

1. Overview of Data Interpretation (DI)

Data Interpretation is the process of reviewing data through some predefined processes which help arrive at meaningful conclusions. Common types of charts include:

- **Tables:** Tabular arrangement of data in rows and columns.
- **Bar Graphs:** Rectangular bars with lengths proportional to values.
- **Pie Charts:** Circular statistical graphics divided into slices.
- **Line Graphs:** Information displayed as a series of data points.
- **Radar/Web Charts:** Multivariate data plotted on axes.

2. Essential Formulas

Percentage Change

$$\text{Percentage Change} = \left(\frac{\text{Final Value} - \text{Initial Value}}{\text{Initial Value}} \right) \times 100$$

Percentage Point Difference

Used when comparing two percentages. If Year 1 is 45% and Year 2 is 50%, the difference is simply 5% (not 11.1%).

Growth Rate (CAGR)

$$\text{CAGR} = \left(\frac{\text{Ending Value}}{\text{Beginning Value}} \right)^{\frac{1}{n}} - 1$$

where n is the number of time periods.

3. Averages and Ratios

Weighted Average

$$\text{Weighted Avg} = \frac{\sum (w_i \cdot x_i)}{\sum w_i}$$

Ratio and Proportion

If $A : B = c : d$, then $AD = BC$. To find the share of A from a total sum S given ratio $x : y$:

$$\text{Share of } A = \frac{x}{x + y} \times S$$

4. Fast Calculation Shortcuts

- **Approximation:** Round numbers to the nearest significant digit if options are widely spaced.
- **Fractions to Percentages:** Memorize key equivalents ($1/8 = 12.5\%$, $1/6 = 16.67\%$, $1/7 = 14.28\%$, $1/9 = 11.11\%$).
- **Base Value Identification:** Always double-check whether a percentage is calculated with respect to the previous year, total production, or grand total.

5. Caselets

Caselets are paragraphs containing numerical data instead of visual graphs. **Strategy:** Translate the text immediately into a structured table, Venn diagram, or matrix before solving questions.