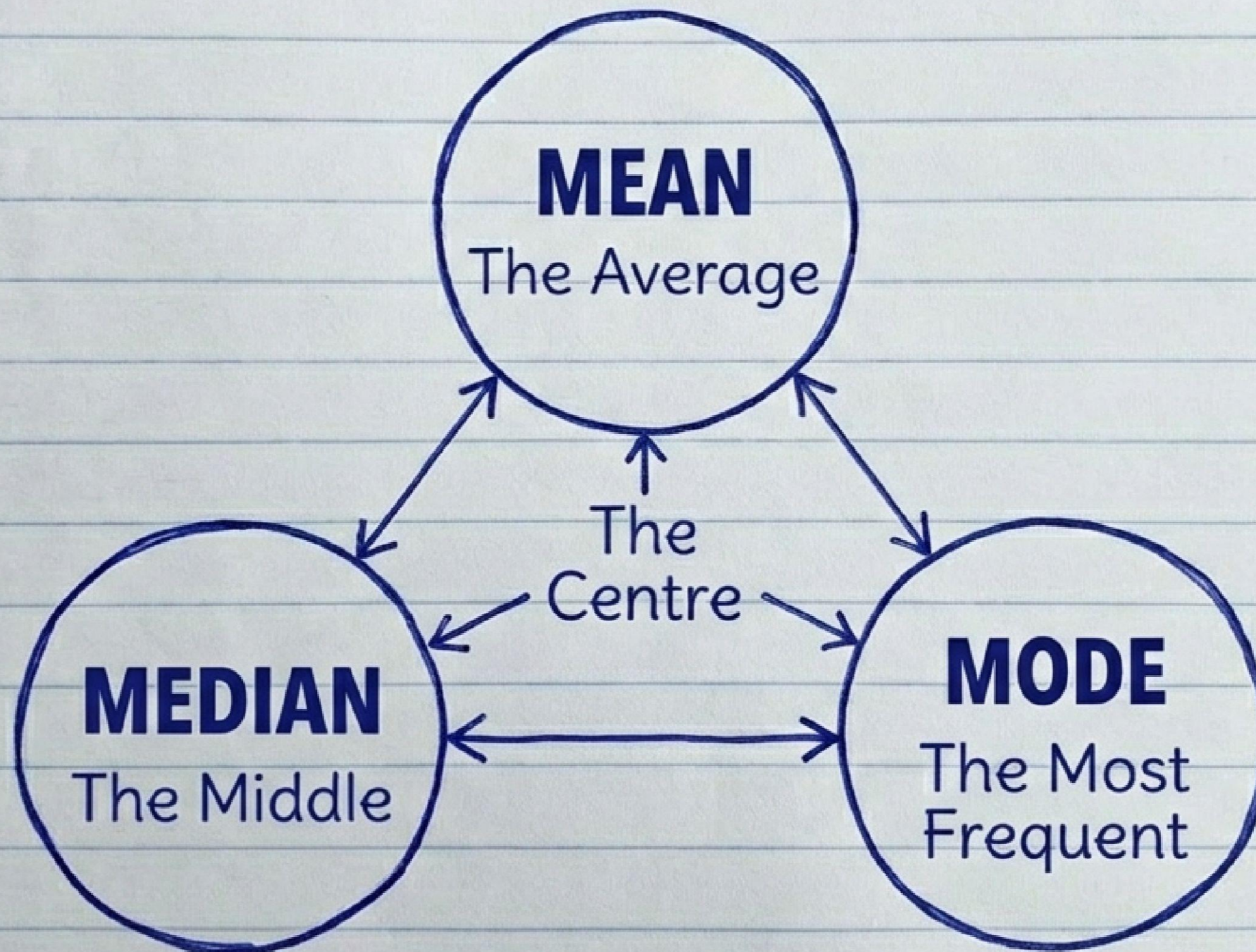
Mid-value

Class Interval	Frequency (f)	Class Mark (x)

$$\text{Class Mark (x)} = \frac{\text{Lower limit} + \text{Upper limit}}{2}$$

4. Measures of Central Tendency

Values that represent the centre of the data.



(a) The Mean

$$\text{Mean} = \frac{\sum fx}{\sum f}$$

Sum / Total

Example:

If Total fx ($\sum fx$) = 300

And Total f ($\sum f$) = 10

Then:

$$300 \div 10 = \underline{\underline{30}}$$

(b) The Median

The middle value of the data.

Steps to Find It

- Arrange data in **ASCENDING** order
- Find the cumulative frequency.
- Use the median formula.

2, 5, **8**, 11, 14

(c) The Mode

The value which occurs most frequently.

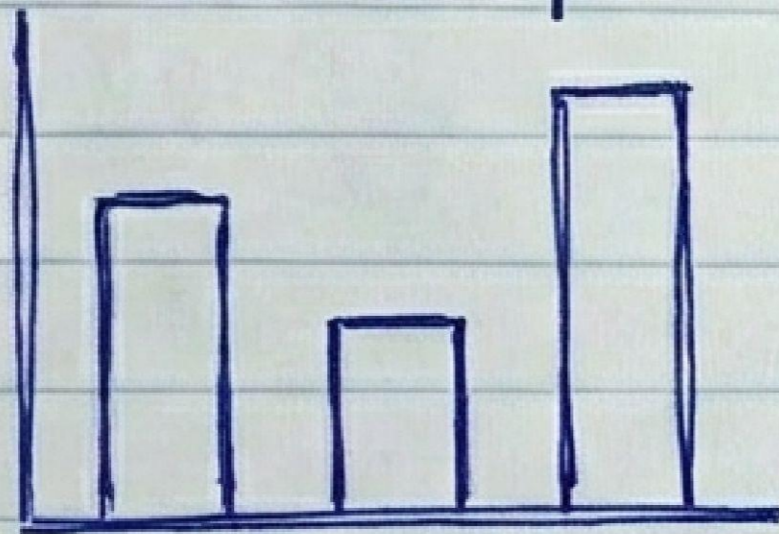
5, 8, 9, 9, 9, 12

Most frequent = Mode

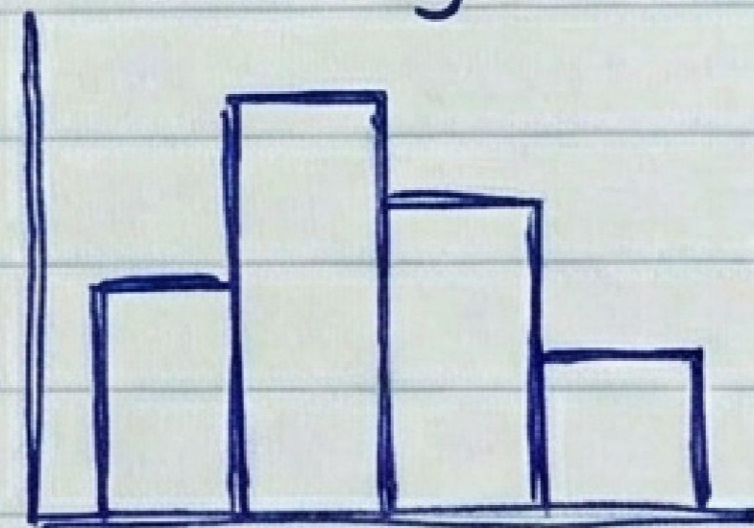
5. Graphical Representation

Visuals for easy understanding.

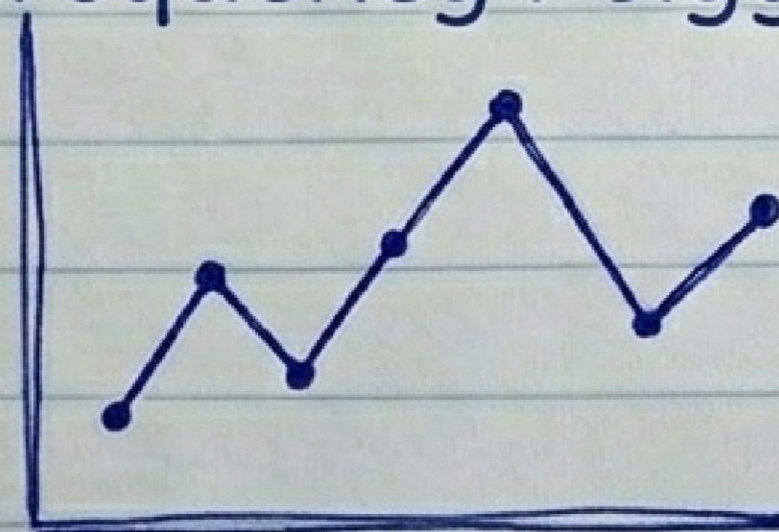
Bar Graph



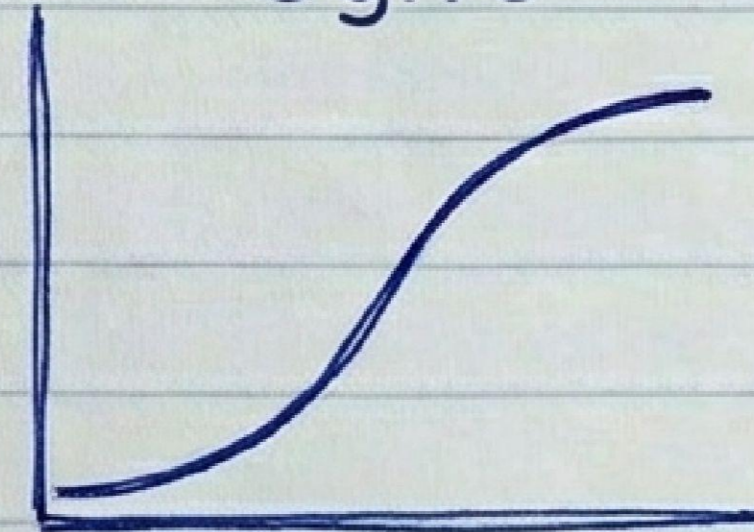
Histogram



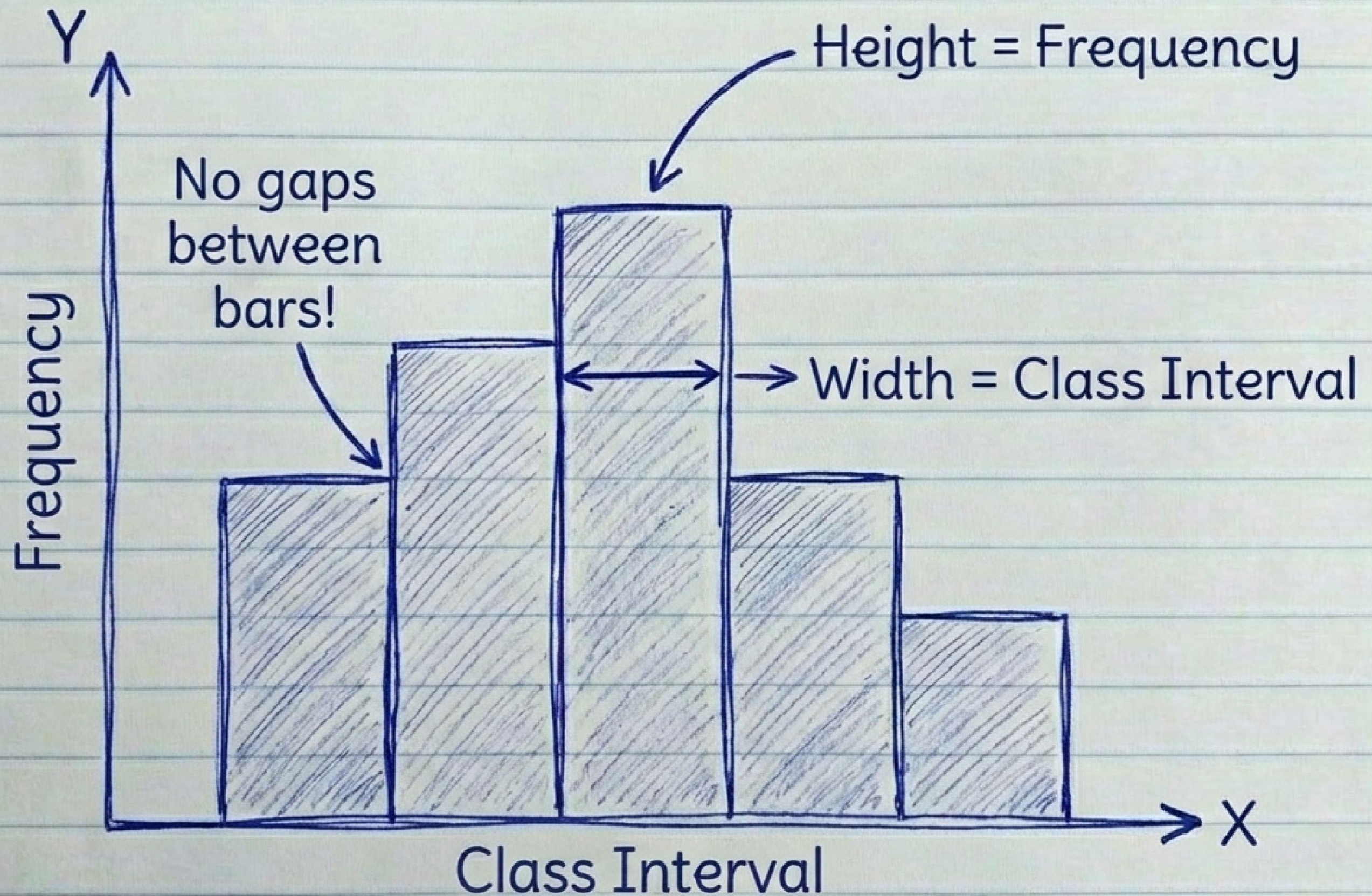
Frequency Polygon



Ogive

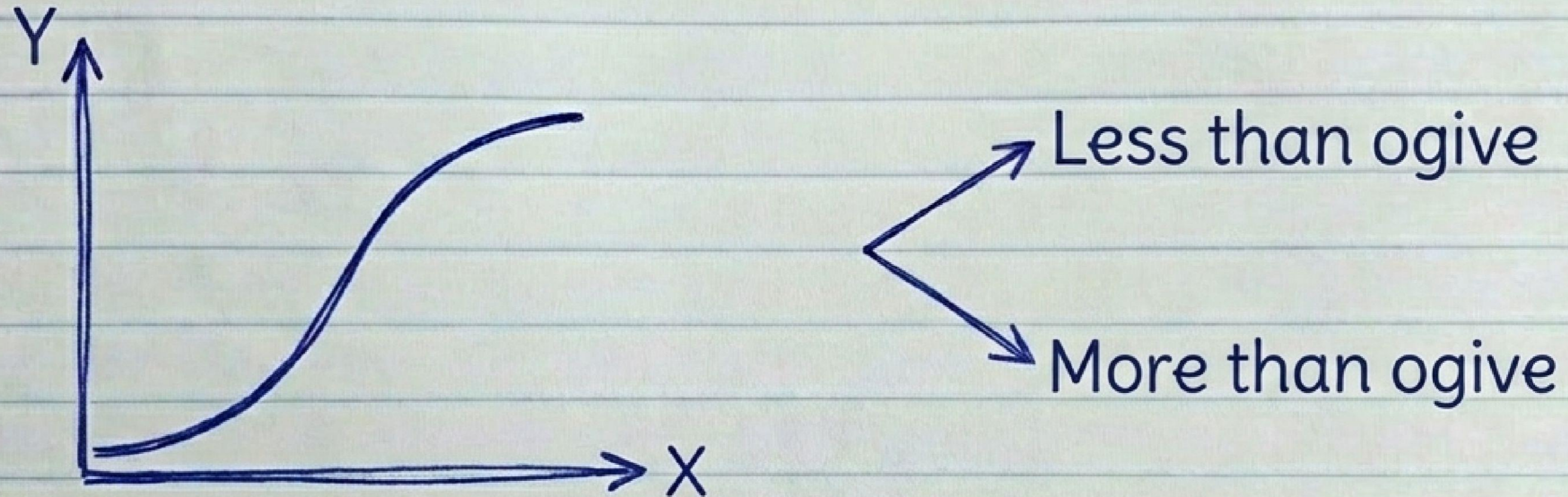


6. Deep Dive: The Histogram



7. The Ogive

Cumulative Frequency Curve.



Used to find the
Median graphically.

8. Quick Quiz (Part 1)

Q1. Statistics deals with:

- a) Numbers only
- b) Collection and analysis of data ✓
- c) Algebraic equations
- d) Geometry

Q2. Mean is calculated using:

- a) $\Sigma f / \Sigma x$
- b) $\Sigma fx / \Sigma f$ ✓
- c) $\Sigma x / \Sigma f$
- d) $\Sigma f / \Sigma fx$

8. Quick Quiz (Part 2)

Q3. Graph without gaps between bars is:

- a) Bar graph
- b) Pie chart
- c) Histogram ✓
- d) Line graph

Q4. The middle value of data is called:

- a) Mean
- b) Mode
- c) Median ✓
- d) Frequency

Formula Cheat Sheet

Class Mark

$$x = \frac{\text{Lower} + \text{Upper}}{2}$$

Mean

$$\bar{x} = \frac{\sum fx}{\sum f}$$

Key Reminders

- Histogram: No gaps
- Ogive: Finds the Median
- Raw Data: Original form

Good luck with the revision!