

## PERCENTAGE

### BASIC (LEVEL 1)

1. If boys make up 65% of a class that has 28 girls, the total strength of the class is?

Let the total strength of the class be T.

35% of the total is 28, which means

$$35T/100 = 28$$

$$T = 2800/35 = 80$$

2. 80% of a number when added to 80, is equal to that number. Find the 50% of that number?

Let the number be N

$$80\% \text{ of } N + 80 = N$$

Solving it, we get  $.2N = 80$

$$N = 400$$

50% of that number is 200.

3. A's salary is 20 % more than B. B's salary is 10% less than C. If A's salary is 1080. Find the salary of C?

$$A = 1.2 B$$

$$B = .9C$$

$$C = A/(1.2 \times .9) = 1080/1.08 = 1000$$

4. Difference of 9% of a number and 5% of other number is equal to sum of 8% of first number and 7% of second number. Find the ratio of two numbers?

Let the numbers be A & B

$$9A - 5B = 8A + 7B$$

$$A = 12B$$

$$A/B = 12/1$$

### MODERATE (LEVEL 2)

5. The price of LPG gas is decreased by 30% and so a person increased his consumption by 25%. What percent in the rise or fall in the expenditure incurred by him on LPG?

Expenditure = Price x Consumption

Thus, New Expenditure =  $.7 \text{ Price} \times 1.25 \text{ Consumption}$

$$= .875 \text{ Price} \times \text{Consumption}$$

$$\text{Change in Expenditure} = .875 - 1 = -.125$$

Thus, the percentage decrease in expenditure is 12.5%

- 6. The length of a rectangle is increased by 20% whereas breadth is decreased by 10%. Find the change in perimeter of the rectangle?**

Let 20 and 10 be the length and breadth of the rectangle.

Thus, perimeter =  $2(30) = 60$

New length is 24

New Breadth is 9

New Perimeter =  $2(33) = 66$

Change in Perimeter =  $(66 - 60)/60 \times 100 = 10\%$

Thus, there is a 10 increase in the perimeter.

- 7. Vino bought some mangoes of which 13% of them were rotten. He sold 75% of the remaining and was left with 522 mangoes. How many mangoes did he have originally?**

Let the total number of mangoes by T

13% were rotten thus, he is left with .87T

75% of this number is sold and was left with 522 mangoes.

Means,  $.25 \times .87T = 522$

Solving, we get 2400 mangoes.

- 8. In an election contest between A and B, A wins by a margin of 220 votes. If A gets 60% of the total votes, total votes are?**

Let the total number of votes be V

A gets .6V

B should be getting  $.6V - 220$  votes.

Now,  $A + B = V$

$.6V + .6V - 220 = V$

$1.2V - V = 220$

$.2V = 220$

$V = 220/.2 = 1100$  Votes.

### **ADVANCE (LEVEL 3)**

- 9. The population of a town is 5500. If the number of females was to decrease by 20% and the number of males in the village was to increase by 11%, then population would become 5175. How many females were there in the village?**

Let the number of males and females in the town be M & F respectively.

Thus,  $M + F = 5500$

Now,  $1.11M + .8F = 5175$

Solving both the equations, we get  $F = 2500$

**10. During an election, 70 % of the people who polled said that they would vote for BJP of those who said that, only 60% actually voted for BJP. Out of those who did not say that would vote for BJP, 70% actually voted for BJP. What percent of those who polled did vote for BJP?**

Let the total number who polled be 100

70% of the people who polled said they would vote for BJP, but actually only 60% polled for BJP. Thus 42 voted for BJP.

Out of the remaining 30, 70% also voted for BJP, i.e. 21

Hence, BJP got a total of 63 votes, which is 63%