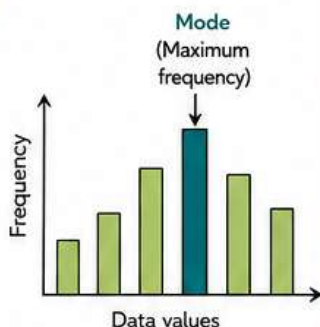


MODE



1 CHAPTER SNAPSHOT

Mode is the value that occurs **most frequently** in a data set. It represents the **maximum frequency** in the distribution.



2 HIGH-YIELD CONCEPTS

- ★ Mode shows the most **popular / most frequent** value.
- ★ A data set may have **one mode, more than one mode** (bimodal, multimodal) or no mode.
- ★ Mode is **not affected** by extreme values.
- ★ It can be found in both **ungrouped and grouped** data.

3 FORMULA BANK

Ungrouped Frequency Distribution

Mode = The value having the maximum frequency.

Example

Marks (in cm)	145	180	102	132	132
No. of students	5	6	12	25	3

Mode = 132 (highest frequency = 25)

Grouped Frequency Distribution

$$\text{Mode} = l + \left(\frac{f_1 - f_0}{2f_1 - f_0 - f_2} \right) \times h$$

where,

l = lower limit of modal class

h = class size (width of modal class)

f_1 = frequency of modal class

f_0 = frequency of class preceding modal class

f_2 = frequency of class succeeding modal class

Modal Class = Class interval with highest frequency

5 SMART REVISION TIPS

- 💡 First, find the highest frequency.
- 💡 For grouped data, identify the modal class before applying the formula.
- 💡 Write the formula clearly and substitute values carefully.
- 💡 Always check which class comes before (f_0) and after (f_2) the modal class.
- 💡 Practice with small numbers for accuracy.

6 COMMON MISTAKES

- ✗ Taking the largest value as mode (not always true).
- ✗ Choosing wrong modal class.
- ✗ Incorrectly identifying f_0 or f_2 .
- ✗ Wrong substitution in the formula.
- ✗ Calculation errors in the final step.

4 BOARD EXAM FOCUS & HOTSPOTS

Expect Questions On:

- ✓ Finding mode from a simple frequency table.
- ✓ Identifying modal class in grouped data.
- ✓ Applying the mode formula correctly.
- ✓ Calculation problems (step-by-step evaluation).

Typical Question Types:

- ◆ Find the mode of given ungrouped data.
- ◆ Find the modal class.
- ◆ Find the mode of grouped frequency distribution.

Example (Hotspot)

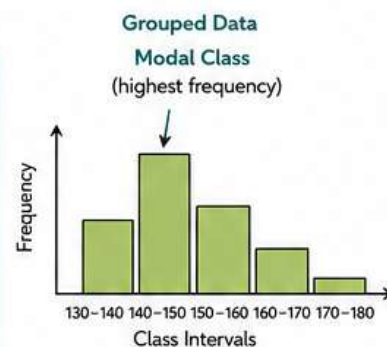
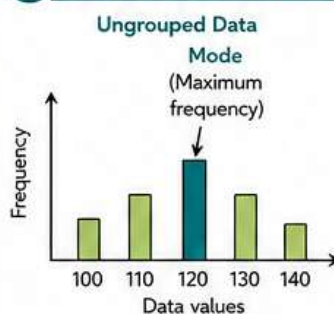
Find the mode of the following grouped data:

Class Interval	130 – 140	140 – 150	150 – 160	160 – 170	170 – 180
Frequency	5	30	14	28	1

Solution:

- ◆ Modal class = 140 – 150 (highest frequency = 30)
- ◆ Here, $l = 140$, $h = 10$, $f_1 = 30$, $f_0 = 5$, $f_2 = 14$
- ◆ $\text{Mode} = 140 + \left(\frac{30 - 5}{2(30) - 5 - 14} \right) \times 10$
 $= 140 + \left(\frac{25}{41} \right) \times 10 = 140 + 6.098 \approx 146.10$
 $\therefore \text{Mode} \approx 146.1$

7 VISUAL MEMORY AID



Mode lies at the **peak** of the distribution.

8 30-SECOND RAPID REVISION



- **Mode** = value with maximum frequency.
- **Ungrouped data:** Just pick the value with highest frequency.
- **Identify modal class** → find l , h , f_1 , f_0 , f_2 → apply formula.
- **Grouped data:** Use $l + \left(\frac{f_1 - f_0}{2f_1 - f_0 - f_2} \right) \times h$

★ **Key Takeaway:** Mode tells us what happens most often!