

Data Interpretation (DI) Master Cheat Sheet

Essential Formulas, Shortcuts, and Problem-Solving Strategies

1. Core Arithmetic Tools

Data Interpretation relies heavily on fundamental arithmetic. Master these basic formulas to speed up calculations:

- **Percentage:** $\text{Percentage} = \left(\frac{\text{Part}}{\text{Whole}}\right) \times 100$

- **Percentage Change:**

$$\% \text{ Change} = \left(\frac{\text{New Value} - \text{Old Value}}{\text{Old Value}} \right) \times 100$$

- **Percentage Point Change:** Difference between two percentage figures (e.g., $15\% - 10\% = 5\%$ points, *not* 50%).
- **Average:**

$$\text{Average} = \frac{\sum \text{Values}}{\text{Number of Values}}$$

2. Ratios and Proportions

- **Ratio Comparison:** To compare $A : B$ and $C : D$, cross-multiply or convert to decimals.
- **Growth Rate (CAGR):**

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

where n is the number of years.

3. Common DI Chart Types

- **Tables:** Row and column data. Look for totals, row/column sums, and missing values.
- **Bar Graphs:** Compare magnitudes across categories. Watch out for stacked bars where segments represent cumulative sub-totals.
- **Pie Charts:** Show proportions of a whole ($360^\circ = 100\%$, so $1\% = 3.6^\circ$).
- **Line Graphs:** Track trends over time. Pay attention to slopes for rate of change.
- **Caselets:** Paragraph-based data. Convert text systematically into a table or Venn diagram first.

4. Calculation Shortcuts

- **Fraction to Percentage Table:**

$1/2 = 50\%$	$1/6 = 16.67\%$
$1/3 = 33.33\%$	$1/7 = 14.28\%$
$1/4 = 25\%$	$1/8 = 12.5\%$
$1/5 = 20\%$	$1/9 = 11.11\%$

- **Approximation:** Round numbers to 2 or 3 significant digits when options are widely spaced.
- **Alligation Rule:** Used for finding the mean ratio when two groups are combined:

$$\frac{Q_1}{Q_2} = \frac{M_2 - M_{avg}}{M_{avg} - M_1}$$

5. Pro-Tips for Exams

- **Unit Check:** Always check whether data is given in thousands, millions, percentages, or absolute numbers before calculating.
- **Read the Questions First:** Glance at the questions before analyzing the graph to know exactly what data points to extract.
- **Elimination Strategy:** Use approximations to eliminate blatantly incorrect multiple-choice options quickly.
- **Data Sufficiency vs. DI:** Ensure you distinguish between finding a value and determining if the data provided is sufficient to answer.

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