

Simplification – Short Notes (Quick Revision)

■ Simplification – Quick Rules & Key Points

1■■■ BODMAS / PEMDAS Order:

- Brackets → Of (×) → Division → Multiplication → Addition → Subtraction
- For ÷ and ×, go LEFT to RIGHT.

2■■■ “of” always means MULTIPLICATION.

3■■■ Common Traps:

- Misprinted questions may change order (as seen in SSC 2019).
- Always check placement of “of” and brackets carefully.

4■■■ SSC CGL 2019 Famous Question:

$$5 \div 5 \text{ of } 5 \times 2 + 2 \div 2 \text{ of } 5 - (5 - 2) \div 6 \times 2$$

Correct interpretation:

$$\begin{aligned} &= 5 \div (5 \times 5) \times 2 + 2 \div (2 \times 5) - (5 - 2) \div 6 \times 2 \\ &= 2/5 + 1/5 - 1 = -2/5 \blacksquare \end{aligned}$$

(Official key misprinted → gave 19/10 due to misplaced “of”)

5■■■ Mixed Fraction Rule:

Convert improper fractions → divide numerator by denominator.

Example: $22/5 = 4 \frac{2}{5}$.

6■■■ Shortcut Tips:

- “of” before “÷” → multiply first.
- “÷” and “×” same rank → left to right.
- Avoid mental jumps — write stepwise.
- Simplify brackets first always.

7■■■ Key conversions:

- $1.\overline{6} = 1.666... = 1 + 2/3 = 5/3$
- To change recurring decimals: denominator = 9s for repeating digits.

■ Always check for misprints and use logical grouping (parentheses).