

Mode is the value which occurs most.

In Grouped Frequency Tables we find the **Modal Class**.

Median is the middle value, when the data is in numerical order.

In Grouped Frequency Tables we find an **estimate of the Median** using:

$$\text{Estimated median} = \frac{\text{position in class}}{\text{class frequency}} \times \text{class width} + \text{lower class boundary}$$

Mean is the sum of the data divided by the amount of data, as expressed in the following formulae.

For data given in a **list or a Frequency Table**.

$$\text{Mean} = \frac{\sum x}{n}$$

For data given in **Grouped Frequency table**

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

1. Lists of Data

Calculate the mean, median and mode:

3 5 4 6 1 3 5 7 2 5

2. Frequency Table - Table shows the number of children in a family.

Calculate the mean, median and mode.

No. of children in a family (x)	Frequency (No. of families)	f × x	Cumulative frequency
0	2		
1	5		
2	9		
3	4		
4	2		
5	1		
Total	23		

3. Grouped Frequency Table

The table shows a doctor's consultation times during one week.
Calculate the mean, median and modal class.

Consultation Time (minutes)	Frequency (f)	Mid value (x)	$f \times x$	Cumulative frequency
0 - 4	32			
5 - 9	71			
10 - 14	20			
15 - 19	14			
20 - 24	10			
25 - 29	3			
Total	150			

4. Grouped Frequency Table - Coded Mean

Use the table below to find the mean of y.

What is the relationship between the mean of y and the mean of x obtained in question 3?

Consultation Time (minutes)	Frequency (f)	Mid value (x)	$y = \frac{x-7}{5}$	$f \times y$
0 - 4	32			
5 - 9	71			
10 - 14	20			
15 - 19	14			
20 - 24	10			
25 - 29	3			
Total	150			

Answers:

1. Mean = 4.1, mode = 5, median = 4.5
2. Mean = 2.09 children, median = 2 children, mode = 2 children
3. Mean = 8.9 minutes, median = 7.56 minutes, modal class = 5-9 minutes
4. Mean of $y = 0.387$
Mean of $x = 5 \times \text{mean of } x + 7$