Welcome to your gateway for mastering Simplification for Bank Exams. In the realm of competitive banking exams such as SBI PO, IBPS Clerk, and RBI Grade B, a strong command of simplification is your key to success. This introductory resource provides a solid foundation for understanding and acing simplification techniques. Whether you're new to the world of banking exams or seeking to refine your skills, this guide will break down the basics, imparting the knowledge and confidence needed to tackle numerical challenges with precision.

Dive into the art of simplifying complex calculations, and elevate your readiness for these critical examinations. As we embark on this journey, rest assured that simplification is the cornerstone of efficient problem-solving, and your grasp of these fundamentals will be instrumental in securing your path to a flourishing banking career.

Simplification for Bank Exams

Simplification is a crucial skill for bank exams as it allows you to solve quantitative aptitude (QA) problems quickly and accurately. So, here are 10 basic tips for simplification in bank exams you need to know before starting the topic:

1. **Master the order of operations (PEMDAS):** PEMDAS stands for Parentheses, Exponents, Multiplication and Division (from left to right), and Addition and Subtraction (from left to right). Always follow this order when simplifying expressions.

2. **Combine like terms:** Like terms are terms that have the same variables raised to the same powers. Combine like terms by adding or subtracting their coefficients.

3. **Simplify fractions:** Simplify fractions by finding the greatest common factor (GCD) of the numerator and denominator and dividing both by the GCD.

4. **Simplify radicals:** Simplify radicals by factoring the radicand (the expression under the radical symbol) and finding the perfect square factors.

5. **Simplify expressions with exponents:** Use the rules of exponents to simplify expressions with exponents. For example, $a^m \times a^n = a^{(m+n)}$ and $(a^m)^n = a^{(m \times n)}$.

6. **Simplify expressions with variables:** Use algebraic techniques such as factoring, expanding, and combining like terms to simplify expressions with variables.

7. **Practice with previous year's question papers:** Solve simplification questions from previous year's bank exam papers to familiarize yourself with the types of questions asked and the level of difficulty.

8. **Memorize common simplification shortcuts:** There are some common simplification shortcuts that can save you time in the exam. For example, you can memorize the squares of the first 15 natural numbers and the cubes of the first 10 natural numbers.

9. **Avoid making careless mistakes:** Simplification questions often involve multiple steps, so it's important to be careful and avoid making careless mistakes. Double-check your work before moving on to the next question.

10. **Manage your time effectively:** Simplification questions can be time-consuming, so it's important to manage your time effectively. Don't spend too much time on any one question, and move on if you're stuck.

By following these tips and practicing regularly, you can improve your simplification skills and increase your chances of success in bank exams.
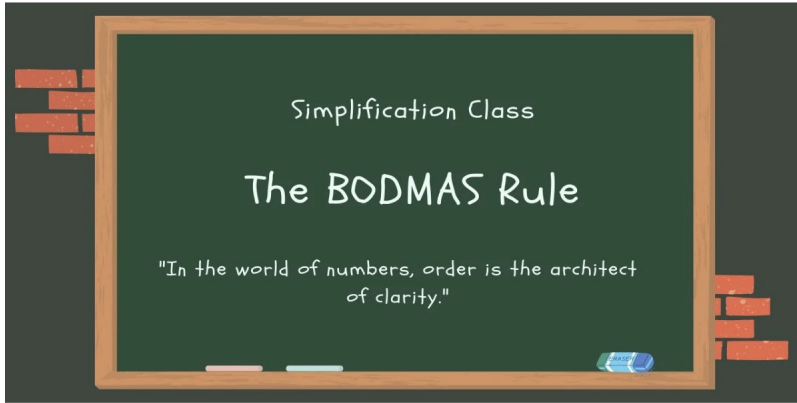
Here, we are going to learn all about the BODMAS rule, what it is, where to use it along with some mind-blowing formulae which will transfer you in a human calculator. But before that, let's look at this example.

E.g. $221 \div 13 \times \sqrt{576} + (10)^2 = ?$

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

$\Rightarrow 221 \div 13 \times 24 + 100 = ?$

$\Rightarrow 221 \div 13 \times 124 = ?$

$\Rightarrow 221 \div 1612 = ? \Rightarrow 7.290$ (Approx.)

Which is wrong, so how to approach these types of questions?

Is there a specific method to approach them?
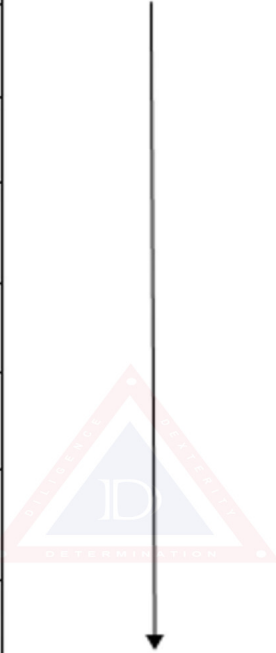
Yes, VBODMAS rule.

VBODMAS Rule

In the world of mathematics, order and structure are paramount to solving complex equations and simplifying expressions. The acronym VBODMAS, also known as PEMDAS or BODMAS, serves as a guide to navigate the hierarchy of operations within mathematical expressions. This rule dictates the sequence in which operations should be performed to ensure accurate and consistent results.

VBODMAS stands for Vinculum (or Brackets), Of, Division, Multiplication, Addition, and Subtraction. It emphasizes the order in which these operations should be executed when evaluating an expression. Vinculum, or brackets, take precedence, followed by Of (which includes exponents and roots), then Division and Multiplication from left to right, and finally, Addition and Subtraction from left to right.

So, as discussed, the full form of VBODMAS is:

Sr.no.	Alphabet	Significance
1.	V	Vinculum or Bar
2.	B	Brackets
3.	O	Of
4.	D	Division
5.	M	Multiplication
6.	A	Addition
7.	S	Subtraction

For every question we have to do each step from up to bottom.

Understanding and applying the VBODMAS rule is crucial for simplifying expressions, solving equations, and obtaining accurate solutions in various mathematical contexts. It ensures consistency and eliminates ambiguity, allowing mathematicians and students alike to navigate complex expressions with clarity and precision.

Let's take an example and try to solve it.

E.g. $221 \div 13 \times \sqrt{576} + (10)^2 = ?$

Step 1: First try to **Solve** $\sqrt{576}$ and $(10)^2$

$\Rightarrow 221 \div 13 \times 24 + 100 = ?$

Step 2: Division

$\Rightarrow 221 \div 13 \times 24 + 100 = ?$

$\Rightarrow 17 \times 24 + 100 = ?$

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Step 3: Multiplication

⇒ 17 × 24 + 100 = ?

⇒ 408 + 100 = ?

Step 4: Addition

⇒ 408 + 100 = ?

⇒ ? = 508 (Ans).

Tip: While solving brackets first open small () then curly {} and last big brackets []

E.g. $[(2211 ÷ 67)^2 − 21 × √(256)] ÷ (549 − 213) = ? ÷ 1344$

Sol: Let's apply VBODMAS rule here

Step 1: Let's Solve √256

⇒ $[(2211 ÷ 67)^2 - 21 × 16] ÷ (549 - 213) = ? ÷ 1344$

Step 2: Start opening the Brackets

⇒ $[(2211 ÷ 67)^2 - 21 × 16] ÷ (549 − 213) = ? ÷ 1344$

⇒ $[(33)^2 − 21 × 16] ÷ 336 = ? ÷ 1344$

Step 3: Now we have to first simplify equation in bracket then open it by VBODMAS

⇒ [1089 − 21 × 16] ÷ 336 = ? ÷ 1344

⇒ [1089 − 336] ÷ 336 = ? ÷ 1344

Step 4: Now open the bracket

⇒ [1089 − 336] ÷ 336 = ? ÷ 1344

⇒ 753 ÷ 336 = ? ÷ 1344

Step 5: Division

⇒ 753 ÷ 336 = ? ÷ 1344

⇒ 753 × 1344 ÷ 336 = ?

⇒ ? = 753 × 4 = 3012 (Ans).

Let's take few more examples.

E.g. 1/6 of 355 of 1/5 of 2160 + √3969 - 448.98 = ?

Step 1: first solve **Vinculum**

1/5 of 2160 ⇒ 1/5 × 2160 ⇒ 432

And 1/6 of 355 ⇒ 355/6

So, we got,

⇒ 355/6 of 432 + 37 − 448.98

Step 2: Solve **Of**

⇒ 355/6 of 432 + 37 − 448.98

⇒ 355/6 × 432 + 37 − 448.98

Step 3: Division

⇒ 355 × 72 + 37 − 448.98

Step 4: Multiplication

⇒ 355 × 72 + 37 − 448.98

⇒ 25560 + 37 − 448.98

Step 5: Addition

⇒ 25560 + 37 − 448.98

⇒ 25597 − 448.98

Step 6: Subtraction

⇒ 25597 − 448.98

⇒ 25,148.02 (Ans).

E.g. 28/9 × 144/12 ÷ 17/5 + 13/17

Step 1: By BODMAS rule we would firstly (D) **Divide**

⇒ 28/9 × 12 ÷ 17/5 + 13/17

⇒ 28/9 × 60/17 + 13/17

Step 2: Multiplication

⇒ 28/9 × 60/17 + 13/17

⇒ 560/51 + 13/17

Step 3: Addition

⇒ (560 + 39)/51

⇒ 599/51 (Ans).

As we saw by using this concept it would lead to the correct answer however the question is how tedious.

In conclusion, simplification techniques play a pivotal role in conquering quantitative aptitude sections of bank exams. By mastering the art of simplification, one can efficiently solve numerical problems with accuracy and speed.

Regular practice with simplification problems, along with memorizing common shortcuts and avoiding careless mistakes, will enhance one's ability to tackle these questions confidently. Effective time management and a thorough understanding of the VBODMAS rule are key to achieving success in simplification-based questions.

The ability to simplify complex expressions into their most concise forms not only demonstrates mathematical proficiency but also reflects a sharp analytical mind, a crucial trait for aspiring bankers.

So this is all for today In our next blog, we will discuss the short cut method to find the percentage, the questions on surds and indices and one of most important topics for Bank exam i.e. Questions on Approximation. So, till then, Stay tuned!