

Important Formulas and Concepts

1. The mean for grouped data can be found by :

a. the direct method :

$$\bar{x} = \frac{\sum f_i x_i}{\sum f_i}$$

b. the assumed mean method :

$$\bar{x} = a + \frac{\sum f_i d_i}{\sum f_i}$$

c. the step deviation method :

$$\bar{x} = a + \left(\frac{\sum f_i u_i}{\sum f_i} \right) \times h,$$

with the assumption that the frequency of a class is centred at its mid-point, called its class mark.

2. The mode for grouped data can be found by using the formula:

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

3. The cumulative frequency of a class is the frequency obtained by adding the frequencies of all the classes preceding the given class.

4. The median for grouped data is formed by using the formula:

$$\text{Median} = l + \left(\frac{\frac{n}{2} - cf}{f} \right) \times h,$$

5. Representing a cumulative frequency distribution graphically as a cumulative frequency curve, or an ogive of the less than type and of the more than type.

6. The median of grouped data can be obtained graphically as the x-coordinate of the point of intersection of the two ogives for this data.