Chapter 8 : Company Quantities

1) Ratio is the mean of company quantities.

2) The ratio a is to b = fraction $\frac{a}{b}$ = written as $a:b$

3) Equivalent ratio : To compare different ratios convert fractions into like fractions. If like fractions are equal, then the given ratios are said to be equivalent.
e.g. Compare 1:2 and 2:3

$$\frac{1}{2} = \frac{1\times3}{2\times3} = \frac{3}{6}, \quad \frac{2}{3} = \frac{2\times2}{3\times2} = \frac{4}{6}$$

We find $\frac{3}{6} < \frac{4}{6} \therefore \frac{1}{2} < \frac{2}{3}$

$\therefore$ 1:2 is not equivalent to ratio 2:3.

4) Ratio of simplest form : The ratio $(a:b)$ is said to be in simplest form, if HCF of a and b is 1. i.e. no common factor between "a" and "b" other than 1.
It is also called lowest term.

5) Proportion : Four quantities a, b, c and d are said to be in proportion, if $a:b = c:d$ i.e. $\frac{a}{b} = \frac{c}{d}$

6) Unitary method : Value of unit (one) quantity is obtained first.
e.g. Cost of 6 books = Rs. 90
Cost of 1 books = $\frac{90}{6}$ = Rs. 15

Cost of 10 books = Rs. 15 × 10
= Rs 150

8) Percentage mean per 100. (Out of 100)

$1\% = \frac{1}{100} = 0.01 \quad 14\% = \frac{14}{100} = 0.14$ etc.

9) To convert a fraction $(\frac{a}{b})$ into percent, multiply the fraction by 100 and write % sign.

$\frac{1}{3} = \frac{1}{3} \times 100\% = \frac{100}{3}\% = 33\frac{1}{3}\%$

$\therefore \frac{1}{3} = 33\frac{1}{3}\%$

$\frac{4}{5} = \frac{4}{5} \times 100\% = \frac{400}{5}\% = 80\%$

10) To convert decimals into percent, shift the decimal point two (2) places to the right side and write % sign.

$0.75 = 0.75 \times 100\% = 75\%$

$0.09 = 0.09 \times 100\% = 9\%$

$0.2 = 0.2 \times 100\% = 20\%$

11) Converting percentage (%) to fraction or decimal.

$75\% = \frac{75}{100} = 0.75$

$9\% = \frac{9}{100} = 0.09$

$20\% = \frac{20}{100} = 0.2$

12) Converting percentages to "How many".

25% of $40 = \frac{25}{100} \times 40 = 10$

'of' means $\times$ (multiplication)

25% of $P = 20 \Rightarrow \frac{25}{100} \times P = 20 \Rightarrow P = \frac{20 \times 100}{25} = 80.$

13) Ratio to Percent (%) : Given ratio 2:1 (Rice : Dal)

$2+1 = 3$ (Total parts) $\frac{2}{3}$ is Rice part, $\frac{1}{3}$ is Dal part.

$\frac{2}{3} \times 100\% = \frac{200}{3}\% = 66\frac{2}{3}\%$

$\frac{1}{3} \times 100\% = \frac{100}{3}\% = 33\frac{1}{3}\%$

14) Increase or decrease as percent

$$\% \text{ increase or decrease} = \frac{\text{change in amount}}{\text{Original or base amount}} \times 100$$

e.g.

School team won 4 games last year and 6 games this year.

$$\% \text{ increase} = \frac{6-4}{4} \times 100\% = \frac{2}{4} \times 100\% = 50\%$$

15) S.P. - Selling Price C.P. - Cost price

When S.P. > C.P then Profit = S.P. - C.P

$$\text{Profit\%} = \frac{\text{S.P.} - \text{C.P.}}{\text{C.P.}} \times 100$$

When S.P. < C.P. then Loss = C.P. - S.P

$$\text{Loss\%} = \frac{\text{C.P.} - \text{S.P.}}{\text{C.P.}} \times 100$$

16) Simple Interest (S.I.) = $\frac{P \times R \times T}{100}$ P - Principal
R - Rate of Interest
T - Time (years)

Amount = Principal + S.I.