

Simplification Study Notes with Memory Based Questions

Embark on a journey to streamline your **SBI Clerk exam** preparation with **Simplification** Study Notes enriched with Memory-Based Questions, meticulously crafted by Chanakya's Coaching Centre Chandigarh. Navigating through mathematical complexities becomes seamless as our study materials provide a comprehensive understanding of simplification techniques crucial for the SBI Clerk exam. Chanakya's Coaching Centre Chandigarh commitment to excellence shines through these notes, ensuring a strategic approach to mastering mathematical concepts.

Tailored for efficiency, our study resources equip aspirants with the skills needed to tackle the intricacies of simplification, enhancing problem-solving capabilities. Elevate your preparation with Chanakya's Coaching Centre Chandigarh Simplification Study Notes, a vital tool for success in the SBI Clerk exam, and embrace a confident stride towards achieving your career goals.

Before starting the theory part, let's understand what kind of questions are asked in Previous Year Papers.

Simplification Questions asked in SBI Clerk Exam

E.g. $88.88\% \text{ of } 243 + 75\% \text{ of } 80 + 14.28\% \text{ of } 56 = ?$ [SBI Clerk 2022]

Sol. $88.88\% \text{ of } 243 + 75\% \text{ of } 80 + 14.28\% \text{ of } 56 = ?$

Applying the BODMAS rule

$$\Rightarrow 8 \times 11.11\% \times 243 + 75\% \times 80 + 14.28\% \times 56 = ?$$

$$\Rightarrow 8 \times (1/9) \times 243 + (3/4) \times 80 + (1/7) \times 56 = ?$$

$$\Rightarrow 8 \times 27 + 3 \times 20 + 8 = ?$$

$$\Rightarrow 216 + 60 + 8 = ?$$

$$\Rightarrow ? = 284$$

E.g. $(17.28 \div 0.12) \div 3.6 \times 0.2 = ?$ [SBI Clerk 2021]

Sol. $(17.28 \div 0.12) \div 3.6 \times 0.2 = ?$

Applying the BODMAS rule

$$\Rightarrow (144) \div 3.6 \times 0.2 = ?$$

$$\Rightarrow 40 \times 0.2 = ?$$

$$\Rightarrow ? = 8$$

E.g. $40\% \text{ of } 475 + 190\% \text{ of } 600 + 1 = ?^3$ [SBI Clerk 2020]

Sol. $40\% \text{ of } 475 + 190\% \text{ of } 600 + 1 = ?^3$

Applying the BODMAS rule

$$\Rightarrow (2/5) \times 475 + (19/10) \times 600 + 1 = ?^3$$

$$\Rightarrow 2 \times 95 + 19 \times 60 + 1 = ?^3$$

$$\Rightarrow 190 + 1140 + 1 = ?^3$$

$$\Rightarrow ?^3 = 1331$$

$$\Rightarrow ? = 11 \text{ (Ans.)}$$

So, these type of questions are asked in the Exam. So, we will focus on this topic and try to cover all the important aspects of this topic.

Simplification Concept Understanding

Here, we are going to learn all about the BODMAS rule, what it is, where to use it along with some mind-blowing formulae which will transform you into human calculator.

E.g. $76 + 7^2 \times 442 \div 26 = ?$

We are completely clueless about where to start right now, so let's start from right

$$\Rightarrow 76 + 49 \times 442 \div 26 = ?$$

$$\Rightarrow 125 \times 442 \div 26 = ?$$

$$\Rightarrow 55250 \div 26 = ?$$

$$\Rightarrow ? = 2125$$

Which is wrong, so how to approach these types of questions? Is there a specific method to approach them?

Yes, BODMAS rule.

BODMAS Rule:

Full form of BODMAS is

B - Bracket, O - Of, D - Divide, M - Multiply, A - Addition, S - Substraction

For every question we have to do each step from up to bottom. Let's now take previous example and try to solve it.

$$76 + 7^2 \times 442 \div 26 = ?$$

$$\Rightarrow 76 + 49 \times 442 \div 26 = ?$$

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Divide:

$$\Rightarrow 76 + 49 \times 17 = ?$$

Multiply:

$$\Rightarrow 76 + 833 = ?$$

Add:

$$\Rightarrow ? = 909 \text{ (Ans.)}$$

Let's take some examples to understand this better.

E.g. $27 - [16^2 - (273 + 281) \div 2] = ?$

Sol. Using the BODMAS rule:

$$\Rightarrow 27 - [256 - 554/2] = ?$$

$$\Rightarrow 27 - 256 + 277 = ?$$

$$\Rightarrow ? = 48 \text{ (Ans.)}$$



E.g. $4.5 + 23.50 + 14.58 - 17.68 \times 0.5 = ?$

Sol. Using the BODMAS rule:

$$\Rightarrow 4.5 + 23.50 + 14.58 - 8.84 = ?$$

$$\Rightarrow 42.58 - 8.84 = ?$$

$$\Rightarrow ? = 33.74 \text{ (Ans.)}$$

E.g. $14 \times 627 \div \sqrt{1089} = (?)^3 + 141$

Sol. $14 \times 627 \div \sqrt{1089} = (?)^3 + 141$

Using the BODMAS rule:

$$\Rightarrow 14 \times 627 \div 33 = (?)^3 + 141$$

$$\Rightarrow 14 \times 19 = (?)^3 + 141$$

$$\Rightarrow 266 = (?)^3 + 141$$

$$\Rightarrow 125 = (?)^3$$

$$\Rightarrow ? = 5 \text{ (Ans.)}$$

Now, let's understand tips to solve Simplification Questions in Exam.

Tips to Solve Simplification Questions

Here are some tips to help you solve simplification questions:

General Tips:

- **Read the question carefully:** Make sure you understand what the question is asking for before you start solving.
- **Identify the order of operations:** Remember BODMAS (which we have discussed above).
- **Simplify terms one at a time:** Don't try to simplify everything at once. Break down the problem into smaller parts and simplify each part one at a time.
- **Look for patterns:** See if you can identify any patterns in the problem that can help you simplify it.
- **Use estimation:** If you're stuck, try estimating the answer. This can give you a good starting point and help you check your work.

Specific Tips:

- **Fractions:** Simplify fractions by finding the greatest common factor (GCD) of the numerator and denominator.
- **Decimals:** Use a place value chart to help you line up the decimals correctly.
- **Percentages:** Remember that a percentage is a fraction out of 100.
- **Powers and exponents:** Use the rules of exponents to simplify expressions with powers.
- **Negative numbers:** Be careful when working with negative numbers. Remember that two negatives make a positive.
- **Brackets:** Simplify expressions inside brackets before you simplify the rest of the expression.

(We will discuss all these specific tips in detail in our next study blog)

Practice:

The best way to improve your skills at solving simplification questions is to practice. There are many resources available online and in textbooks that can help you practice.

Directions (Q. 1 - 50): What value should come in the place of question mark (?) in the following questions?

- 1) $124\% \text{ of } 3250 + (3/8) \text{ of } 5712 = (?)^2 + 243$
a) 83 b) 73 c) 77 d) 87 e) None of these
- 2) $? \% \text{ of } 600 = 3285 - (442 - 192) \times 19 \div 399$
a) 535 b) 610 c) 475 d) 650 e) None of these
- 3) $72 \times 6 \times (125 - 97) + 1254 \div 3 \div 11 - 662 = ?$

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a) 6152 b) 6524 c) 7196 d) 7778 e) None of these

4) $\sqrt[3]{13824} + \sqrt[3]{74088}$ % of 250 - $\sqrt[3]{3375}$ % of 600 = ?

a) 15 b) 9 c) 21 d) 18 e) None of these

5) $(5/17)$ of $(408/55)$ of $(165/240)$ of 6000 = 25 % of ?

a) 36000 b) 32000 c) 45000 d) 41000 e) None of these

6) $\sqrt{[(1573 \div 13) \times (275 \div 55) + 53 - 1]} = 1672 \div 11 - ? \times 3$

a) 8 b) 6 c) 5 d) 7 e) None of these

7) $8 \frac{4}{7} + 9 \frac{3}{4} - 3 \frac{5}{8} - ? = 6 \frac{29}{56}$

a) $8 \frac{5}{28}$ b) $6 \frac{13}{25}$ c) $7 \frac{19}{28}$ d) $5 \frac{3}{4}$ e) None of these

8) $(422 - 182) \times 24 \div 128 + ?$ % of 1800 = 1080

a) 60 b) 75 c) 45 d) 50 e) None of these

9) $(7 \times 7)^4 \div (343 \div 7)^2 \times (343 \times 7)^3 = (7)^? + 5$

a) 11 b) 9 c) 13 d) 7 e) None of these

10) 114 % of 1250 + $(4/7)$ of 5712 = $(?)^2 + 65$

a) 84 b) 96 c) 72 d) 68 e) None of these

By following these tips and practicing regularly, you'll be able to solve simplification questions with confidence. We will discuss this simplification topic in detail in our next study note with some more examples and some other small topics in simplification like **Surds and Indices**. Till then, stay tuned!

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