

Simplification

1. *'BODMAS' Rule:*

This rule depicts the correct sequence in which the operations are to be executed, so as to find out the value of given expression.

Here B - Bracket,
O - of,
D - Division,
M - Multiplication,
A - Addition and
S - Subtraction

Thus, in simplifying an expression, first of all the brackets must be removed, strictly in the order $()$, $\{ \}$ and $||$.

After removing the brackets, we must use the following operations strictly in the order:

(i) of (ii) Division (iii) Multiplication (iv) Addition (v) Subtraction.

2. *Modulus of a Real Number:*

Modulus of a real number a is defined as

$$|a| = \begin{cases} a, & \text{if } a > 0 \\ -a, & \text{if } a < 0 \end{cases}$$

Thus, $|5| = 5$ and $|-5| = -(-5) = 5$.

3. *Virnaculum (or Bar):*

When an expression contains Virnaculum, before applying the 'BODMAS' rule, we simplify the expression under the Virnaculum.

1.