# Percentage Short tricks

**Technique 1**

When a number x is increased or decreased by y%, then the new number will be

$\frac{100 \pm y}{100} \times x$

**Technique 2**

- If x is a% more than y ,then y is $(\frac{a}{100} \times 100)$ % less than x .
- If x is a% less than y ,then y is $(\frac{a}{100-a} \times 100)$ % more than x .

**Technique 3**

If the value of a number is first increased by a% and later decreased by a%, then the net effect is always a decrease which is equal to a% of a $(\frac{a \times a}{100})$ %

**Technique 4**

When the value of an object is first changed (increased or decreased) by a% and then changed (increased or decreased) by b%, then

Net effect =$(\pm a \pm b + \frac{\pm a \times \pm b}{100})$ %

**Technique 5**

If the price of a commodity increases or decreases by a%, then the decrease or increase in consumption, so as not to increase or decrease the expenditure is equal to $(\frac{a}{100 \pm a} \times 100)$ %

## Technique 6

A candidate scores x% marks in an examination and fails by a marks, while an another candidate who scores y% marks, gets b marks more than the minimum required passing marks. The maximum marks for the examination is given as

M = $\frac{Sum\ of\ Scores}{Difference\ in\ \%} \times 100$

**Technique 7**

Suppose in an examination, x% of total number of students failed in subject A and y% of total number of students failed in subject B and z% failed in both the subjects.

Then, (i) Percentage of students who passed in both the subjects = [100 - (x + y - z)] %

(ii) Percentage of students who failed in either subject = (x + y -z)%

**Technique 8**

If the population of a town is P and it increases (or decreases) at the rate of R% per annum, then

- Population after n yrs = $P\{1 \pm \frac{R}{100}\}^n$
- Population n yrs ago = $\frac{P}{\{1 \pm \frac{R}{100}\}}$ n