BYJU'S EXAM PREP

Study notes on Percentage

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Percentage means 'for every 100' or 'out of 100'.

Note:
1. Whenever you want to change any fraction into percentage, then multiply it by 100.
2. Whenever you want to change any percentage to the fraction, divide it by 00.
3. Important fractions to percent values to remember:

a. 1 = 100 %

b. 1/2 = 50 %

c. $1/3 = 33\frac{1}{3}\%$

d. 1/4 = 25 %

e. 1/5 = 20 %

f. $1/6 = 16\frac{2}{3}\%$

g. $1/7 = 14\frac{2}{7}\%$

h. $1/8 = 12\frac{1}{2}\%$

i. $1/9 = 11\frac{1}{9}\%$

j. 1/10 = 10 %

k. $1/11 = 9\frac{1}{11}\%$

l. $1/12 = 8\frac{1}{3}\%$

m. $1/13 = 7\frac{9}{13}\%$

n. $1/14 = 7\frac{1}{7}\%$

o. $1/15 = 6\frac{2}{3}\%$

p. $1/16 = 6\frac{1}{4}\%$

q. $3/8 = 37\frac{1}{2}\%$

r. $5/8 = 62\frac{1}{2}\%$

s. $4/7 = 57\frac{1}{7}\%$

Basic Rules:

- More percentage $= \frac{\text{difference}}{\text{less value}}$ X 100
- Less percentage $= \frac{\text{difference}}{\text{more value}}$ X 100
- If a number "x" increased or decreased to "y", then

$$\text{More percentage} = \text{less percentage} = \frac{\text{difference}}{\text{initial value}} \text{ X } 100$$

- Successive = $a + b + \frac{a\,X\,b}{100}$

Important rules:

1. If a number is increased by x%, then that number will be (100 + x) % of the previous value.
2. If a number is decreased by x%, then More percentage=difference/(less value) X 100
Less percentage=difference/(more value) X 100
If a number "x" increased or decreased to "y", then
More percentage=less percentage= difference/(initial value) X 100

Successive = a+b+(a X b)/100
that number will be (100 - x) % of the previous value.

3. If 'x' is a% more than 'y', then 'y' is less than 'x' by $\left(\frac{a}{100+a}\right)$ x 100%
4. If 'x' is a% less than 'y', then 'y' is more than 'x' by $\left(\frac{a}{100+a}\right)$ x 100%
5. If the value of an object is first changed by (increased or decreased) by a%, and then changed (increased or decreased) by b% then, Net effect = $a \pm b \pm \frac{ab}{100}$

Note: Net effect increased or decreased according to the +ve or -ve sign respectively.

6. If the price of an item increases or decreases by a%, then the decrease or increase in consumption so as not to increase or decrease the expenditure is equal to $\left(\frac{a}{100 \pm a}\right)$ x 100%
7. The passing mark in an examination is P%. if a candidate score R marks and fails by F marks, then the maximum marks $M = \frac{100(R+F)}{p}$
8. If, in an examination x% of the total number of students failed in subject A and y% of the total number of students failed in subject B and z% failed in both the subjects, then the percentage of the students who passed in both the subjects is given as [100 – (x + y - z)] %.
9. If the population of a town is P and it increases (or decreases) at the rate of R% per annum, then

• Population, after n years = $P\left(1 \pm \frac{R}{100}\right)^n$

• Population, n years ago = $\frac{P}{\left(1 \pm \frac{R}{100}\right)^n}$

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