

3. RATIO AND PROPORTION

- * **Ratio**: The comparison of two similar quantities by division is called ratio.
The ratio of a and b is written as $a : b$ (or) a/b . where a is called first term or antecedent and b is called second term or consequent
- * **Proportion**: The equality of two ratios is called proportion. if $a : b = c : d$ then a,b,c and d are said to be in proportion it is also written as $a : b :: c : d$
- * **Note :-** If $a : b = c : d$ then $ad = bc$
i.e, product of the extremes = product of the means,
i) mean proportional : the mean proportion of 'a' and 'b' is $\sqrt{ab}$
ii) third proportional : If $a:b = b : c$ then c is called the third proportional of a and b
iii) Fourth proportional : If $a : b = c : d$ then d is called the fourth proportional and also $d = bc/a$
- * **Unitary method :-** The method in which we first find the value of one unit and then the value of the required number of units is known as unitary method.
- * **Direct proportion**: When one quantity increases (decreases) leads increase (decrease) in other quantity,
the quantities are said to be direct proportion.
We say that "a" is directly proportional to "b" if $a = kb$ for some constant K and we write $a \propto b$
- * **Indirect Proportion :-** If some increase (decrease) in one quantity leads decrease (Increase) in other quantity the quantities are said to be indirect proportion
We say that a is inversely proportional to b if $ab=k$ for some constant K and we write $a \propto \frac{1}{b}$
- * **Percentage**:- The word percent means per hundred or out of any hundred.
The symbol for percentage is %
Percentage are used in daily life situations like profit and loss, discount and simple interest etc
 $x\%$ is written in fraction as $x/100$.
 a/b is written in percentage as $a/b \times 100$

(i) If the present population of a town is 'p' it increases R% for every year then

i) the population after 'n' years = $P \left(1 + \frac{R}{100}\right)^n$

ii) the population 'n' years back = $\frac{P}{\left(1 + \frac{R}{100}\right)^n}$

(ii) The present value of an article is 'P' it decreases R % of every year then

i) The value of the article after 'n' years = $P \left(1 - \frac{R}{100}\right)^n$

ii) The value of the article before 'n' years = $\frac{P}{\left(1 - \frac{R}{100}\right)^n}$

iii) If 'A' is R% greater than 'B' then B is less than A by $\left(\frac{R}{100 + R} \times 100\right)$

If A is R% less than 'B' then 'A' is $\left(\frac{R}{100 - R} \times 100\right)\%$ greater than 'B'

Profit = selling price - cost price = SP - CP

loss = CP - SP

the profit or loss is always calculated on cost price

% of profit = Profit x 100 / C.P % of loss = loss x 100 / C.P

$C.P = \frac{100}{(100 + P\%)} \times S.P$ (or) $C.P = \frac{100}{(100 - l\%)} \times S.P$

$S.P = \frac{(100 + P\%)}{100} \times C.P$ (or) $S.P = \frac{(100 - l\%)}{100} \times C.P$

SOLVED PROBELMS

1. In a mixture of 60 litres, the ratio of milk and water is 5 : 6. If the ratio is to be 2 : 3 then the quantity of water to be further added is []

a) 10 l b) 27 l c) 18 l d) 12 l

Ans: Quantity of milk = $\frac{5}{11} \times 132 = 60l$

$$\text{water} = 132 - 60 = 72l$$

$$\text{milk : water} = 2 : 3$$

$$60 : x = 2 : 3 \Rightarrow x = 60 \times 3 / 2 = 90l$$

$$\text{Total water} = 90l$$

$$\text{Quantity of water to be added} = 90 - 72 = 18l$$

Note : The ratio of the incomes of two persons a : b . and the ratio of their earnings c : d their savings is

Rs. 'x' then their incomes are

$$\text{i) income of 1st person} = \frac{xa(d-c)}{ad-bc} \quad \text{Total income} = \frac{x(d-c)}{ad-bc} \times ab$$

$$\text{ii) income of 2nd person} = \frac{xb(d-c)}{ad-bc}$$

2. The ratio of the incomes of Komali and Asha is 4 : 3 and the ratio of their expenditure is 3 : 2 their savings is Rs. 600. Find their total income []

a) Rs. 4200 b) Rs. 5600 c) Rs. 8400 d) Rs. 7000

Ans: a : b = 4 : 3 c : d = 3 : 2 x = 600

$$\text{Total income} = 600 \times \frac{2-3}{4(2)-3(3)} \times (4+3) = 600 \times \frac{-1}{-1} \times 7 = \text{Rs}4200$$

Note : If a numbers 'k' is subtracted from the ratio a : b and is equal to the ratio c : d then the number are :

$$k \times \frac{a(d-c)}{ad-bc}; k \times \frac{b(d-c)}{ad-bc}$$

3. Ratio of two numbers 12 : 13 if 20 is subtracted from them the ratio is equal to 2 : 3 then the no' s are []

a) 22,24 b) 24, 26 c) 16,18 d) 14, 20

Ans a = 12 b = 13 c = 2 d = 3 x = 20

$$no's = 20 \times \frac{12(3-2)}{12(3)-13(2)} = 20 \times \frac{12 \times 1}{10} = 24$$

$$\frac{20(13)(3-2)}{12(3)-13(2)} = 20 \times \frac{13 \times 1}{10} = 26$$

The numbers are = 24,26

Note : Which number is subtracted from a, b, c ,d to be proportional?

$$\text{Ans : Required No} = \frac{ad - bc}{(a+d)-(b+c)}$$

4. Which least number is substrated from 24, 31, 58,79 to be proportional[]

a) 5 b) 7 c) 2 d) 3

Ans : a = 24 b= 31 c = 58 d= 79

$$\text{Required no} = \frac{24(79)-31(58)}{(24+79)-(31+58)} = \frac{98}{14} = 7$$

5. In a camp there is a meal for 2100 soldiers for 50 days. Some soldies are left on leave. The remaining soldiers have taken meals for 75 days. Find the no.of soldiers left? []

Ans : A = 2100 B = 72 C= 50

$$\text{No.of soldiers is on leave} = \frac{A(B-C)}{B} = \frac{2100(75-50)}{75} = 75$$

6. If $3A = 5B = 6C$. find A : B : C

$$\text{Ans : A : B : C} = \frac{1}{3} : \frac{1}{5} : \frac{1}{6} = 10:6:5$$

7. If the cost price of 15 watches is equal to the selling price of 20 watches. then the loss percent is .. .[]

a) 25% b) 20% c) $22\frac{1}{2}\%$ d) 18%

Ans: C.P of 15 watches = S.P of 20 watches

$$\frac{C.P}{S.P} = \frac{20}{15} \quad cp > sp \quad 20-15 = 5$$

$$\% \text{ of loss} = \frac{5}{20} \times 100 = 25\%$$

8. A person sold two articles at Rs. 19,800 each. If he earns 10% profit on 1st and 10% loss on second. Find the cost price of two articles. []

a) Rs. 39,500 b) Rs. 38,000 c) Rs. 40,000 d) Rs. 41,000

Ans: % of loss = $(10/10) = 1\%$

Total SP = $19,800 \times 2 = 39,600$

$$SP = 100 - 1 = 99$$

$$CP - SP$$

$$100 - 99$$

$$100 : x = 99 : 39,600$$

$$\text{Total S.P} = \frac{100 \times 39,600}{99} = \text{Rs. } 40,000$$

9. The labeled price of a saree is Rs.2000. Discount 20%. If the customer asked 10% more discount. Find the total discount on the marked price. []

a) 25% b) 30% c) 24% d) 28%

$$\text{Ans : } S.P = \text{Rs. } 2000 \times \frac{100-20}{100} \times \frac{100-10}{100} = 2000 \times \frac{80}{100} \times \frac{90}{100} = \text{Rs. } 1440$$

$$\text{Discount} = \text{Rs. } 2000 - \text{Rs. } 1440 = \text{Rs. } 560$$

$$\% \text{ of discount} = \frac{560}{2000} \times 100 = 28\%$$

10. Successive discount of 20% , 30% and 50% amount to a single discount of []

a) 80 % b) 72% c) 94% d) 78%

$$\text{Ans : } \frac{100-20}{100} \times \frac{100-30}{100} \times \frac{100-50}{100} \times 100$$

$$= \frac{80}{100} \times \frac{70}{100} \times \frac{50}{100} \times 100 = 28\%$$

$$\text{Discount} = 100 - 28 = 72\%$$

11. A certain money amounts to Rs. 3840 in 2 years and amount to Rs. 4800 in 5 years on simple interest, then the principle is []

a) Rs. 3200 b) Rs. 2800 c) Rs. 2900 d) Rs. 3600

Ans : $T_1 = 2$ years $T_2 = 5$ years

$$\text{S.I for 2 years} = T_2 \times \frac{B - A}{T_2 - T_1} = 2 \times \frac{4800 - 3840}{5 - 2} = 2 \times \frac{960}{3} = 640$$

Principal = $3840 - 640 = \text{Rs. } 3200$

12. The simple interest on a certain money in 2 years at 5% is Rs.50 find its difference between C.I and S.I is same time period []

a) Rs. 1.05P b) Rs. 1.25P c) Rs. 1.5P d) Rs. 1.65P

Sol : $R = 5\%$ $T = 2$ years $I = 50$ $P = ?$

$$P = 50 \times 100 / 5 \times 2$$

Rs. 500

$$C.I = 500 \times \left(1 + \frac{5}{100}\right)^2 = 500 \times \frac{105}{100} \times \frac{105}{100} = 551.25$$

Difference = $C.I - S.I = 551.25 - 550 = \text{Rs. } 1.25$

13. Certain money 9 times is 2 years. Then the interest = []

a) 190% b) 100 % c) 150% d) 200%

Ans : $r = [9^{1/2} - 1] \times 100 = (3 - 1) 100 = 200\%$

14. If Rs. 64 amounts to Rs.83.20 in 2 years at the same rate of interest find the amount of Rs.86 in 4 years? []

a) Rs 137.60 b) Rs. 136.50 c) Rs. 138.50 d) Rs 128.60

$$\text{Sol : } r = \frac{100 \times (83.20 - 64)}{64 \times 2} = \frac{100 \times 19.20}{64 \times 2} = \frac{1920}{64 \times 2} = 15\%$$

$$\text{Interest} = \frac{86 \times 15 \times 4}{100} = 51.60$$

Amount = $86 + 51.60 = \text{Rs. } 137.60$

15. The compound interest on a certain money for 2 yrs is Rs. 578.40 and in 3 years is Rs. 614.55 Find the rate of interest []

a) $8 \frac{1}{4} \%$ b) $12 \frac{1}{2} \%$ c) $6 \frac{1}{4} \%$ d) $8 \frac{1}{2} \%$

Sol : On Rs. 578.40 Interest on 1st year = $614.15 - 578.40 = \text{Rs. } 36.15$

$$R = \frac{100I}{PT} = \frac{100 \times 36.15}{578.40 \times 1} = 6 \frac{1}{4} \%$$

Note : 1) On simple interest certain money double on 'x' years. 3 times on "2x" years and 4 times on "3x" years.

2) On compound interest certain money doubles on 'x' years, 4 times on '2x' years and 8 times on '3x' years.

LEVEL -1

1. Simplest form of $36 : 81$ is []
a) $7 : 9$ b) $4 : 9$ c) $9 : 4$ d) $3 : 7$
2. Simplest form of $4 \frac{1}{5} : 2 \frac{1}{3}$ is []
a) $2 : 3$ b) $3 : 2$ c) $9 : 5$ d) $5 : 9$
3. 84 Toffies distributed between Ravi and Latha in the ratio $5 : 7$. No. of Toffies Ravi got []
a) 49 b) 7 c) 40 d) 35
4. If $a : b = 3 : 4$ b: $c = 16 : 27$ then $a : c =$ []
a) $4 : 9$ b) $9 : 4$ c) $3 : 4$ d) $4 : 7$
5. If $a : b = 3 : 5$ and $b : c = 6 : 7$ then $a : b : c =$ []
a) $9 : 10 : 15$ b) $18 : 30 : 35$ c) $30 : 18 : 35$ d) $18 : 35 : 30$
6. The length and breadth of a rectangle 45cm, 27cm respectively. then the ratio of length and breadth is []
a) $3 : 5$ b) $5 : 3$ c) $40 : 20$ d) $5 : 4$
7. $2 : 5 = 6 : \dots\dots\dots$ []
a) 15 b) 10 c) 12 d) 5
8. The ratio of two angles is $3 : 1$ and larger angle is 63° , then the smaller angle is []
a) 42° b) 40° c) 21° d) 23°
9. The cost of Dozen bananas is Rs. 60. Find the cost of 9 bananas []
a) Rs. 15 b) Rs. 45 c) Rs. 40 d) Rs. 60
10. The compound ratio of $7 : 5$ and $8 : x$ is $84 : 60$. then the value of x is []
a) 10 b) 9 c) 8 d) none []
11. A bag contains 25P, 10P and 5P coins in the ratio $5 : 9 : 4$ amounting to Rs. 30. Find the number of 5P coins? []
a) 50 b) 100 c) 19 d) 20
12. The fourth proportional of 5,8, 15 is []
a) 18 b) 24 c) 19 d) 20

13. The mean proportional of 234 and 104 is []
a) 12 b) 39 c) 54 d) None
14. If 12 is the antecedent of a ratio which is equivalent to 3 : 4 find the consequent
a) 9 b) 16 c) 20 d) 24 []
15. The ratio of the number of boys and girls in a school is 8 : 5. If the number of girls is 160 then the total number of students is []
a) 160 b) 200 c) 256 d) 416
16. The third proportional of 0.36 and 0.48 is []
a) 0.64 b) 0.1728 c) 0.42 d) 0.94
17. 15% of Rs.34 is []
a) Rs. 3.40 b) Rs. 3.75 c) Rs. 4.50 d) Rs. 5.10
18. 45% of 750 - 25% of 480 is []
a) 216 b) 217.50 c) 236.50 d) 245
19. What percent of a day is 3 hours? []
a) $12\frac{1}{2}\%$ b) $16\frac{2}{3}\%$ c) $18\frac{2}{3}\%$ d) $22\frac{1}{2}\%$
20. 270 students appeared at an examination. 252 members were passed. Then find the pass percentage ? []
a) 80% b) $83\frac{1}{2}\%$ c) $90\frac{1}{3}\%$ d) $93\frac{1}{3}\%$
21. In an examination 35% of the students passed and 455 failed. How many students appeared for the examination? []
a) 490 b) 700 c) 845 d) 1300
22. A fruit seller had some apples. He sells 40% apples and still has 420 apples. Originally he had : []
a) 588 apples b) 600 apples c) 672 apples d) 700 apples
23. If a radio is purchased by Ramu for Rs.490 and sold for Rs. 465.50. Find the loss percent []
a) 5% b) 6% c) 10% d) 2 %
24. A vendor bought bananas at 6 for Rs.10 and sold them at 4 for Rs.6. Find his gain or loss percent? []
a) 10% profit b) 10% loss c) 5% profit d) 5% loss

25. The cost of a pair of shoes is Rs. 450 and sale tax is 6%. How much amount should be paid to shopkeeper? []
 a) Rs. 27 b) Rs. 500 c) Rs. 477 d) Rs. 600
26. The marked price of a book is Rs.150. If 15% discount is given how much amount should be paid to the shopkeeper? []
 a) Rs. 127.50 b) Rs. 127 c) Rs. 130 d) Rs. 135
27. Sam purchased 20 dozens of toys at the rate of Rs.375 per dozen. He sold each one of them at the rate of Rs. 33. What was his profit percentage ?
 a) 3.5 b) 4.5 c) 5.6 d) 6.5 []
28. Madhu purchased a house at Rs.3,20,000 and sold it for Rs.2,80,000 due to some reasons. Find his loss percentage? []
 a) 12.5% b) 18.65% c) 17% d) 20%
29. A bag marked at Rs.80 is sold for Rs.68. the rate of discount is []
 a) 12% b) 15% c) 17 11/17% d) 20%
30. The ratio of two numbers is 3 : 4 if 5 : 6 is the new ratio when 8 is added to each of them. Find the numbers []
 a) 12,16 b) 14,16 c) 16,18 d) 12,18
31. A sum of Rs. 12,500 amounts to Rs. 15,500 in 4 years at the rate of simple interest. What is the rate of interest? []
 a) 3% b) 4% c) 5% d) 6%
32. The rate at which a sum becomes four times of itself in 15 years at S.I will be []
 a) 15% b) 17 1/2 % c) 20% d) 25%
33. A sum of money at simple interest amount to Rs.815 in 3 years and to Rs.854 in 4 years, the sum is []
 a) Rs. 650 b) Rs. 690 c) Rs. 698 d) Rs. 700
34. What will be the compound interest on a sum of Rs. 25,000. after 3 years at the rate of 12% []
 a) Rs. 9000.30 b) Rs. 9720 c) Rs.10123.20 d) Rs. 10483.20
35. What will be the difference between simple and compound interest at the rate of 10% per annum on a sum of Rs. 1000 after 4 years? []
 a) Rs. 31 b) Rs. 32.10 c) Rs. 40.40 d) Rs. 64.10
36. On a scale map. 0.6 cm represents 6.6 km. If the distance between the points on the map is 80.5 cm. The actual distance between these points is .[]
 a) 9 km b) 72.5 km c) 190.75 km d) 885.5 km

37. A flag staff 17.5 in height casts a shadow of length 40.25m. the height of the building, which casts a shadow of length 28.75m under similar conditons will be []
- a) 10m b) 12.5 m c) 17.5 m d) 21.25 m
38. The sale price of an article including the saletax is Rs. 616. The rate of sale tax is 10%. If the shopkeeper has made a profit of 12% then the cost price of the article is []
- a) Rs. 500 b) Rs.515 c) Rs. 550 d) Rs. 600
39. 10% loss on selling price is what percent loss on the cost price? []
- a) $9\frac{1}{11}\%$ b) $9\frac{2}{11}\%$ c) 10% d) 11%
40. A shopkeeper sold an article eoffering a discount of 5% and earned a profit of 23.5% what would have been the percentage of profit earned if no discount was offered? []
- a) 24.5 b) 28.5 c) 30 d) 40

LEVEL -2

- 1,. If $x : y = 3 : 4$ then $(4x+5y) = (5x-2y) = \dots\dots\dots$ []
- a) 30 : 8 b) 32 : 7 c) 7 : 32 d) 4 : 5
2. If $\frac{x}{5} = \frac{y}{8}$ then $x + 5 = y + 8$ is []
- a) 3 : 5 b) 13 : 8 c) 8 : 5 d) 5 : 8
3. Two numbers are in the ratio 1 : 2 if 7 is added to both, their ratio changes to 3:5 the greatest number is []
- a) 24 b) 26 c) 28 d) 32
4. Three numbers are in the ratio 3 : 4 : 5 and the sum of their squares is 1250. the sum the of numbers is []
- a) 30 b) 50 c) 60 d) 90
5. The ratio of two numebrs is 3 : 4 their LCM is 180. then find the 1st number
- a) 60 b) 45 c) 20 d) 15 []
6. The sum of three numbers is 98. If the ratio of the first to the seocnd is 2 : 3 and that of the second to the third is 5 : 8 then the second number is []
- a) 20 b) 30 c) 48 d) 58 []

7. The age of Kiran and Ravi are in the ratio 3 : 1 fifteen years hence, the ratio will be 2 : 1 their present ages are []
 a) 30 years, 10 years b) 45 years, 15 years
 c) 21 years, 7 years d) 60 years, 20 years
8. The ratio of the income of A and B is 5 : 4 and the ratio of their expenditures is 3 : 2 . If at the end of the year, each saves Rs. 1600 then the income of A is []
 a) Rs. 3400 b) Rs. 3600 c) Rs. 4000 d) Rs. 4400
9. A sum of Rs.53 is divided among A,B, C in such away that A gets Rs.7 more than what B gets and B gets Rs.8 more than what C gets the ratio of their shares is []
 a) 16 : 9 : 18 b) 25 : 18 : 10 c) 18 : 25 : 10 d) 15 : 8 : 30
10. 0.4 th part of a number is equal to 0.06th part of the another number. Then their ratio is []
 a) 2 : 3 b) 3 : 4 c) 3 : 20 d) 20 : 3
11. What percentage is equal to 3% in 5% ? []
 a) 15% b) 30% c) 50% d) 60%
12. Subtracting 40% of a number from the number we get the result as 30. the number is []
 a) 28 b) 50 c) 52 d) 70
13. In an election a candidate who gets 84% of the votes is elected by a majority of 476 votes. Waht is the total number of votes polled? []
 a) 672 b) 700 c) 749 d) 848
14. A's salary is 50% more than B's. How much percent is B's. salary less than A's? []
 a) 33% b) $33\frac{1}{4}\%$ c) $33\frac{1}{3}\%$ d) $33\frac{1}{2}\%$
15. A student multiplied a numebr by $\frac{3}{5}$ insterad of $\frac{5}{3}$. Waht is the percentage error is calcualtion? []
 a) 34% b) 44% c) 54% d) 64%
16. Salary of a person Rs.42000. He spends 30% on hosue rent, 25% on personal expenditure and 20% for donation, then find his savings? []
 a) Rs. 8500 b) Rs. 9500 c) Rs. 10.500 d) Rs. 10,000

17. The population of a town decreases in two consecutive years 5% and 10% find what percent of population decrease after 2 years? []
 a) 15% b) 14% c) 14.5 % d) 15.5%
18. By selling an article for Rs. 100 a man gains Rs.15 then his gain % is .[]
 a) 15% b) $12\frac{2}{3}\%$ c) $17\frac{11}{17}\%$ d) $17\frac{1}{4}\%$
19. A man buys a cycle for Rs. 1400 and sells it at a loss of 15%. What is the selling price of the cycle []
 a) Rs. 1090 b) Rs. 1160 c) Rs. 1190 d) Rs. 1202
20. If the cost price is 96% of the selling price then what is the profit percent?
 a) 5 % b) 4.17% c) 4% d) 4.5% []
21. The C.P of 21 articles is equal to S.P of 18 articles. Find the gain or loss percent? []
 a) $16\frac{2}{3}\%$ loss b) 16% loss c) $16\frac{2}{3}\%$ gain d) 16% gain
22. A man bought a horse and a carriage for Rs.3000. He sold the horse at a gain of 20% and the carriage at a loss of 10% thereby gaining 2% on the whole. Find the cost of the horse? []
 a) Rs. 1000 b) Rs. 1200 c) Rs. 1400 d) Rs. 1500
23. If the cost of 12 pens is equal to the selling price of 8 pens the gain percent is
 a) 25% b) $33\frac{1}{3}\%$ c) 50% d) $66\frac{2}{3}\%$ []
24. When a plot is sold for Rs. 18,700 the owner loses 15% . At what price must the plot be sold in order to gain 15% ? []
 a) Rs. 21,000 b) Rs. 22,500 c) Rs. 25,300 d) Rs. 25,800
25. If 5% more is gained by selling an article for Rs. 350 than by selling it for Rs. 340. The cost of the article is []
 a) Rs. 50 b) Rs. 160 c) Rs. 200 d) Rs. 225
26. The difference between the C.P and S.P of an article is Rs. 240. If the profit is 20% the selling price is []
 a) Rs. 1240 b) Rs. 1400 c) Rs. 1600 d) Rs. 1200
27. A sells a bicycle to B at a profit of 20% B sells it to C at a profit of 25% if C Pays Rs.225 for it the C.P of the bicycle for A is []
 a) Rs. 110 b) Rs.120 c) Rs. 125 d) Rs. 150

28. The price of a T.V marked at Rs.12,000. If successive discount of 15%, 10% and 5% be allowed. Then at what price does a customer buy it ? []
 a) Rs. 8400 b) Rs. 872 c) Rs. 8856 d) Rs. 9000
29. A sum of money doubles itself at compound interest in 5 years. In how many years will become eight times? []
 a) 8 Years b) 10 Years c) 15 Years d) 20 Years
30. The difference between compound interest and simple interest on an amount of Rs.15000 for 2 years is Rs.96. What is the rate of interest per annum
 a) 8 b) 10 c) 12 d) none []
31. A garrison of 500 men had provisions for 27 days. After 3 days a reinforcement of 300 men arrived. For how many more days will be remaining food last now? []
 a) 15 b) 16 c) 17 1/2 % d) 18
32. A person invested in all Rs. 2600 at 4% , 6% , and 8% per annum S.I. At the end of the year he got the same interest in all the 3 cases, the money invested at 4% is []
 a) Rs. 200 b) Rs. 600 c) Rs. 800 d) Rs. 1200

Previous Year Questions 2015

1. If sum of 3 numbers is 98 the ratio of the first to the second is 2/3 and the ratio of the second to the third is 5/8. What is the second number?[]
 a) 25 b) 28 c) 30 d) 32

Nov-2014

1. If $3 : 5 = 4 : 5 : x$ then $x - 5 = ?$ []
 a) 7.5 b) 5 c) 4.5 d) 2.5
2. $8\% \text{ of } 400 - 4\% \text{ of } 800 + 1\% \text{ of } 500 = \dots\dots\dots$ []
 a) 10 b) 20 c) 4 d) 5
3. The length and breadth of a rectangle are increased by 25% and 33 1/3 % respectively the area will increase by []
 a) 33 1/3 % b) 25 % c) 58 1/3 % d) 66 2/3 %

Nov-2013

1. If a number is increased by 33 1/3 % and the resultant is decreased by 25% then its values []
 a) remaining same b) increased by 10%
 c) decreased by 10% d) increased by 8 1/3 %

2. The marked price of a machine is 18,000 if it is sold at 20% discount there is a loss of 4% then its cost in Rs. is []
 a) 15000 b) 16000 c) 14000 d) 13000
3. If $3a = 4b$ and $5b = 6c$ then $a : b : c$ is []
 a) $5 : 6 : 8$ b) $6 : 5 : 8$ c) $6 : 8 : 5$ d) $8 : 6 : 5$
4. A person riding a bicycle reaches a certain distance in 5hrs with a speed of 16 kmph if he has to cover the same distance in 4 hours then the percentage of speed he has to increase is []
 a) 10% b) 15% c) 25% d) 20%

LEVEL -1

- | | | | | | |
|-------|-------|-------|--------|-------|-------|
| 1. b | 2. c | 3. d | 4. a | 5. b | 6. b |
| 7. a | 8. c | 9. b | 10. c | 11. c | 12. b |
| 13. d | 14. b | 15. d | 16. a | 17. d | 18. b |
| 19. a | 20. d | 21. b | 22. d | 23. a | 24. b |
| 25. c | 26. a | 27. d | 28. a | 29. b | 30. a |
| 31. d | 32. c | 33. c | 34. c | 35. d | 36. d |
| 37. b | 38. a | 39. a | 40. c. | | |

LEVEL -2

- | | | | | | |
|-------|-------|-------|-------|-------|-------|
| 1. b | 2. d | 3. c | 4. c | 5. b | 6. b |
| 7. b | 8. c | 9. b | 10. d | 11. d | 12. b |
| 13. b | 14. c | 15. d | 16. c | 17. c | 18. c |
| 19. c | 20. b | 21. c | 22. b | 23. c | 24. c |
| 25. c | 26. d | 27. d | 28. b | 29. c | 30. a |
| 31. a | 32. d | | | | |