# 1. Percentage

- **Basic Formula**: $x\% \text{ of } y = \frac{x}{100} \times y$

- **% Change**: $\frac{\text{Increase or Decrease}}{\text{Original}} \times 100$

- **Successive % Change**: $a + b + \frac{ab}{100}$

  - Ex: Increase by 20%, then decrease by 10% ⇒ $20 - 10 - (20 \times 10)/100 = 8\% \text{ net increase}$

- **Shortcut**: If options are far apart, try plugging in 100 directly to simplify.

# 2. Average

- **Average** = $\frac{\text{Sum of all values}}{\text{Number of values}}$

- **Add/Remove Element**: $\text{New total} = \text{New avg} \times n$

- For consecutive numbers: average = middle number.

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# 3. Ratio & Proportion

- **Ratio**: $a:b = \frac{a}{b}$

- **If a:b = m:n and b:c = p:q**, then $a:c = \frac{m}{n} \times \frac{p}{q}$

- **Convert ratio to actual numbers**: Multiply each ratio term by same factor.

## 4. Profit & Loss

- Profit = SP - CP; Loss = CP - SP

- $\%Profit = \frac{Profit}{CP} \times 100$, $\%Loss = \frac{Loss}{CP} \times 100$

- SP = CP $\times (1 + \frac{profit\%}{100})$

- CP = SP $\div (1 + \frac{profit\%}{100})$

## 5. Time & Work

- Work = Time × Rate; Efficiency is inverse of time.

- If A does work in x days, B in y days:

  - Together: $\frac{1}{x} + \frac{1}{y}$

- Shortcut: LCM method – assume total work = LCM of days

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# 6. Time, Speed & Distance

- $\text{Speed} = \frac{\text{Distance}}{\text{Time}}$

- Units:

  - 1 km/hr = 5/18 m/s

- 1 m/s = 18/5 km/hr

- Relative Speed:

  - Same direction: $v_1 - v_2$

  - Opposite direction: $v_1 + v_2$

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# 7. Simple & Compound Interest

- SI = $\frac{P \times R \times T}{100}$

- CI = $P (1 + \frac{R}{100})^T$

- For 2 years CI: CI=P(R100+(R100)2)CI = P \left( \frac{R}{100} + \left(\frac{R}{100}\right)^2 \right)

- Difference between CI & SI (2 years): P×R21002\frac{P \times R^2}{100^2}

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# 8. Probability & Permutation

- Probability = Favorable outcomesTotal outcomes\frac{\text{Favorable outcomes}}{\text{Total outcomes}}

- nPr = n!(n−r)!\frac{n!}{(n - r)!}

- nCr = n!r!(n−r)!\frac{n!}{r!(n - r)!}

- If order doesn't matter ⬚ Use nCr

# 9. Statistics

- Mean = Average

- Median = Middle value (sorted data)

- Mode = Most frequent value

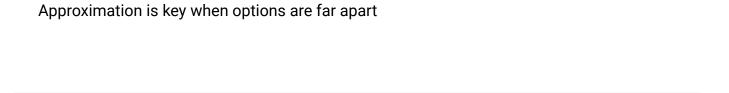- For grouped data: Use assumed mean method for quick calculation

# 10. Data Interpretation

- Understand chart/table before solving

- Estimate values if options are distant

- For pie charts: each 1% = $\frac{360}{100} = 3.6^\circ$

- Percentage change questions common in DI

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**⚡ Speed Tips:**

- Eliminate options that are too high/low

- Plug options back into question

- Memorize basic squares, cubes, % to fraction conversions (like 12.5% = 1/8)

-

Approximation is key when options are far apart

# 1. Blood Relations

- Use **family tree method**.

- Replace names with symbols:

  - Male: Square; Female: Circle

  - Horizontal: Same generation

- Vertical: Parent-child

- Common terms:

  - Maternal = Mother's side

  - Paternal = Father's side

**Quick Tip**: Work backward from the question.

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## 2. Direction Sense

- Keep a compass sketch (N, S, E, W).

- Turn Left ⬜ Anti-clockwise; Right ⬜ Clockwise

- Watch for: net displacement vs total distance

**Example**: Starts facing East ⬜ Left turn = North

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## 3. Seating Arrangement

- **Linear**: Left-right based on orientation

  - Facing North ⬜ Left is left

  - Facing South ⬜ Left is right

- **Circular**:

  - Facing center ⬚ Left is clockwise

  - Facing outward ⬚ Left is anti-clockwise

**Trick**: Fix one person and work around.

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# 4. Syllogism

- Use **Venn Diagrams**:

  - All A are B ⬚ A inside B

Some A are B ▯ Overlap

- No A is B ▯ Separate circles

**Keywords to decode**:

- All, Some, None, Can't Say

---

# 5. Coding-Decoding

- Check position of letters (A=1, B=2…)

- Find patterns:

  -

Reverse order?

- +1 or -1 shift?

- For symbol/number codes, match known words.

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# 6. Number Series

- Look for:

  - Addition/Subtraction

  - Multiplication/Division

  -

Square, Cube, Prime patterns

**Tip**: Check difference between terms first.

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# 7. Alphabet Series

- Know positions (A=1 to Z=26)

- Watch for:

  - Alternate letters

  - +2, -3 jumps

**Trick**: Write sequence on paper to visualize.

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# 8. Data Sufficiency

- Two statements given:

  - Use one alone?

  - Combine both?

- Answer format:

  - A: Only 1 alone

  - B: Only 2 alone

- C: Both needed

- D: Either alone

- E: Neither works

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# 9. Decision Making

- Judge based on rules/conditions

- Eliminate options violating any rule

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# 10. Figure & Factual Analysis
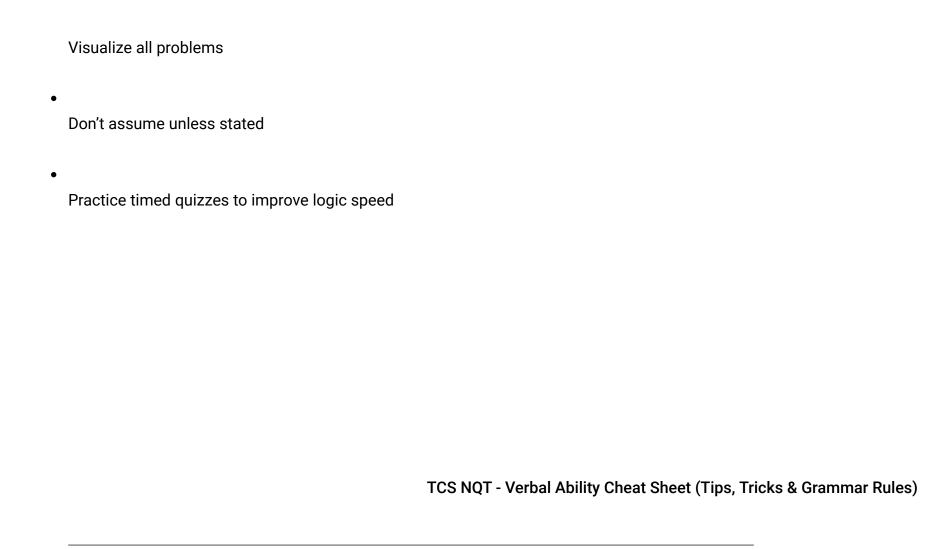
- Observe changes in:

  - Shape, Size, Position

- Look for mirror images, rotations

**Pattern Tip**: Count edges, lines, or shaded parts

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 **Speed Strategy:**

- Use table/chart for relations

-

Visualize all problems

- 

Don't assume unless stated

- 

Practice timed quizzes to improve logic speed

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# 1. Sentence Rearrangement (Para Jumbles)

-

Look for:

- **Opening sentence**: Usually introduces subject.

- **Pronouns**: Sentences with "he", "it", etc. refer to earlier nouns.

- **Link words**: "However", "Moreover", etc. indicate flow.

- **Tip**: Find pairs of sentences that logically connect.

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## 2. Reading Comprehension (RC)

- **Skim First**: Read the first & last lines of para for the main idea.

-

**Then read Qs**, return to passage for answers.

- Watch for synonyms – questions may paraphrase the passage.

- Eliminate extreme or unrelated options first.

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# 3. Error Detection / Spotting Errors

- Check one part at a time. Common error areas:

  - Subject-Verb Agreement

  - Tense consistency

  - Preposition misuse

- Article misuse (a, an, the)

- **Trick**: Read aloud in your head to sense grammatical errors.

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# 4. Sentence Completion

- Understand the tone: Positive, negative, contrast?

- Look for linking clues: "but", "because", "although", etc.

- Eliminate irrelevant or grammatically incorrect options.

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# 5. Tenses

- **Present**: I eat, He eats ⬚ habit/general truth

- **Past**: I ate ⬚ completed action

- **Future**: I will eat ⬚ upcoming action

- **Perfect**: I have eaten ⬚ action done

- Common mistakes:

  - Using past when present is needed

  - Mixing tenses in one sentence

# 6. Prepositions

- Common phrases:

  - Depend **on**, similar **to**, prefer **to**, listen **to**

- Use "in" for months/years, "on" for days, "at" for time

# 7. Subject-Verb Agreement

- **Singular subject = singular verb**: The boy **is** playing.

-

**Plural subject = plural verb**: The boys **are** playing.

- 

Be careful with words like: everyone, nobody ⬚ singular

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# 8. Articles

- 

**a/an** for general things (a book, an apple)

- 

**the** for specific items (the sun, the book on the table)

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# 9. Vocabulary Tips

- 

Learn common root words:

- "bene" (good): benefit, benevolent

- "mal" (bad): malfunction, malice

- Prefixes/suffixes help guess meaning.

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# 10. Common Confusing Words

- Affect (verb) vs Effect (noun)

- Accept (receive) vs Except (excluding)

- Its (belonging to it) vs It's (it is)

**⬚ Speed Tips:**

- Read questions before RC passage.

- Eliminate options smartly (grammatical or logical mismatch).

- Memorize high-frequency words.

- Practice with mock tests for grammar spotting.