

# Indus Education



## **Employability Training Program**

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# Number System

1. How many figures are required to number the pages of a book containing 2066 pages?  
a. 2066      b. 7157      c. 7153  
d. 8264      e. None of these
2. How many numbers from 500 to 800 either begin with or end with a 7?  
a. 60      b. 61      c. 120  
d. 130      e. None of these
3. What is the greatest number of 5 digits that is exactly divisible by 147?  
a. 99999      b. 99776      c. 99960  
d. Cannot say      e. None of these
4. A certain number, when successively divided by 3, 4 and 5 leaves remainders 2, 1 and 3 respectively. What is the remainder when 60 divides the same number?  
a. 0      b. 41      c. 1  
d. 2      e. None of these
5. Find the sum of all the factors of 360.  
a. 16      b. 360      c. 1170  
d. 2160      e. None of these
6. The smallest number by which 172 should be multiplied to make it a perfect square is  
a. 2      b. 37      c. 43  
d. Cannot say      e. None of these
7. The digit in the units place in the expansion of  $(8)^{1013}$  is  
a. 2      b. 4      c. 6  
d. 8      e. None of these
8. A tin of oil was  $\frac{5}{7}$  full; when eight bottles of oil were taken out and five bottles of oil were poured into it, it was  $\frac{4}{7}$  full. How many bottles of oil can be contained in it?  
a. 1      b. 3      c. 7  
d. 21      e. None of these
9. A man travels  $\frac{1}{3}$  of a distance by car,  $\frac{1}{3}$  of the remaining by bus and  $\frac{1}{3}$  of the still remaining by train, and the remaining 512 km by scooter. Find the distance he traveled.  
a. 1024      b. 1564      c. 1728  
d. Cannot say      e. None of these
10. Two numbers, when divided by a certain divisor gives the remainders 23 and 47 respectively. When the sum of the two numbers is divided by the same divisor, the remainder is 19. Find the divisor.  
a. 38      b. 51      c. 73  
d. Cannot say      e. None of these
11. The number of zeros at the end of  $1000!$  is  
a. 3      b. 248      c. 249  
d. 768      e. None of these
12. What is the least possible value of P so that the number 674p96 is divisible by 3?  
a. 0      b. 1      c. 4  
d. 7      e. None of these
13. What is the sum of all odd numbers from 100 to 300?  
a. 10000      b. 20000      c. 22500  
d. Cannot say      e. None of these

14. Express 61.53535353...in the form of  $p/q$   
a.  $6092/99$     b.  $6153/99$     c.  $6153/100$   
d. Cannot say    e. None of these

15. In a division sum, the divisor is 12 times the quotient and 5 times the remainder. If the remainder is 48, then the dividend is  
a. 2404    b. 4808    c. 3648  
d. 4848    e. None of these

16. The sum of all integers, between 200 and 400, which are divisible by 9, is  
a. 3366    b. 6633    c. 6336  
d. 6363    e. None of these

17. A number, when divided by 783 gives a remainder 48. What remainder would be obtained by dividing the same number by 29?  
a. 17    b. 15    c. 21    d. 19    e. None of these

18. Find the smallest 5-digit number which is exactly divisible by 120.  
a. 12000    b. 24000    c. 60000  
d. 10080    e. None of these

19. A certain number, when successively divided by 8 and 11, leaves remainders 2 and 7 respectively. Find the smallest value of such a number.  
a. 144    b. 146    c. 152  
d. 160    e. None of these

20. The sum of any three consecutive numbers is divisible by 'x', then the greatest possible value of 'x' is  
a. 1    b. 2    c. 3  
d. 6    e. None of these

21. The units digit in the product  $(2467)^{153}[(34)^{72}]$  is  
a. 2    b. 4    c. 6    d. 8    e. None of these

22. The smallest fraction which should be subtracted from the sum of  $1\frac{3}{4}$ ,  $3\frac{1}{2}$ ,  $5\frac{1}{12}$  and  $6\frac{3}{16}$  to make the result a whole number is  
a.  $\frac{1}{4}$     b.  $\frac{2}{3}$     c.  $\frac{3}{4}$   
d.  $\frac{25}{48}$     e. None of these

23. A man spends  $\frac{2}{5}$ <sup>th</sup> of his salary on food,  $\frac{3}{10}$ <sup>th</sup> of his salary on house rent and  $\frac{1}{8}$ <sup>th</sup> of his salary on clothes. If he still has Rs. 1400 left with him, his salary is  
a. Rs. 5000    b. Rs. 6000    c. Rs. 8000  
d. Rs. 7000    e. None of these

24. A person is given counters marked from 0, 1, 2, 3....9, to form all numbers from 1 to 300. How many counters will be required?  
a. 792    b. 856    c. 300  
d. 1028    e. None of these

25. The square of a number cannot end with  
a. 0    b. 1    c. 2  
d. 4    e. 6

26. A piece of road is 5 kilometers in length. We have to supply lampposts. One post at each end, and distance between two consecutive lampposts is 25 meters. How many lampposts are required?  
a. 200    b. 201    c. 202  
d. Cannot say    e. None of these

# HCF AND LCM

1. The greatest number of 4 digits that is exactly divisible by 6, 7, 8, 9 and 10.  
a. 2520      b. 2250      c. 7560  
d. 7650      e. None of these
2. Find the least number which is exactly divisible by  $1\frac{5}{6}$ ,  $2\frac{2}{3}$ ,  $3\frac{1}{2}$  and  $5\frac{1}{2}$ .  
a. 606      b. 616      c. 626  
d. 636      e. None of these
3. One pendulum ticks 28 times in 63 seconds and another 35 times in 99 seconds. If they started simultaneously, find the time after which they will tick together.  
a. 100      b. 99      c. 96  
d. 94      e. None of these
4. Find the smallest number which when divided by 24, 36, & 60 leaves 20, 32 & 56 as remainders respectively?  
a. 256      b. 356      c. 456  
d. 556      e. None of these
5. The product of two 2-digit numbers is 2160 & their HCF is 12. The numbers are  
a. 72, 30      b. 36, 60      c. 96, 24  
d. 32, 70      e. None of these
6. Find the greatest number which can divide 1354, 1866 & 2762 leaving the remainder 10 in each case.  
a. 16      b. 32      c. 64  
d. 108      e. None of these
7. The HCF of two numbers is 16 & their LCM is 160, if one of the numbers is 32, then the other number is  
a. 48      b. 80      c. 90  
d. 112      e. None of these
8. The product of two numbers is 2025 and their H.C.F is 15. Find their L.C.M.  
a. 3375      b. 2025      c. 1350  
d. 2010      e. None of these
9. The greatest number that will divide 640, 710 and 1526 so as to leave 11, 7 and 9 as remainders respectively.  
a. 17      b. 27      c. 37  
d. 47      e. None of these
10. Three pieces of timber 24 meters, 28.8 meters and 33.6 meters long have to be divided into planks of the same length. What is the greatest possible length of each plank?  
a. 2.4 m      b. 4.8 m      c. 7.2 m  
d. 9.6 m      e. None of these
11. Three men A, B and C go walking round a circle 1 kilometer in circumference at the rates of 10, 20 and 40 meters per minute respectively. If they all start together and walk in the same direction, when will they again be together at the same place?  
a. After 50 minutes      b. After 240 minutes  
c. After 800 minutes      d. After 100 minutes  
e. None of these
12. A gardener had a number of shrubs to plant in rows. At first he tried to plant 5 in each row, then 6, then 8 and then 12, but had always 1 left. On trying 13, he had none left. What is the smallest number of shrubs that he could have had?  
a. 450      b. 470      c. 481  
d. 500      e. None of these

13. The circumferences of the fore and hind wheels of a carriage are  $\frac{12}{5}$  and  $\frac{24}{7}$  meters respectively. A chalk mark is put on the point of contact of each wheel with the ground at any given moment. How far will the carriage have traveled so that their chalk marks may be again on the ground at the same time?

- a. 26 meters    b. 24 meters    c. 42 meters  
d. 16 meters    e. None of these

14. Four bells ring at intervals of 10 min, 12 min, 15 min & 20 min respectively. If they ring together at 8 am, find after what interval of time do they ring together again?

- a. 9 am            b. 10 am            c. 11 am  
d. 1 pm            e. None of these

15. The ratio between two numbers is 4: 5. If each number is increased by 3, the ratio becomes 19: 23. Find the HCF of the numbers.

- a. 16            b. 20            c. 80  
d. 4            e. None of these

16. What greatest number that can be subtracted from 10000, so that the remainder may be divisible by 32, 36, 48 and 54?

- a. 496            b. 864            c. 9136  
d. 9316            e. None of these

17. Which is the greatest five digit number, which is exactly divisible by 5, 6 and 7?

- a. 99999            b. 99960            c. 99939  
d. 10420            e. None of these

18. Find the least five digit number which is exactly divisible by 4, 5 and 6.

- a. 99990            b. 10000            c. 10020  
d. 10060            e. None of these

19. Find the greatest four digit number, which when divided by 5, 6 or 7 gives a remainder 3 in each case.

- a. 9870            b. 9873            c. 1290  
d. Cannot say    e. None of these

20. Find the least 4-digit number, which when divided by 3, 4 or 5 gives a remainder 2 in each case.

- a. 1020            b. 1022            c. 9992  
d. cannot say    e. None of these

21. Find the least number, which when increased by 4, is exactly divisible by 13, 21 and 35.

- a. 1361            b. 1365            c. 1369  
d. 39            e. None of these

22. Find the least number, which when diminished by 7, is exactly divisible by 20, 36 and 120.

- a. 360            b. 367            c. 353  
d. Cannot say    e. None of these

23. A boy has three kinds of marbles, the first kind 143, the second 182 & the third 208. Find the least number of heaps into which he can keep them separately.

- a. 13            b. 21            c. 31  
d. 41            e. None of these

# RATIO AND PROPORTIONS

1. If  $a:b=3:7$ , find the value of  $(5a+b):(4a+5b)$   
a)15:44   b)22:35   c)15:49   d)22:47
2. The ratio between two number is 3:5 and their is 40. Find the larger of two numbers  
a)15   b)20   c)25   d)40
3. A bag contains one rupee, 50 paise and 25 paise coins in the ratio 1:2:4. If the total amount is Rs 75, then find the number of 50 paise coins in the bag  
a)25   b)50   c)75   d)100
4. If  $(x+4):(3x+15)$  is the triplicate of 2:3. Find the value of x  
a)1   b)3   c)4   d)none of these
5. If a is 75% of b, b is 150% of c and d is 25% of c, then find a:d  
a)9:1   b)9:2   c)8:3   d)8:1
6. The present ages of two persons are in the ratio 7:8. Twenty years ago the ratio of their ages was 9:11. Find the present age of the older son  
a)64 years   b)72 years  
c)56 years   d)40 years
7. Find x:y:z, if  $2x+y-5z = 0$  and  $3x-2y-4z=0$   
a)1:2:1   b)1:1:1   c)1:1:2   d)2:1:1
8. A certain sum is divided among A, B and C in a manner that for every rupee that A gets, B gets 75 paise and for every rupee that B gets, C gets 50 paise. If B's share in the total sum is Rs 840. Find the share of A  
a)Rs 2380   b)Rs 2240   c)Rs 1750   d)Rs 1120
9. Seventy eight is divided into two parts such that five times the first part and four times the second part are in the ratio 15:14. Find the first part  
a)32   b)36   c)42   d)46
10. A certain amount of money is divided among A, B and C such that A gets half of what B and C gets together. B gets one third of what A and C together get. If A got Rs 500 more than B, then how much money was divided?  
a)Rs 4500   b)Rs 6000   c)Rs 8000   d)none of these
11. In a school there are 650 students. The ratio of the boys to that of the girls is 8:5. How many more girls should join the school so that the ratio becomes 4:3?  
a)25   b)50   c)100   d)200
12. A variable x varies directly as the cube of another variable y. if  $x=4, y=2$ , then find y when  $x = 32$   
a)4   b)8   c)16   d)32
13. What should be subtracted from both the numbers which are in the ratio 3:4 so that the ratio becomes 2:3  
a)4   b)6  
c)10   d)cannot be determined
14. A varies directly as the sum of the quantities B and C. B in turn varies directly as x and C varies inversely as x. When  $x=2, A = 6$  and when  $x=4, A=9$ . Find the value of A when the value of  $x=16$   
a)2 1/2   b)1   c)8 1/2   d)32 1/4
15. The volume of a sphere varies directly as the cube of its radius. If three cubes of radii 3 cm, 4 cm and 5 cm are melted and recast into one sphere, then find the radius of the sphere  
a)5.5 cm   b)6 cm   c)7 cm   d)7.5 cm

Directions for question 16 to 18: These questions are based on the data given below

There are two colleges in the town—college A and B college. There are 500 students more in college A than in college B. The ratio of the boys to that of the girls in college A is 3:2 and that in college B is 4:1. The ratios of the number of science, humanities and commerce students in college A and college B are respectively 2:5:3 and 2:3:3. The number of commerce students in both the colleges is the same.

16. How many students are there in college A?  
a) 2000    b) 2500    c) 3000    d) 3500
17. How many girls are there in two colleges together?  
a) 1400    b) 1600    c) 1700    d) 2000
18. How many more/less humanities students are there in college A than in college B?  
a) 400 more                      b) 400 less  
c) 500 less                        d) 500 more
19. If  $(2x+5):(7x-6)$  is the duplicate ratio of 5:8, then find the value of x  
a) 6            b) 7            c) 10            d) none of these
20. The mean proportional between two numbers is 16 and their third proportional is 128. Find the smaller of the two numbers  
a) 8            b) 12            c) 16            d) 32
21. A bag contains 50 p, 25 p and 10 p coins in the ratio 5:9:4, amounting to Rs 206. Find the number of coins of each type  
a) 200, 360, 160                      b) 160, 360, 200  
c) 360, 373, 123                      d) 678, 234, 763
22. What is the ratio whose terms differ by 40 and the measure of which is  $2/7$ ?  
a) 16:56    b) 14:56    c) 15:56    d) 16:72
23. A sum of Rs 53 is divided among A, B, C in such a way 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
24. A certain amount was divided between A and B in the ratio 4:3. If B's share was Rs 4800, the total amount was  
a) Rs 11,200                              b) Rs 6,400  
c) Rs 19,200                              d) Rs 39,200
25. If 10% of  $x = 20\%$  of  $y$ , then  $x:y$  is equal to  
a) 1:2            b) 2:1            c) 5:1            d) 10:1
26.  $x$  varies inversely as square of  $y$ . Given that  $y=2$  for  $x=1$ . The value of  $x$  for  $y=6$  will be equal to  
a) 3            b) 9            c)  $1/3$             d)  $1/9$
27. The ratio of incomes 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 income of A is  
a) Rs 3400    b) Rs 3600    c) Rs 4000    d) Rs 4400
28. Three containers have their volumes in the ratio 3:4:5. They are full of mixtures of milk and water. The mixtures contain milk and water in the ratio of (4:1), (3:1) and (5:2) resp. The contents of all these three containers are poured into a fourth container. The ratio of milk and water in the fourth container is  
a) 4:1            b) 151:48    c) 157:53    d) 5:2
29. In a school, 10% of the boys are same in number as  $1/4$ th of the girls. What is the ratio of boys to girls in that school?  
a) 3:2            b) 5:2            c) 2:1            d) 4:3



30. The ratio of number of boys and girls in a school is 3:2.If 20% of the boys and 25% of the girls are scholarship holders,what percentage of the students does not get the scholarship?  
a)56      b)70      c)78      d)80
31. The sides of a triangle are in the ratio  $1/2:1/3:1/4$  and its perimeter is 104 cm.The length of the longest side is  
a)52 cm   b)48 cm   c)32cm   d)26cm
32. Which of the following ratios is greatest?  
a)7:15    b)15:23   c)17:25   d)21:29
33. In a college the ratio of number of girls to boys is 8:5.If there are 160 girls,the total number of students in the college is  
a)100    b)250    c)260    d)416
34. The least whole number which when subtracted from both the terms of the ratio 6:7 gives a ratio less than 16:21 is  
a)2       b)3       c)4       d)6
35. The speeds of three cars are in the ratio 5:4:6.The ratio between the time taken by them to travel the same distance is  
a)5:4:6   b)6:4:5   c)10:12:15      d)12:15:10
36. 15 litres of mixture contains 20% alcohol and the rest water.If 3 litres of water be mixed with it,the percentage of alcohol in the new mixture would be  
a)15       b) $16\frac{2}{3}$    c)17       d)none of these
37. 20 litres of mixture contains milk and water in the ratio 5:3.If 4 litres of this mixture be replaced by 4 litres of milk,the ratio of milk to water in the new mixture would be  
a)2:1      b)7:3      c)8:3      d)4:3
38. 85 kg of a mixture contains milk and water in the ratio 27:7.How much more water is to be added to get a new mixture containing milk and water in the ratio 3:1?  
a)5kg      b)6.5kg   c)7.25kg   d)8kg
39. The ages of A and B are in the ratio 3:1.Fifteen years hence,the ratio will be 2:1.Their present ages are  
a)30,10   b)45,15   c)21,7      d)60,20
40. The average age of three boys is 25 years and their ages are in the proportion 3:5:7.The age of the youngest boy is  
a)21       b)18       c)15       d)9

# PERCENTAGES

1. In a cricket tournament , a team wanted its over all success rate to be 75%.After playing half the total number of matches,it recorded only 50% success.What per- centage of the remaining matches should it win to achieve an overall success rate of 75%?  
a)50%    b)75%    c)100%    d)80%
2. A man sells shoes by first quoting the selling price at a certain mark up on the cost price.He later offers a discount on this price such that the discount percent is the same as the mark up percent.If his cost price per pair of shoes is Rs.300,then he makes an overall\_\_\_in the transaction  
a)profit                      b)loss  
c)no profit no loss    d)cannot be determined
3. The respective scores of two candidates in an examination are 50% and 80% of the maximum possible.The second candidate passes by 60 marks where as the first one fails by 120 marks.What is the pass mark?  
a)360    b)420    c)480    d)300
4. Two dining sets are sold at the same selling price resulting in a 20% gain on the first and and 1 30% gain on the second.By what is the cost price of the fist more than that of the second?  
a)8 1/2%    b)8 1/3%    c)17%    d)25%
5. By giving a discount of 30%,a trader makes a profit of 20%.If the trader gives a discount of Rs 400,he would make a 20% loss.Find the marked price of the article  
a)Rs 600    b)Rs 750    c)Rs 900    d)none of these
6. A bag contains balls of three different colours-Red,Blue and Green.The number of blue balls is 12 1/2% less than the number of red balls and 40% more than the number of green balls.By what percent is the sum of the blue and green balls less than the sum of the red and blue balls  
a)20%    b)25%    c)37.5%    d)6 1/4%
7. The price of sugar is increased by 50%.By what percentage should the consumption of sugar be reduced so that the expenditure on sugar is increased by 20%?  
a)20%    b)10%    c)33 1/3%    d)25%
8. A trader purchased two air conditioners.He sold both of them-one at 20% profit and the other at 20% loss.Find the overall profit or loss percentage in the transaction  
a)4% loss                      b)4% profit  
c)Neither profit nor loss  
d)cannot be determined
9. If a profit made by selling an article at Rs.3000 is twice the loss incurred when the article was sold at Rs.900,then find the cost price of the article  
a)Rs 1800                      b)Rs 1500  
c)Rs 1600                      d)Rs 1200
10. A trader,in an attempt to increase his sales, announces 20% discount on an article and hence reduces his profit per article from Rs 60 to Rs 40.Find the cost price of the article.  
a)Rs 40                      b)Rs 60  
c)Rs 100                      d)cannot be determined
11. Which of the following choices is a better bargain for a customer?  
a)A single discount of 40 %  
b)A discount of 25% followed by another discount of 15 %  
c)Three successive discounts of 20 %,10 % and 10 % respectively  
d)All the above are equally good
12.  $3(0.05 \text{ of } 1.25)$  is what percent of  $7.5\%$  of  $25 \times 10^{-3}$ ?  
a)3%    b)33 1/3%    c)100 %    d)1%

13. A and B start a business by investing some capital each. At the end of the year, A receives 20% of the total profit as commission while the rest of the profit is shared in the ratio of their respective investments. A finally receives 50% more than what B receives. If A's capital is Rs.10,576, then B's capital is  
 a) Rs14,101                      b) Rs 8813  
 c) Rs 6610                      d) none of these
14. A trader, by selling 30 suitcases, gains the selling price of 5 suitcases. Find the profit percentage per suitcase sold  
 a)  $16\frac{2}{3}\%$  b)  $28\frac{4}{7}\%$   
 c) 20%                      d) 25%
15. A trader makes 44% profit after allowing a discount of 20% on the marked price. What is the profit percent, if a discount of 40% is allowed?  
 a) 22%    b) 8%    c) 4.2%    d) 27.7%
16. Roopa sold 300 pens in a day. She made neither a profit nor a loss on one out of every four pens that she sold. If she earned an average profit of 20% on the remaining pens, find her overall profit percentage.  
 a) 15%    b)  $14\frac{2}{7}\%$  c) 12%    d)  $16\frac{2}{3}\%$
17. A trader quotes the selling price of an article 60% above the cost price. What is the maximum percentage discount that can be offered without suffering a loss?  
 a) 59%    b) 39%    c) 57%    d) 37.5%
18. A trader quotes 50% above the CP and realises 5% profit by selling at a certain discount. If the mark up and discount are increased by ten percentage points each, the percentage change in the selling price is  
 a) 9%    b)  $8\frac{4}{7}\%$                       c)  $9\frac{4}{7}\%$  d) 8%
19. Mahadev purchased 6% stock at 115 for Rs13,800. After some time he sold it for Rs17,400 and with that money he purchased 12% stock at 120. What is the difference between the number of shares he had initially and now?  
 a) 5    b) 12    c) 15    d) 25
20. An article was sold at a profit of 35% after two successive discounts of 10% and 25% were allowed on it. By what percent was the article marked above the cost price?  
 a) 60%    b) 75%    c) 80%    d) 100%
21. In a stock of 100 pens, if each is sold at 35% profit, then the CP of how many pens is equal to the selling price of 20 pens  
 a) 17    b) 27    c) 15    d) 23
22. When the price of an article is increased by 32%, it increases by Rs80. By what percent should the original price be reduced so that it decreases by Rs25?  
 a) 5%    b) 10%    c) 8%    d) 16%
23. In a library, 40% of the books are in English. 30% of the remaining books are in Hindi. One fifth of the remaining books are in Sanskrit and the remaining 1680 books are in other Indian languages. How many books are there in the library?  
 a) 25,000 b) 10,000 c) 20,000 d) 5000
24. In an election, three candidates-A, B and C contested. B won the election by a majority of 60,000 votes over C. If A got 50% votes less than C and a total of 4,80,000 people exercised their franchise, what were the total votes in favour of B?  
 a) 228000 b) 252000 c) 288000 d) 324000
25. The incomes of Anant and Bhargav are in the ratio 3:2. The expenditure of Bhargav is equal to the saving of Anant. If the savings of Anant and Bhargav are in the ratio 3:1, who spends the greater percentage of their respective incomes  
 a) Anant                      b) Bhargav

- c)Both spend an equal percentage
- d)cannot be determined

26. Apples bought at Rs 50 per dozen and sold at 50% profit.How much does a man have to pay for twenty apples?  
a)Rs 100 b)Rs 160 c)Rs 125 d)Rs 240
27. In a school 60% of the total students are boys.If 80% of the total students are absent on a rainy day,atleast what percent of the boys were absent on that day?  
a)33 1/3 % b)20%  
c)40% d)66 2/3%
28. Abhishek,Yatish and Menon start a partnership business with investments in the ratio 5:8:12.At the end of the year they shared the profit in the ratio 3:2:6.What is the ratio of the respective periods of investmenton menon,yatish and abhishek?  
a)12:5:10 b)10:5:12 c)15:16:72 d)72:16:45
29. A man purchased a stock of goods worth Rs 6000.He sold 2/5th of it at 30% profit.If he wants to gain 20% of the whole,the remaining goods should be sold at what percentage profit?  
a)12.5% b)16.66% c)13.33% d)14.28%
30. If one third of a number is 20 less than 80% of 80,what is 75% of that number?  
a)176 b)99 c)132 d)110
31. 20% of a larger number,is 2.3 less than 30% of a smaller number.If the larger number exceeds the smaller number by 10,what is the value of the larger number?  
a)67 b)33 c)53 d)47
32. A and B started a business by investing Rs 35,000 and Rs 13000 resp.At the end of every month,A withdraws a certain amount from his investment and B invests the same amount as A has withdrawn.At the end of the year,they share the profits in the ratio 1:1.Find the withdrawn by A every month  
a)Rs 1000 b)Rs 2000 c)Rs 3000 d)Rs 4000
33. When the length of a rectangle is decreased by thirty five percent and its breadth increased by fifty percen,the perimeter remains unchanged.By what percentage is the breadth less than the length?  
a)6 2/3% b)15% c)20% d)30%

Directions for question 34 to 36:These questions are based on the following data

34. If the respective profits on selling a colour TV and a DVD player are in the ratio 2:1. What is the costprice of a DVD player?  
a)Rs 2000 b)Rs 2250  
c)Rs 2500 d)cannot be determined
35. What is the ratio of the CP of a colour TV and a WM respectively?  
a)5:4 b)1:1  
c)4:5 d)cannot be determined
36. If the profit on selling a WM is 25% and the cost prices of a WM and a DVD player are in the ratio 3:1,what is the maximum percentage discount that can be offered on the price of a DVD player.So that there is no loss?  
a)20% b)25%  
c)40% d)cannot be determined

Directions for questions 37 to 40:Select the correct alternative from the given choices

37. A student ,calculated the percentage of profit of a transaction by taking the SP as the basis and arrived at the figure of 50% profit.What is the correct profit percentage?  
a)50% b)100% c)150% d)25%
38. A trader,by selling 20 suitcases,gains the cost price of 5 suitcases.Find the profit percentage per suitcase sold?

a)  $16\frac{2}{3}\%$  b) 25% c) 20% d) 22%

39. The production of 4 wheelers , 3 wheelers and 2-wheeler by an automobile manufacturer , during a year, is in the ratio 2:3:4. Owing to changing trends in the demand for vehicles, in the next year the company decides to cut its 4-wheeler production by half, and double its 2-wheeler production, while maintaining the 3-wheeler production at the level of the previous year. What is the change, in terms of percentage points, in the percentage share of 3-wheelers.

a) no change b)  $8\frac{1}{3}$  c)  $37\frac{1}{2}$  d)  $12\frac{1}{2}$

40. A trader purchases two sofa sets at prices which are in the ratio 5:3. The profit percentage he made on the second set is twice the (numerical value of the) loss percentage made on the first set. In the entire transaction, the trader makes a gain 2.5%. What is the loss percentage on the first set?

a) 16% b) 20% c) 12% d) 12.5%

INDUS EDUCATION

# PROFIT AND LOSS

1. A cycle is bought for rs.900 and sold for rs.1080. find the gain percent ?.  
1)  $16\frac{2}{3}\%$       2) 20%    3) 18%      4) 25%
2. A article is bought for rs.675 and sold for rs.900. find the gain percent ?.  
1)  $16\frac{2}{3}\%$     2) 30%    3)  $33\frac{1}{3}\%$     4)  $33\frac{1}{6}\%$
3. . A article is bought for rs.600 and sold for rs.500. find the loss percent ?.  
1)  $16\frac{4}{3}\%$     2)  $100/3\%$     3) 16%    4)  $16\frac{2}{3}\%$
4. the cost price of an article is rs.1500 and it was sold for rs.1230. find the loss %.  
1) 18%      2) 9%    3) 15%    4) 6%
5. a man bought a book for rs.150. for how much should sell it so as to gain 25%.  
1) rs.187.05    2) rs.187.50  
3) rs.187.25    4) rs.187.55
6. The cost price of radio is rs.1200. for how much it should be sold so as to gain  $66\frac{2}{3}\%$ ?  
1) rs.1500      2) rs.1800    3) rs.2000    4) rs.2100
7. A table is bought for rs.540. what is its selling price if it was sold at 15% loss .?  
1) rs.549      2) rs.459      3) rs.600      4) rs.810
8. an article is bought for rs.1200 and sold at a loss of  $16\frac{2}{3}\%$  find out the selling price.  
1) rs.1000      2) rs.1100      3) rs.950      4) rs.975
9. if by selling an article for rs.390 a shopkeeper gains 20%. Find the cost price.  
1) rs.352      2) rs.325      3) rs.320      4) rs.330
10. a book was sold for rs.1210 at a gain of 10%. Find the cost price.  
1) rs.1110      2) rs.1100    3) rs.950    4) rs.1000
11. By selling goods for rs.352.88 I lost 12%. Find the cost price.  
1) rs.410      2) rs.400      3) rs.401      4) rs.405
12. A T.V set was sold for rs.4900 at a loss of  $12\frac{1}{2}\%$ . Find the cost price.  
1) rs.5000      2) rs.5100    3) rs.5500    4) rs.5600
13. A dishonest dealer professes to sell goods at the cost price but uses a weight of 800 grams per kg. what is his gain percent.  
1) 20%    2) 25%    3) 30%    4) 15%
14. Ram professes to sell goods at the cost price but uses a weight of 900 grams instead of a kg. what is his gain percent.  
1) 11%    2)  $11\frac{2}{9}\%$     3)  $11\frac{1}{9}\%$     4) 10%
15. A dishonest dealer professes to sell goods at the cost price but gains 60%. what weight does he substitute for a kg ?  
1) 625 gms      2) 650 gms    3) 675 gms    4) 700 gms
16. A dishonest dealer professes to sell goods at the cost price but uses a false weight and gains 25%.find his false weight age.  
1) 700 gms      2) 750 gms    3) 800 gms    4) 850 gms
17. A man purchases 8 pens for rs.9 and sells 9 pens for rs.8. how much profit or loss does he make?  
1) 20.89% profit    2) 20.98% loss  
3) 20.89% profit    4) 20.89% loss

18. A boy buys 15 apples for rs.20 and sells 18 apples for rs.22. find his gain or loss percent.  
 1) 8.34% profit                      2) 8.43% profit  
 3) 8.34% loss                        4) 8.43% loss
19. A sells an article to B at a gain of 20% and B sells it to C at a gain of 10% and C sells it to D at a gain 15%. If D pays rs.7590. what is the price of A.  
 1) rs.5000            2) rs.6000  
 3) rs.5500            4) rs.4000
20. A sells an article to B at a gain of 5% and B sells it to C at a gain of 20% and C sells it to D at a gain 25%. If D pays rs.2520. what is the price of A.  
 1) rs.1500            2) rs.1600    3) rs.1700    4) rs.1800
21. A sells an article to B at a loss of 20% and B sells it to C at a gain of 25% and C sells it to D at a loss 25%. If D pays rs.960. what is the price of A.  
 1) rs.1200            2) rs.1250    3) rs.1280    4) rs.1300
22. A sells an article to B at a loss of 20% and B sells it to C at a loss of 20% and C sells it to D at a gain 30%. If D pays rs.780. what is the price of A.  
 1) rs.1000            2) rs.1100    3) rs.1122    4) rs.1050
23. A man buys an article for rs.850 and sells to B at a gain of 10% and B sells to C at a gain of 20%. How much does C pay.  
 1) rs.1212            2) rs.1122    3) rs.1221    4) rs.1010
24. A man buys an article for rs.2250 and sells to B at a loss of 20% and B sells to C at a gain of 15%. How much does C pay for it.  
 1) rs.1510            2) rs.1520    3) rs.1530    4) rs.1540
25. If an article is sold at a gain of 15% instead at a loss of 8% then the seller gets up rs.42 more. Find the cost price.  
 1) rs.600            2) rs.642            3) rs.558            4) rs.500
26. If an article is sold at a gain of 10% instead at a loss of 5% then the seller gets up rs.45 more. Find the cost price.  
 1) rs.250            2) rs.300            3) rs.350            4) rs.345
27. If an article is sold at a loss of 5% instead at a loss of 12% then a seller gets up rs.21 more. Find the cost price.  
 1) rs. 250            2) rs.300            3) rs.350            4) rs.345
28. By selling an article for rs.680 a man loss 15% . for how much should he sell to gain 30%.  
 1) rs.750            2) rs.800            3) rs.900            4) rs.1000
29. By selling an article for rs.1,648 a man loss 20% . for how much should he sell to gain 30%.  
 1) rs.2762            2) rs.2678    3) rs.2060    4) rs.2260
30. By selling an article for rs.2560 a man loss 20% . for how much should he sell to gain 5%.  
 1) rs.3400            2) rs.4030    3) rs.3040    4) rs.3000
31. By selling an article for rs.3696 a man loss 20% . for how much should he sell to gain 30%.  
 1) rs.4000            2) rs.4030    3) rs.3040    4) rs.4004
32. By selling an article for rs.1760 a man loss 10% . for how much should he sell to gain 25%.  
 1) rs.2000            2) rs.2010    3) rs.2060    4) rs.2050
33. By selling an article for rs.3570 a man loss 15%. how much did he sell the article to get no gain no loss?  
 1) rs.2400            2) rs.4200    3) rs.4000    4) rs.3950

34. By selling an article for rs.1365 a man loss 30%. how much did he sell the article to get no gain no loss?  
1) rs.1500      2) rs.1050    3) rs.1005 4) rs.1000
35. I sold a book at a profit of 7% had sold it for rs. 750 more 22% would have been gained. Find the C.P of the book ?  
1) rs.6000      2) rs.5000    3) rs.500 4) rs.5500
36. A watch sold at a loss of 10% if it was rs.140 there would have been gain of 4% .what is the C.P ?  
1) rs.1000      2) rs.1140 3) rs.860 4) rs.760
37. the c.p of 10 pens equal to the s.p of 12 pens. Find his gain % or loss %.  
1) 16 2/3%      2) 50/6%    3) 16 2/3% 4) 100/3%
38. The C.P of 15 books is equal to the S.P of 18 books find his g % or loss%?  
1) 16 2/3%      2) 100/3% loss  
3) 50/3%      4) 100/3% loss
- 39.The C.P of 15 books is equal to the S.P of 12 pens find his g % or loss%?  
1) 50% profit    2) 25% profit  
3) 25% loss      4) 75% loss
41. A reeducation of 40% in the bananas would enable a man to obtain 5 kegs. More for rs.800. what is the reduced price per dozen?  
1) rs.5    2) rs.4    3) rs.2    4) rs.3
42. A reeducation of 25% in the price oil enable a house wife obtain 5 kegs. More for rs.800. what is the reduced price per kg?  
1) rs.20 2) rs.30    3) rs.40      4) rs.25
43. A reeducation of 20% in the price of salt enable a lady to obtain 10 kegs. More for rs.100. find the original price per kg.?  
1) rs.2 3/2      2) rs.2 1/2      3) rs.2    4) rs.3
44. A man busy two articles for rs.1980 each and he gains 10% on the first and loses 10% on the next. Find his total gain or loss ?  
1) 1% gain      2) 1% loss 3) 10% loss    4) no gain or no loss.
45. A man sells two articles for rs.1980 each and he gains 10% on the first and loses 10% on the next. Find his total gain or loss ?  
1) 1% gain      2) 1% loss    3) 10% loss    4) no gain or no loss.
46. A man sells two articles for rs.3519 each and he gains 15% on the first and loses 15% on the next. Find his total gain or loss ?  
1) 2.25% gain      2) 2.25% loss  
3) 22.5% loss      4) no gain no loss
47. A man sells two articles for rs.3600 each and he gains 30% on the first and loses 30% on the next. Find his total gain or loss ?  
1) 9% loss      2) rs.400      3) rsa.4000    4) rs.324
48. A man sells two articles for rs.1000 each and he gains 25% on the first and loses 20% on the next. Find how much does he gain or loss in the whole transaction ?  
1) 2 18/41% loss 2) 2 18/41% gain      3) 3% gain      4) 3% loss
49. I bought two books for rs.480. I sold one at a loss of 15% and the other at gain of 19% and then I found each book was sold at a the same price. Find the cost of the book sold at a loss?  
1) rs.28 2) rs.280      3) rs.140      4) rs.70
50. I buy 2 tables for rs1350 I sell one so as to lose 6% and the other so as to gain 7.5%. on the whole I neither lose nor gain. What did each table cost?  
1) rs.675 each    2) rs.800 and 550    3) rs.700 and 650      4) rs,750 and 600



# AVERAGES

1. The temperatures of the weekdays of a certain week starting from Sunday are respectively  $20^{\circ}\text{C}$ ,  $22^{\circ}\text{C}$ ,  $25^{\circ}\text{C}$ ,  $17^{\circ}\text{C}$  and  $24^{\circ}\text{C}$  for the first five days. If the temperatures of the next two days are the same, and the sum of the temperatures of all the seven days of the week is  $160^{\circ}\text{C}$ , then find the temperature on Saturday.

- (1)  $25^{\circ}\text{C}$  (2)  $26^{\circ}\text{C}$  (3)  $28^{\circ}\text{C}$  (4)  $32^{\circ}\text{C}$

2. In a town during a certain week, every day there was a  $1^{\circ}\text{C}$ , increase in temperature over the previous day. If the average temperature for the first and last days (i.e., Monday and Sunday) was  $39^{\circ}\text{C}$ , what was the average for Monday, Tuesday and Wednesday?

- (1)  $36^{\circ}\text{C}$  (2)  $34^{\circ}\text{C}$  (3)  $38^{\circ}\text{C}$  (4)  $37^{\circ}\text{C}$

3. Rahul ate 15 chocolates on Monday, 11 on Tuesday, a certain number of chocolates on Wednesday, 18 on Thursday and 16 on Friday. If the average number of chocolates eaten per day on Thursday and Friday is equal to that on Monday, Tuesday and Wednesday, find the number of chocolates that Rahul ate on Wednesday.

- (1) 17 (2) 20 (3) 22 (4) 25

4. The average runs scored by a batsman who has played 52 innings, was increased by one after an innings of 126. Find the average runs of the batsman before this innings.

- (1) 71 (2) 73 (3) 74 (4) 58

5. The average age of a class of 22 students is 22 years. If a new student, whose age is 22 years joins the class, find the new average age of the class (in years).

- (1) 20 (2) 21 (3) 22 (4) 23

6. The average age of a group went up by 2 years when a man aged 34 years was replaced by an old man aged 58 years. How many members were there in the group?

- (1) 10 (2) 18 (3) 14 (4) 12

7. The average age of 30 students of a class is 16 years. If the age of the teacher is also included, the average increases by 1 year. Find the age of the teacher. (in years)

- (1) 47 (2) 44 (3) 42 (4) None of these

8. The average marks of the boys and the girls in a class are 30 and 40 respectively. Find the average marks of all the students in the class.

- (1) 30 (2) 35  
(3) 40 (4) cannot be determined

9. In an office, the average height of female employees is 150 cm and the average height of male employees is 160 cm. If there are 400 employees in the office, find the average height (in cm) of all the employees.

- (1) 150 (2) 160  
(3) 155 (4) cannot be determined

10. The average marks scored by Monika in five out of six subjects in an exam is 60. If Monika scores an average of 75 marks in the six subjects, find his score in the sixth subject.

- (1) 100 (2) 125 (3) 150 (4) 90

11. The ratio of the number of boys to the number of girls in a class is 4 : 5. If the average number of boys and the girls who got jobs in the class are 20 and 29 respectively, find the average number of the total students who got jobs in the class.

- (1) 26 (2) 25  
(3) 22 (4) cannot be determined

12. The average number of notebooks with six children is six. If another child joined them the average number of notebooks with the seven children will become 7. Find the number of notebooks with the seventh child.

- (1) 11 (2) 12 (3) 13 (4) 14

13. In a class, two students aged 16 years and 18 years are replaced by two students whose ages are 19 years and 21 years. If the average age of the class increased by 3 months, how many students are there in the class?

- (1) 20 (2) 24 (3) 32 (4) 40

14. In a hockey tournament the average number of goals scored by India in the first six matches was 2 while that in the last six matches was 4. If 3 goals were scored in the sixth match, find the average number of goals scored by India in the tournament if a total of 11 matches were played.

- (1) 2 (2) 3 (3) 4 (4) None of these

15. The average age of a family of five members is the same today as it was five years ago. There is no change in the family, except the elder daughter being replaced by the daughter-in-law. If the age of the elder daughter is 48 years, how old is the daughter-in-law? (in years)

- (1) 20 (2) 23 (3) 24 (4) 26

16. The average weight of certain number of boys in a group is 30 kg. If 5 boys with an average weight of 12 kg join the group, the average weight would be the same as if 5 boys with an average weight of 36 kg leave the group. Find the number of boys in the group.

- (1) 15 (2) 20 (3) 25 (4) 10

17. Sixteen men went to a hotel. Fifteen of them paid Rs.80 each and the sixteenth man paid Rs.75 more than the average of all the sixteen men. Find the total bill.

- (1) Rs.1020 (2) Rs.1280  
(3) Rs.1360 (4) Cannot be determined

18. A vessel contains 35 litres of a mixture of milk and water containing 60% milk. 5 litres of pure milk is added to it. Find the percentage of milk in the new mixture.

- (1) 50% (2) 55% (3) 68% (4) 65%

19. A vessel contains 25 litres of a mixture of milk and water containing 40% milk. Find the quantity (in litres) of pure milk to be added to the vessel so that the quantity of milk and water in the vessel becomes equal.

- (1) 2.5 (2) 5 (3) 7.5 (4) 10

20. A milkman has 30 litres of pure milk. Find the quantity (in litres) of water to be added to it so that he gets 60% profit by selling it at its cost price.

- (1) 12 (2) 18 (3) 15 (4) 20

21. A vessel contains 10 litres of pure milk. 1 litre of milk is taken out and replaced by an equal amount of water. 1 litre of mixture is then taken out and replaced by an equal amount of water. Find the final quantity of milk (in litres).

- (1) 9 (2) 8.1 (3) 7.29 (4) None of these

22. A total of 57 pens were distributed among 10 children such that each girl gets 5 pens and each boy gets 6 pens. Find the number of girls.

- (1) 6 (2) 5 (3) 4 (4) 3

23. 6 kg of wheat costing Rs.10 per kg is added to 9 kg of wheat costing Rs.15 per kg. At what price (in Rs.) should this mixture be sold so that there is no loss or gain?

- (1) 11 (2) 12 (3) 13 (4) 14

24. How many litres of water should be added to 25 litres of milk costing Rs.12 per litre, so that by selling the mixture at the cost price, profit of 20% is made?

- (1) 2 litres (2) 5 litres (3) 8 litres (4) 10 litres

25. Two varieties of rice are mixed in the ratio 2 : 5 and the mixture sold at Rs.12 at a profit of 20%. If the first variety costs Rs.7 more than the second variety, find the cost of the first variety.  
 (1) Rs.7 (2) Rs.15  
 (3) Rs.16 (4) None of these
26. Two vessels contain water and alcohol in the ratio 1 : 2 and 3 : 4. The two solutions are then mixed by taking 6 litres from the first vessel and 35 litres from the second. Find the ratio of alcohol to water in the resulting solution.  
 (1) 15 : 22 (2) 22 : 15 (3) 24 : 17 (4) 17 : 24
27. Fresh grapes contain 84% water while raisins contain 20% water. How many kg of raisin can be made from 80 kg of grapes?  
 (1) 16 kg (2) 18 kg (3) 20 kg (4) 22 kg
28. Two containers contain petrol and diesel in the ratio 4 : 3 and 3 : 1. How many litres from the first container should be mixed with 16 litres from the second so that the new ratio becomes 32 : 19?  
 (1) 35 litres (2) 40 litres  
 (3) 50 litres (4) None of these
29. A milkman dilutes 36 litres of pure milk with water. The percentage of milk in the solution is now 75%. How many litres of water did he add?  
 (1) 4 litres (2) 6 litres (3) 9 litres (4) 12 litres
30. How many litres of water should a milkman add to 35 litres of milk costing Rs.560, so that by selling the milk at Rs.14 per litre, he recovers his cost?  
 (1) 2 litres (2) 5 litres  
 (3) 7 litres (4) 10 litres
31. Out of 64 students ECE, the average of marks obtained is 88. If the top 10 students got, on an average, 142 marks, find the average of marks obtained by the remaining students.  
 (1) 80 (2) 78 (3) 74 (4) 66
32. Two vessels have petrol, diesel and kerosene mixed in the ratio 1 : 2 : 4 and 3 : 5 : 6. If the quantities in the two vessels are mixed in the ratio 1 : 1, what is the ratio of petrol, diesel and kerosene in the resultant mixture?  
 (1) 5 : 9 : 14 (2) 3 : 6 : 8  
 (3) 4 : 8 : 11 (4) 4 : 7 : 10
33. Vessel P contains 5 litres of milk and vessel Q contains 5 litres of water. One litre of milk is taken from P and is poured into Q. One litre of the mixture in Q is then poured into P. If the present quantities of milk in Q and water in P are VM and VW respectively, then which of the following holds true?  
 (1)  $VM > VW$  (2)  $VM = VW$   
 (3)  $VM < VW$  (4) Cannot be determined
34. A milkman bought 10 litres of pure milk at Rs.10/litre and 10 litres of adulterated milk at Rs.6/litre. He mixed both and sold the mixture at Rs.10 / litre. Find his profit percentage.  
 (1) 20% (2) 15% (3) 25% (4) 30%
35. There are two containers with mixtures of Pepsi and Coke. In container 1, they are in the ratio of 3 : 2 and in container 2 they are in the ratio of 2 : 3. How many litres of the mixture should be taken from container 1 and mixed with an appropriate quantity of the mixture from container 2 in order to make 20 litres of a mixture containing Pepsi and Coke in the ratio 9 : 11?  
 (1) 10 (2) 15 (3) 20 (4) 5
36. A shopkeeper mixes three varieties of rice costing Rs.10, Rs.12 and Rs.17 per kg. Which of the following represents the ratio in which the three varieties are mixed, if the trader makes a profit of 20% by selling the mixture at Rs.15.60 per kg?  
 (1) 9 : 14 : 36 (2) 11 : 14 : 25  
 (3) 14 : 36 : 43 (4) 2 : 6 : 3

37. In fresh grapes, 80% of the weight is water while in dry grapes only 50% of the weight is water. How many kgs of dry grapes can be obtained from 20 kg of fresh grapes?

- (1) 3 kg (2) 12 kg (3) 1 kg (4) 8 kg

38. In what ratio should a shopkeeper mix tea costing Rs.120 per kg and Rs.180 per kg so that by selling it at Rs.205 per kg, he earns a profit of 25%?

- (1) 2 : 5 (2) 3 : 7 (3) 3 : 8 (4) 4 : 11

39. Two vessels contain petrol and kerosene in the ratio 2 : 5 and 4 : 3. In what ratio should the solutions in the first vessel be mixed with the solutions in the second, so as to get a solution with petrol and kerosene in the ratio 3 : 4?

- (1) 1 : 1 (2) 1 : 2 (3) 2 : 5 (4) 3 : 5

40. If two kinds of grapes which cost Rs.22 a kg and Rs.27 a kg are mixed in the ratio of 3 : 2, then find the cost of the mixture per kg.

- (1) 24.50 (2) 23 (3) 24 (4) 25

# ALLIGATIONS/MIXTURE

1. 6 kilograms rice rs.6 per k. and 4kgs of rice at rs.7per kg are mixed together and the mixture is sold at 10% profit. What is the selling price of the mixture per kg.  
1) rs.7.04    2) rs.7.40    3) rs.7.00    4) rs.7.70
2. to 5 lit of 20% acid, 5 lit of 100% pure acid is added. What is the strength of the acid in the mixture?  
1) 50%    2) 60%    3) 40%    4) 80%
3. alcohol cost rs.3.50 per lit and kerosene oil cost rs.2.50 per lit. n what proportion these should be mixed so that resulting mixture may be rs.2.75?  
1) 1:22) 2:3    3) 1:3    4) 2:3
4. in what proportion must rice at rs.6.20 per kg be mixed with rice rs.7.20 per kg, so that the mixture be worth rs.6.50 a kg?  
1) 2:52) 6:4    3) 7:3    4) 3:7
5. metal a is 12 times as heavy as copper and another metal b is 16 times as heavy as copper. In what ratio a & b shield be mixed so that the resulting mixture be 15 times as heavy as copper  
1) 3:12) 1:3    3) 2:3    4) 3:2
6. how much chicory at rs.4kg should be added to 15kg. of tea rs.10a kg , so that the mixture may worth rs.6.50 a kg?  
1) 21kg    2) 15kg    3) 35kg    4) 12kg
7. they are some rabbits & pigeons in a zoo. If heads are counted there are 400, while their legs are 1160. how many pigeons are there?  
1) 180    2) 220    3) 240    4) 210
8. a mixture of 40 lit of milk and water contains 10% of water. How much water must be added to make 20% in the mixture?  
1) 4l    2) 5l    3) 8l    4) 6l
9. Ravi covers a journey of 180km. in 4 hours. He covered first part by bus at 30 km and the rest by train at 60km. how many km did he cover by bus?  
1) 60    2) 120    3) 80    4) 100
10. Ravi travels 240km in 9 hours in two stages. He covered first part by bus at 20km and the rest by train 30km how much did he travels by train.  
1) 60km    2) 180km    3) 150km    4) 120m
11. 125 lit of mixture of wine and water contains 20% water. How much water must be added to it to make water 25% of the new mixture?  
1) 8 1/3    2) 9 l    3) 8 l    4) 100 l
12. a trades man purchases 2 types of sugar at the rate of rs.5 per kg and rs.4 per kg. in what ratio should he mix them to get a profit of 19% by selling the mixture at the rate of rs.5 per kg.  
1) 5:62) 6:5    3) 3:4    4) 4:5
13. a man lead rs.1200 for 3 years. A part he lends at 4% and the rest obtains rs.192 as interest. How much money did he lend at each rate?  
1) Rs.400 & 800    2) rs.500 & 600    3) rs.600 each    4) rs.750 & 450
14. a man has rs.200, part of which he lent at 5% and the rest at 4%. The whole annual interest received was rs.92. How much must did he lend at 5%.  
1) Rs.800    2) rs.1200    3) rs.1600    4) rs.1000

15. a mixture of 70 lit of wine and water contains 10% of water. How much water must be added to make 12.5% of the resulting mixture?
16. A sum of rs.25 is made of 80 cons which are either 10p or 5p coins. How many coins are there of 10p  
1) 35 2) 40 3) 45 4) 50
17. rs. 49.25 were divided among 150 children. Each boy gets 50 paisa & each girl gets 25p. How, many boys are there?  
1) 103 2) 47 3) 97 4) 53
18. in what proportion must water be added with spirit to gain 12 1/2% by selling it at the cost price  
1) 8:12 2) 1:4 3) 1;\* 4) 2:6
19. in what proportion must water be added with spirit to gain 16 2/3% by selling it at the cost price.  
1) 2:32 2) 3:2 3) 1:6 4) 6:1
20. Milk and water mixed a vessel a in the proportion of 5:2 and the vessel b in the proportion of 8:5 in what preparation should quantities be taken from the 2 vessels so as to form a mixture in which milk and water be in the proportion of 9:4?  
1) 2:72 2) 7:2 3) 3:7 4) 7:3
21. a vessel is filled with a liquid in which 5 parts are milk & 3 parts are water. How much of mixture must be drawn off and replaced with water so that the mixture may be half water and milk  
1) 1/4 2) 1/3 3) 1/5 4) 1/5
22. a cask contains 3 parts honey and one part of sugar syrup. How much of the mixture must be drawn off and sugar syrup substituted in order that the resulting mixture may be half and half.  
1) 1/3 2) 1/4 3) 1/5 4) 2/5
23. if 2kgs of metal of which 1/3 is zinc and the rest be mixed with 3kgs of metal of which 1/4 is zinc and the rest copper. What is the ratio of zinc to copper in the mixture?  
1) 17:43 2) 43:17 3) 3:7 4) 27:43
24. 3 equal glasses are filled with a mixture of milk & water. The proportion of spirit to water in the first glass as 1:2 in the second as 2:3 and the third as 3:4 the contents of 3 glasses are emptied a single vessel. That is proportion of milk and water in to it?  
1) 122:293 2) 121:193 3) 193:122 4) 122:193
25. from a cask of milk containing 50 lit 6 1/4 lit are drawn out and the cask is filled up with water. If the same process is repeated once again, what will the number be of lit. of milk left in the cask?  
1) 43 3/4 l 2) 42 1/2 l 3) 38 9/32 l 4) 38 7/22 l
26. 9 lit are drawn from a cask full of wine and it is then filled with water. 9 lit of mixture are drawn and the cask is again filled with water. The quantity of wine now left in the cask is so that of the water it is 16:9. How much does the cask hold?  
1) 40 l 2) 42 l 3) 50 l 4) 45 l

# TIME, SPEED & DISTANCE

- Express a speed of 54 km/hr in meters/second.  
a)15 m/sec      b)20 m/sec  
c)25 m/sec      d)30 m/sec
- A car can cover 350 km in 4 hours.If the speed is decreased by  $12\frac{1}{2}$  kmph,how much time does the car take to cover a distance of 450 km?  
a)4 hrs    b)5 hrs    c)2 hrs    d)6 hrs
- A person covers a certain distance at a certain speed.If he increaseshis speed by 25 % then he takes 12 minutes less to cover the same distance. Find the time taken by him initially to cover the distance at the original speed  
a)3 hrs    b)2 hrs    c)1 hr    d)7 hrs
- A car covers a certain distance going at a speed of 60 kmph and returns to the starting point at a speed of 40 kmph.Find the average speed for the whole journey.  
a)48 kmph      b)42 kmph  
c)34 kmph      d)40 kmph
- What is the time taken by a train running at 54 km/hr to cross a man standing on a platform, the length of the train being 180 m?  
a)6 sec    b)12 sec    c)16 sec    d)18 sec
- How long will a train 100 m long and travelling at a speed of 45 kmph,take to corss a platform of length 150 m?  
a)20 sec      b)29 sec  
c)27 sec      d)cannot be determined
- Find the length of the bridge,which a train 120 m long travelling at 54 kmph can cross in 30 seconds.  
a)340 m    b)350 m    c)330 m    d)390 m
- A worker reaches his work place 15 minutes late by walking at 4kmph from his house.The next day he increases his speed by 2kmph and reaches in time.Find the distance from his house to his work place  
a)2 km    b)6 km    c)8 km    d)3 km
- A person leaves his house and travelling at 4 kmph reaches his office 10 minutes late.Had he travelled at 7kmph he would have been 20 mins early.Find the distance from the house to the office?  
a)14/3    b)2    c)14/9    d)14/6
- Find the time taken by a train 150 m long running at a speed of 63 kmph to cross another trainof length 100 m long running at a speed of 45 kmph in the same direction  
a)25 seconds      b)50 seconds  
c)75 seconds      d)100 seconds
- A train crosses two persons,cycling in the same direction as the train in 12 and 18 seconds respectively.If the speeds of the two cyclists are 9 and 18 kmph respectively.Find the length and speed of the train.  
a)80 m    b)89 m    c)98 m    d)90 m
- Two trains running at 45 and 54 kmph cross each other in 12 seconds when they run in opposite directions.When they run in the same direction,a person in the faster train observes that he crossed the other train in 32 seconds.Find the lengths of the two trains  
a)250    b)450    c)260    d)234

13. Two trains of length 150 m and 250m run on parallel lines. When they run in the same direction it will take 20 seconds to cross each other and when they run in opposite direction it will take 5 seconds. Find the speeds of the two trains.  
a) 180 and 108      b) 272 and 211  
c) 123 and 828      d) none of these
14. The average speed for an entire journey is 60 kmph without considering the stoppages. When the stoppages are considered the average speed becomes 48 kmph. How many minutes per hour on an average were the stoppages?  
a) 10 mins   b) 12 mins   c) 16 mins   d) none of these
15. I had to catch a bus which was 225 m ahead of me. The bus also started at the same time. If the speed of the bus was 2.5 m/sec and my speed was 36 kmph, in how much time can I catch the bus?  
a) 20 sec   b) 25 sec   c) 30 sec   d) 40 sec
16. The distance from my house to my friend's house is 12 km. I walked at a speed of 4 kmph and after every kilometre took rest for 10 mins. How much time did it take for me to reach my friend's house?  
a) 3 hrs      b) 4 hrs and 50 mins  
c) 5 hrs      d) none of these
17. A train covered a distance of 250 km, partly at an average speed of 40 kmph and partly at 60 kmph. Find the distance covered at 40 kmph if it took 5 hrs for the train to cover the distance.  
a) 150 km      b) 120 km  
c) 100 km      d) cannot be determined
18. A bus covered a distance of 160 km in 4 hrs covering a part of it at 30 kmph and the remaining at 70 kmph. For how much time did the bus travel at 70 kmph?  
a) 0.5 hr   b) 1 hr      c) 1 1/2 hrs      d) 2 hrs
19. A car takes 2 hours more to cover a distance of 480 km when its speed is reduced by 8 kmph. Find its usual speed.  
a) 48 kmph      b) 55 kmph  
c) 60 kmph      d) 64 kmph
20. A person covered the first 40 km of his journey at 50 kmph, the next 70 km at 35 kmph and the remaining distance in 12 mins. If the average speed of the entire journey is 52 kmph. Find the distance covered in the last stretch of the journey.  
a) 22 km   b) 34 km   c) 40 km   d) 46 km
21. A train takes 10 seconds to cross a man standing on a platform and 44 seconds to cross the platform. What is the length of the platform? What is the length of the platform if the speed of the train is 72 kmph?  
a) 440 m   b) 570 m   c) 680 m   d) none of these
22. A train travelling at 36 kmph takes 48 seconds to cross a bridge. It then crosses a man cycling at the rate of 9 kmph in the same direction in 20 seconds. Find the length of the bridge.  
a) 150 m   b) 220 m   c) 280 m   d) 330 m
23. A train crosses two bridges 370 m and 480 m long in 51 and 62 seconds respectively. Find the speed of the train.  
a) 24 kmph      b) 36 kmph  
c) 45 kmph      d) 64 kmph
24. A man started 15 minutes late and by travelling at a speed which is 5/4th of his usual speed reached his office 20 mins early. What is the usual time of the journey?  
a) 85 mins      b) 100 mins  
c) 135 mins      d) 175 mins
25. A parachutist, before he opens his parachute, falls for a time  $t_1$ , and covers a distance of  $5t_1^2$  and after he opens his parachute he falls for a time  $t_2$  and covers a distance  $Vt_2^2$ .  $V$  is the velocity attained just before the parachute is opened and is given by  $5t_1$ . After what time did he open the



parachute, if the total distance covered by the parachutist is 1500m and the total time is 30 seconds?

- a)10 seconds                      b)20 seconds  
c)18 seconds                      d)12 seconds

26. Akash, Anurag and Rishab are running around a circular track of length 900 m with respective speeds of 15 m/s, 20 m/s and 30 m/sec. Akash and Anurag are running in the same direction while Rishab is running in the opposite direction. After how much time will all the three of them meet for the first time?  
a)20 seconds                      b)60 seconds  
c)120 seconds                      d)180 seconds
27. A police patrol party travelling at 60 kmph crosses an escaping thief travelling in the opposite direction at 48 kmph. The police party has to travel for a further 5 minutes before it can find a gap in the median where it can take a U turn and start chasing the thief. After how much time after the police party crosses the thief does it catch him?  
a)25 mins b)50 mins c)15 mins d)32 mins
28. In a 1000 m race A reaches the goal 5 seconds earlier and beats B by 50 m. What is A's speed?  
a)10 m/s                              b)10 10/19 m/s  
c)9 9/19 m/s                      d)11 9/19 m/s
29. Two points A and B are diametrically opposite points on a circular road of circumference 12 km. A cyclist started from A and made three rounds. He made the first round with a speed of 12 kmph and decreased his speed by 3 kmph for every round. What is the interval between the first time he passes through B and the third time he passes through B?  
a)200 mins                          b)100 mins  
c)85 mins                              d)170 mins
30. Two men left simultaneously two places A and B. One of them left A for B while the other left B for A. Both travel each at his own uniform velocity. The first person on reaching B returns to A and then again travels back to B and so on. What will be the distance covered by the first person when they meet for the third time given the ratio of the speed of the first person to that of the second person is 3:2 the distance between A and B is 500 m?  
a)1000 m b)1500 m c)2500 m d)1200 m
31. A person takes 6 hours to go by car to a certain place and return by bus. He gains 2 hrs if he goes both ways by car. How long would he have taken if he had gone by bus both ways?  
a)4 hrs    b)6 hrs    c)8 hrs    d)2 hrs
32. Car A and car B are travelling on two perpendicular roads towards city C with equal speeds. Car A starts from a distance of 100 km at 11 a.m while car B starts from a distance of 70 km at 12 noon. At 2 p.m the two cars are 50 km apart. What is the speed with which they are travelling?  
a)25 kmph                          b)20 kmph  
c)30 kmph                          d)15 kmph
33. Two trains of length 200 m and 100 m simultaneously enter a tunnel of length 300m from opposite ends at the same time on parallel tracks. The respective speeds of the two trains are 36 kmph and 18 kmph. After how much time from the instant the two trains entered the tunnel will the tunnel be free of traffic again?  
a)40 sec    b)30 sec    c)120 sec d)80 sec
34. Rajat had covered one third of the total distance of his trip when his scooter failed. He then parked it and covered the remaining distance on foot, spending 20 times as long walking as riding. How many times was his riding speed more than his walking speed?  
a)20                      b)19                      c)10                      d)9
35. Ashish and Bali run towards each other from P and Q respectively with respective speeds of 36 kmph and 45 kmph. After meeting each other if Ashish reaches Q in 5 hours, in how many hours will Bali reach P?  
a)3                      b)3 1/5    c)4                      d)8

36. A train of length 180 m travelling at 72 kmph overtook a mortorcyclist travelling at 36 kmph at 4 p.m. At 5 p.m it overtook another cyclist travelling in the opposite direction at a speed of 18 kmph. When will the cyclist meet the motorcyclist?  
 a) 1 hr 20 mins      b) 1 hr 30 min  
 c) 1 hr 45 min      d) none of the above
37. Two men left simulataneously two places A and B. one of them left A for B and the other B for A. Both travelled each with his own uniform velocity. Having arrived at their destination, they turned back without stopping and turned back to their starting points. First time, they met on their own jouney 18 km from B; the second time on their return journey 9 km from A. Find the distance AB.  
 a) 30 km      b) 45 km  
 c) 60 km      d) cannot be determined
38. A car travels a total distance of 150 km. After travelling a part of the distance without any trouble, the car develops an engine problem and proceeds at  $\frac{2}{3}$ rd of its former speed and arrives at the destination 48 mins late. Had the problem developed 24 km furthur on, the car would have arrived 12 min sooner. Find the original distance it travelled without any problem and the speed over that part of the journey.  
 a) 100km, 60 kmph      b) 48km, 36kmph  
 c) 72km, 50kmph      d) 54km, 60 kmph
39. Two cyclists simulatanueously start from A to B and B to A respectively. They cross each other after a time  $t$  hours. The first person reaches B in another  $t_1$  hours while the second person reaches A in another  $t_2$  hours. Then  
 a)  $t = \frac{t_1 + t_2}{2}$       b)  $t = \frac{2t_1 t_2}{t_1 + t_2}$   
 c)  $t = \sqrt{t_1 t_2}$       d)  $t = \frac{t_2 - t_1}{2}$
40. Ramu starts from P towards Q at a speed of 30kmph and after every 12 min increase his speed by 5 kmph. If the distance between P and Q is 52 km, then how much time does he take to cover the distance?  
 a) 60 min      b) 72 min      c) 90 min      d) 120 min

# TRAINS

1. A train 100 m long is running at a speed of 30 kmph. Find the time taken by it to pass a man standing near the railway line  
a) 12 sec   b) 13 sec   c) 14 sec   d) 15 sec
2. Two trains 100 m and 120 m long are running in the same direction with speeds of 72 kmph and 54 kmph. In how much time will the first train cross the second?  
a) 40 sec   b) 44 sec   c) 72 sec   d) 30 sec
3. How long does a train 110 m long running at a speed of 72 kmph take to cross a bridge 132 m in length?  
a) 9.8 sec   b) 12.1 sec   c) 12.42 sec   d) 14.3 sec
4. A train travelling at a speed of 75 mph enters a tunnel  $3\frac{1}{2}$  miles long. The train is  $\frac{1}{4}$  mile long. How long does it take for the train to pass through the tunnel from the moment the front enters to the moment the rear emerges?  
a) 2.5 min   b) 3 min   c) 3.2 min   d) 3.5 min
5. A train speeds past a pole in 15 seconds and a platform 100 m long in 25 seconds. Its length is  
a) 50 m   b) 150 m   c) 200 m   d) data inadequate
6. A train passes a station platform in 36 seconds and a man standing on the platform in 20 seconds. If the speed of the train is 54 kmph, what is the length of the platform?  
a) 120 m   b) 240 m   c) 300 m   d) none of these
7. Two trains are running in opposite directions with the same speed. If the length of each train is 120 m and they cross each other in 12 seconds, then the speed of each train is  
a) 10   b) 18   c) 36   d) 72
8. A 270 m long train running at the speed of 120 kmph crosses another train running in opposite direction at the speed of 80 kmph in 9 seconds. What is the length of the other train?  
a) 230 m   b) 240 m   c) 260 m   d) 320 m
9. A 300 m long train crosses a platform in 39 seconds while it crosses a signal pole in 18 seconds. What is the length of the platform?  
a) 320 m   b) 350 m   c) 650 m   d) none of these
10. A train crosses a platform 100 m long in 60 seconds at a speed of 45 kmph. The time taken by the train to cross an electric pole is  
a) 8 sec   b) 52 sec  
c) 1 minute   d) data inadequate
11. Two trains of equal length are running on parallel lines in the same direction at 46 kmph and 36 kmph respectively. The faster train passes the slower train in 36 sec. The length of each train is  
a) 50 m   b) 72   c) 80   d) 82
12. A train of length 150 m takes 40.5 seconds to cross a tunnel of length 300 metres. What is the speed of the train in kmph?  
a) 13.33   b) 26.67   c) 40   d) 66.67
13. Two goods trains each 500 m long are running in opposite directions on parallel tracks. Their speeds are 45 kmph and 30 kmph respectively. Find the time taken by the slower train to pass the driver of the first one  
a) 12 sec   b) 24 sec   c) 48 sec   d) 60 sec
14. Two trains one from Howrah to Patna and the other from Patna to Howrah, start simultaneously. After they meet, the trains reach their destinations after 9 hours and 16 hours respectively. The ratio of their speeds is

a)2:3    b)4:3    c)6:7    d)9:16

15. The length of a train and that of a platform are equal.If with a speed of 90 kmph the train crosses the platform in one minute,then the length of the train in metres is  
a)500    b)600    c)750    d)900
16. A train 110 m long passes a man,running at 6 kmph in the direction opposite to that of the train,in 6 seconds.The speed of the train is  
a)54 kmph                      b)60 kmph  
c)66 kmph                      d)72 kmph
17. A train X starts from Meerut at 4 p.m and reaches Ghaziabad at 5 p.m while another train Y starts from Ghaziabad at 4 p.m and reaches Meerut at 5:30 p.m.The two trains will cross each other at:  
a)4:36 p.m                      b)4:42 p.m  
c)4:48 p.m                      d)4:50 p.m
18. A goods train runs at a speed of 72 kmph and crosses a 250 m long platform in 26 seconds. What is the length of the goods train?  
a)230 m    b)240 m    c)260 m    d)270 m
19. A train 120 m long passes a man,runnin at 5 kmph in the same direction in which the train is going,in 10 seconds.The speed of the train is (inj kmph)  
a)45        b)50        c)54        d)55
20. Two stations A and B are 110 km apart on a straight line.One train starts from A at 7 a.m and travels towards B at 20 kmph.Another train starts from B at 8 a.m and travels towards A at a speed of 25 kmph.At what time will they meet?  
a)9 a.m    b)10 a.m    c)10:30 a.m                      d)11 a.m
21. A train 800 m long is running at a speed of 78 kmph.If it crosses a tunnel in 1 minute, then the length of the tunnel(in meters) is  
a)130    b)360    c)500    d)540
22. Two trains are moving in opposite direction @ 60 kmph and 90 kmph.Their lengths are 1.10 km and 0.9 km respectively.The time taken by the slower train to cross the faster train in seconds is  
a)36        b)45        c)48        d)49
23. Two trains running in opposite directions cross a man standing on the platform in 27 seconds and 17 seconds respectively and they cross each other in 23 seconds.The ratio of their speeds is  
a)1:3        b)3:2        c)3:4        d)none of these
24. A train travellin 48 kmph completely crosses another train having half its length and travelling in opposite direction at 4 kmph,in 12 seconds.It also passes a railway platform in 45 seconds.The length of the platform is  
a)400 m    b)450 m    c)560 m    d)600 m
25. The length of the bridge , which a train 130 m long and travelling at 45 kmph can cross in 30 seconds is  
a)200 m    b)225 m    c)245 m    d)250 m
26. A train 110 m long is runnig with a speed of 60 kmph .In what time will it pass a man who is running at 6 kmph in the direction opposite to that in which the train is going?  
a)5 sec    b)6 sec    c)7 sec    d)10 sec
27. A jogger running at 9 kmph alongside a railway track is 240 m ahead of the engine of a 120m long train running at 45 kmph in the same direction.In how much time will the train pass the jogger?  
a)3.6 sec    b)18 sec    c)36 sec    d)72 sec
28. Two trains of equal length take 10 seconds and 15 seconds respectively to cross a telegraph post.If the length of each train be 120 m,in what time(in seconds)will they cross each other travelling in opposite direction

- a)10      b)12      c)15      d)20
29. A train 108 m long moving at a speed of 50 kmph crosses a train 112 m long coming from opp direction in 6 seconds. The speed of the second train is (in kmph)  
a)48      b)54      c)66      d)22
30. A train moves past a telegraph post and a bridge 264m long in 8 seconds and 20 seconds respectively. What is the speed of the train?(in kmph)  
a)69.5      b)70      c)79      d)79.2
31. A train X speeding with 120 kmph crosses another train Y, running in the same direction, in 2 min. If the lengths of the trains X and Y be 100 m and 200 m respectively. What is the speed of train Y?(in kmph)  
a)111      b)123      c)127      d)129
32. Two trains travel in opposite directions at 36 kmph and 45 kmph and a man sitting in slower train passes the faster train in 8 seconds. The length of the faster train is  
a)80 m      b)100 m      c)120 m      d)180 m
33. A train takes 18 seconds to pass completely through a station 162 m long and 15 seconds through another station 120 m long. The length of the train is  
a)70 m      b)80 m      c)90 m      d)100m
34. Two trains are running at 40 kmph and 20 kmph respectively in the same direction. Fast train completely passes a man sitting in the slower train in 5 seconds. What is the length of the fast train?  
a)23 m      b) $23\frac{2}{9}$  m      c)27m      d) $27\frac{7}{9}$ m
35. A train overtakes two persons who are walking in the same direction in which the train is going, at the rate of 2 kmph and 4 kmph and passes them completely in 9 and 10 seconds respectively. The length of the train is  
a)45 m      b)50m      c)54 m      d)72 m
36. How many seconds will a 500 m long train take to cross a man walking with a speed of 3 kmph in the direction of the moving train if the speed of the train is 63 kmph  
a)25      b)30      c)40      d)45
37. A train 360 m long is running at a speed of 45 kmph. In what time will it pass a bridge 140 m long?  
a)40 sec      b)42 sec      c)45 sec      d)48 sec
38. A train running at a speed of 60 kmph crosses a pole in 9 seconds. What is the length of the train?  
a)120 m      b)180 m  
c)cannot be determined      d)none of these
39. Two trains each 100 m long moving in opposite direction, cross each other in 8 seconds. If one is moving twice as fast as other, then the speed of the faster train is (in kmph)  
a)30      b)45      c)60      d)75
40. A train 150 m long passes a km stone in 15 seconds and another train of the same length travelling in opposite direction in 8 seconds. The speed of the second train is (in kmph)  
a)60      b)66      c)72      d)99

# TIME AND WORK

1. If 20 men take 30 days to complete a job. In how many days can 25 men complete the job?  
a) 28 days b) 24 days c) 36 days d) 20 days
2. Fifteen men take 10 days to complete a job working 12 hours a day. How many hours a day should 10 men work to complete the job in 20 days?  
a) 20 days b) 8 days c) 9 days d) 10 days
3. A piece of work can be done by 16 men in 8 days working 12 hours a day. How many men are needed to complete another work, which is three times the first one, in 24 days working 8 hours a day?  
a) 24 men b) 29 men c) 20 men d) 30 men
4. A can do a piece of work in 9 days, B can do the same in 12 days. In how many days can the work be completed if A and B work together?  
a)  $5\frac{1}{9}$  days      b)  $5\frac{1}{4}$  days  
c)  $5\frac{1}{3}$  days      d)  $5\frac{1}{7}$  days
5. A and B together can do a piece of work in 12 days and A alone can complete the work in 18 days. How long will B alone take to complete the job?  
a) 30 days b) 36 days c) 6 days d) 56 days
6. Anil and Amit can complete a job in 12 days working together. Amit alone can complete it in 16 days. Both of them worked together for 4 days and then Amit left. How long will Anil take to complete the remaining work?  
a) 30 days b) 47 days c) 32 days d) 24 days
7. A and B can do a piece of work in 12 days, B and C can do it in 15 days and C and A can do the same work in 20 days. How long would each take to complete the job?  
a)  $\frac{1}{30}, \frac{1}{20}, \frac{1}{60}$     b)  $\frac{1}{20}, \frac{1}{30}, \frac{1}{30}$   
c)  $\frac{1}{20}, \frac{1}{20}, \frac{1}{20}$     d)  $\frac{1}{60}, \frac{1}{10}, \frac{1}{30}$
8. A and B can do a work in 12 days, B and C in 15 days and C and A in 20 days. They all work together for 6 days and then A left. In how many more days can B and C finish the remaining work?  
a) 5 days b) 6 days c) 8 days d) 9 days
9. A can do a work in 12 days. When he had worked for 3 days B joined him. If they complete the work in 3 more days. In how many days can B alone finish the work?  
a) 5 days b) 6 days c) 8 days d) 9 days
10. A and B together can do a piece of work in  $14\frac{2}{5}$  days; B and C together can do the same work in 12 days. After A worked for 8 days, B for 12 days C takes up and finished it alone in 6 days. In how many days will B do the work, working alone?  
a) 28 days b) 24 days c) 36 days d) 20 days
11. To do a certain work C alone takes twice as long as A and B together. A would take 3 times as long as B and C together. All three together complete the work in 5 days. How long would C take separately?  
a) 15 days b) 29 days c) 20 days d) 10 days
12. 4 men or 5 women can construct a wall in 82 days. How long will it take 5 men and 4 women to do the same?  
a) 30 days b) 47 days c) 32 days d) 40 days
13. If 9 men and 12 boys can do a piece of work in 4 days and 4 men and 16 boys can do the same piece of work in 6 days. How long will 6 men and 24 boys take to complete the same work?  
a) 5 days b) 6 days c) 8 days d) 4 days

14. A certain number of men can do a work in 20 days. If there were 4 more men, the work can be done in 5 days less. How many men were there initially?  
a) 12 days b) 18 days c) 16 days d) 4 days
15. X is 3 times as fast as Y and is able to complete the work in 40 days less than Y. Find the time in which they can complete the work together?  
a) 12 days b) 17 days c) 19 days d) 15 days
16. Sita can finish some work in 12 days working 4 hours a day. Gita can finish the same in 15 days working 3 hours a day. In how many days can they finish it working together at  $4\frac{1}{2}$  hours a day?  
a)  $5\frac{5}{31}$  days      b)  $5\frac{5}{32}$  days  
c)  $5\frac{5}{33}$  days      d)  $5\frac{5}{34}$  days
17. A alone can do a work in 12 days and B alone in 18 days. If C takes twice as long as A and B together, how long will B and C together take to complete the same work?  
a) 5 days b) 6 days c) 8 days d) 4 days
18. A and B each working alone can do a work in 10 and 15 days respectively. They started the work together but B left after sometime and A finished the remaining work in 5 days. After how many days from the start did B leave?  
a) 4 days b) 3 days c) 2 days d) 8 days
19. A contractor decided to complete the work in 40 days and employed 60 men at the beginning and 40 men additionally after 10 days and got the work completed as per schedule. If he had not employed the additional men, how many extra days would he have needed to complete the work?  
a) 30 days b) 20 days c) 40 days d) 45 days
20. A group of 35 men is employed to complete some work in 48 days. After 33 days, 5 more men are employed and the work is finished 1 day earlier. If 5 more men were not employed, how many more days would it have taken beyond the expected period?  
a) 7 day behind schedule  
b) 3 day behind schedule  
c) 2 day behind schedule  
d) 1 day behind schedule
21. A and B working separately can do a piece of work in 6 and 9 days respectively; they work on alternate days starting with A on the first day. In how many days will the work be done?  
a) 4 days b) 3 days c) 2 days d) 7 days
22. A and B working separately can do a piece of work in 6 and 12 days respectively. They work on alternate days starting with A on the first day. In how many days will the work be completed?  
a) 4 days b) 3 days c) 2 days d) 8 days
23. A and B working separately can do a piece of work in 12 and 15 days. They work on alternate days starting with A on the first day. In how many days will the work be completed?  
a)  $13\frac{1}{4}$  days      b)  $13\frac{2}{4}$  days  
c)  $13\frac{3}{4}$  days      d)  $13\frac{5}{4}$  days
24. A and B working separately can do a piece of work in 20 and 24 days. They work on alternate days starting with B on the first day. In how many days will the work be completed?  
a)  $21\frac{5}{6}$  days      b)  $21\frac{1}{6}$  days  
c)  $21\frac{4}{5}$  days      d) none of these
25. A, B and C can do a piece of work in 4, 5 and 7 days respectively. They got Rs. 415 for the job. What is A's share?  
a) 120      b) 175      c) 160      d) 140
26. A, B and C contract a work for Rs. 4500. A and B together complete  $\frac{3}{5}$ th of the work and then C takes over and finished the work. What is the amount got by C?  
a) 1200      b) 1800      c) 1600      d) 1400

27. Wages for 40 women for 30 days are Rs,21,600.How many men must work for 25 days to earn Rs.14,400 if the daily wages for a man are double that of a women?  
a)12      b)14      c)16      d)19
28. A,B and C can together earn Rs.1,620 in 9 days.A and C can earn Rs.600 in 5 days where as B and C in 7 days can earn Rs 910.Find the daily earnings of C?  
a)Rs 60    b)Rs 70    c)Rs 80    d)Rs 90
29. A can do a piece of work in 20 days and B in 30 days.A starts the work and worked for 6 days. Then B completed the remaining part of the work.In how many days was the work completed?  
a)24      b)27      c)32      d)34
30. A can do a piece of work in 24 days and B in 48 days.B joins A after A had worked alone for 6 days.In how many more days would the work get completed?  
a)10      b)11      c)12      d)13
31. P can complete a piece of work in 20 days and Q in 30 days.P worked alone for 4 days and then Q completed the remaining work along with R in 18 days.In how many days can R working alone complete the work?  
a)60      b)65      c)80      d)90
32. 25 men take 25 days to construct a wall 10 m high.How many men would be required to construct a similar wall,which is 8 m high,if it is planned that the work would be completed in 10 days?  
a)32      b)40      c)44      d)48
33. 20 cows and 40 goats can be kept for 10 days for Rs.460.What would be the cost of keeping 50 cows and 30 goats for 12 days if the cost of keeping 5 goats is the same as cost of keeping 1 cow?  
a)Rs 888    b)Rs 965    c)Rs 1007    d)Rs 1104
34. A,B and C started the work and after completing  $\frac{1}{5}$ th of the work C left.A and B then worked for 20 days.C then took over from A and B and completed the remaining portion of the work in 12 days.If C takes 40 days to complete the work , in how many days would A alone or B alone complete the work if the efficiencies with which they work is the same?  
a)40      b)60      c)80      d)100
35. A boy is trying to cover a distance of 100 meters.He takes a jump forward and covers 2m,but every time he jumps forward he also moves 1m backward.In all,how many jumps would be required to cover the distance?  
a)99      b)100      c)98      d)none of these
36. A piece of work can be completed by 10 men in certain number of days.If there were 2 men less it would have taken 3 more days to complete the work.In how many days can 24 men complete the same work?  
a)2      b)3      c)4      d)5
37. A is 80 % more efficient than B who is 60% more efficient than C.A takes 40 days less than B to complete a work. A starts the work and works for 25 days and then B takes over.B then work for the next 30 days and then stops.In how much more time can C complete the remaining work? (in days)  
a)20      b)24      c)32      d)40
38. 3 men and 5 women can complete a work in 12 days, which 5 men and 12 women can complete in 6 days.In how many days can 4 men and 4 women complete the same work?  
a)7      b)10      c)11      d)12
39. P and Q agreed to complete a job in 15 days for Rs 6200.P can complete the same job in 50 days and Q in 30 days.They had to take R to complete the work in time.Find R's share in the money earned by them.  
a)Rs 880    b)Rs 1240    c)Rs 1460    d)Rs 2020
40. A and B complete a piece of work in 10 days.B and C in 12 days and C and A in 15 days.All the three of them started working and then B left after 4 days.C left 3 days after that and then immediately B joined A again to complete the remaining work.In how many days was the work completed?  
a)10      b)12      c)14      d)22



# PIPE AND CISTERN

1. Two pipes A and B can fill a tank in 36 hours and 45 hours respectively. If both the pipes are opened simultaneously, how much time will be taken to fill the tank?  
a) 10 hrs b) 15 hrs c) 20 hrs d) 25 hrs
2. Two pipes can fill a tank in 10 hours and 12 hours respectively while a third pipe empties the full tank in 20 hours. If all the three pipes operate simultaneously, in how much time will the tank be filled?  
a) 7 hrs 30 min      b) 5 hrs  
c) 7 hrs              d) none of these
3. If two pipes function simultaneously, the reservoir will be filled in 12 hours. One pipe fills the reservoir 10 hours faster than the other. How many hours does it take the second pipe to fill the reservoir?  
a) 10      b) 20      c) 30      d) 40
4. A cistern has two taps which fill it in 12 minutes and 15 minutes respectively. There is also a waste pipe in the cistern. When all the three are opened, the empty cistern is full in 20 minutes. How long will the waste pipe take to empty the full?  
a) 5 min    b) 10 min    c) 15 min    d) 20 min
5. An electric pump can fill a tank in 3 hours. Because of a leak in the tank it took  $3\frac{1}{2}$  hours to fill the tank. If the tank is full, how much time will the leak take to empty it?  
a) 17      b) 18      c) 20      d) 21
6. Two pipes can fill a cistern in 14 hours and 16 hours respectively. The pipes are opened simultaneously and it is found that due to leakage in the bottom it took 32 minutes more to fill the cistern. When the cistern is full in what time will the leak empty it?  
a) 110 hrs b) 111 hrs c) 112 hrs d) none of these
7. Two pipes A and B can fill a tank in 36 min and 45 min resp. A water pipe C can empty the tank in 30 min. First A and B are opened. After 7 min, C is also opened. In how much time, the tank is full?  
a) 19 min b) 29 min c) 39 min d) 49 min
8. Two pipes A and B can fill a tank in 24 min and 32 min. resp. If both the pipes are opened simultaneously, after how much time B should be closed so that the tank is full in 18 min?  
a) 5 min    b) 8 min    c) 16 min    d) 29 min
9. Two pipes A and B can fill a tank in 20 and 30 min resp. If both the pipes are used together, then how long will it take to fill the tank?  
a) 12 min b) 15 min c) 25 min d) 50 min
10. Three pipes A, B and C can fill a tank in 6 hours. After working at it together for 2 hrs, C is closed and A and B can fill the remaining part in 7 hours. The number of hours taken by C alone to fill the tank is  
a) 10      b) 12      c) 14      d) 16
11. A cistern can be filled by a tap in 4 hours while it can be emptied by another tap in 9 hrs. If both the taps are opened simultaneously, then after how much time will the cistern get filled?  
a) 4.5 hrs b) 5 hrs    c) 6.5 hrs d) 7.2 hrs
12. Two pipes A and B can fill a cistern in  $37\frac{1}{2}$  minutes and 45 minutes resp. Both pipes are opened. The cistern will be filled in just half an hour, if the pipe B is turned off after  
a) 5 min    b) 9 min    c) 10 min    d) 15 min
13. A tap can fill a tank in 6 hours. After half the tank is filled, three more similar taps are opened. What is the total time taken to fill the tank completely?

- a)3 hrs 15 min      b)3 hrs 45 min  
c)4 hrs                d)4 hrs 15 min
14. Two pipes can fill a tank in 20 and 24 min resp. and a waste pipe can empty 3 gallons per minute. All the three pipes working together can fill the tank in 15 min. The capacity of the tank is  
a)60 gallons      b)100 gallons  
c)120 gallons      d)180 gallons
15. A water tank is two fifth full. Pipe A can fill a tank in 10 min and pipe B can empty it in 6 min. If both the pipes are open, how long will it take to empty or fill the tank completely?  
a)6 min to empty    b)6 min to fill  
c)9 min to empty    d)9 min to fill
16. A leak in the bottom of a tank can empty the full tank in 8 hours. An inlet pipe fills water at the rate of 6 litres a min. When the tank is full, the inlet is opened and due to the leak, the tank is empty in 12 hrs. How many litres does the cistern hold?  
a)7580    b)7960    c)8290    d)8640
17. Pipe A can fill a tank in 5 hrs, pipe B in 10 hrs and Pipe C in 30 hrs. If all the pipes are open, in how many hours will the tank be filled?  
a)2      b)2.5      c)3      d)3.5
18. A booster pump can be used for filling as well as for emptying a tank. The capacity of the tank is 2400 cubic meter. The emptying capacity of the tank is  $10 \text{ m}^3$  per min higher than its filling capacity and the pump needs 8 min lesser to empty the tank than it needs to fill it. What is the filling capacity of the pump?  
a)50      b)60      c)72      d)none of these
19. Pipes A and B can fill a tank in 5 and 6 hours respectively. Pipe C can empty it in 12 hrs. If all the three pipes are opened together, then the tank will be filled in  
a)1  $\frac{13}{17}$  hrs      b)2  $\frac{8}{11}$  hrs  
c)3  $\frac{9}{17}$  hrs      d)4  $\frac{1}{2}$  hrs
20. Three taps A, B and C can fill a tank in 12, 15 and 20 hours respectively. If A is open all the time and B and C are open for one hour each alternately, the tank will be full in  
a)6 hrs      b)6  $\frac{2}{3}$  hrs  
c)5 hrs      d)7 hrs
21. Three pipes A, B and C can fill a tank from empty to full in 30 min, 20 min and 10 min resp. When the tank is empty, all the three pipes are opened. A, B and C discharge chemical solutions P, Q and R respectively. What is the proportion of solution R in the liquid in the tank after 3 min  
a)5/11    b)6/11    c)7/11    d)8/11
22. Two pipes A and B can fill a tank in 6 hrs and 4 hrs resp. If they are opened on alternate hours and if pipe A is opened first, in how many hours, the tank shall be full?  
a)4      b)4  $\frac{1}{2}$     c)5      d)5  $\frac{1}{2}$
23. Two pipes A and B can separately fill a cistern in 60 min and 75 min respectively. There is a third pipe in the bottom of the cistern to empty it. If all the three pipes are simultaneously opened, then the cistern is full in 50 min. In how much time, the third pipe alone can empty the cistern?  
a)90 min    b)100 min    c)110 min    d)120 min
24. Two pipes A and B can fill a cistern in 12 min and 15 resp, while a third pipe C can empty the full tank in 6 min. A and B are kept open for 5 min in the beginning and then C is also opened. In what time the cistern is emptied?  
a)30 min      b)33 min  
c)37  $\frac{1}{2}$  min    d)45 min
25. A pump can fill a tank with water in 2 hrs. Because of a leak, it took 2  $\frac{1}{3}$  hours to fill the tank. The leak can drain all the water of the tank in  
a)4  $\frac{1}{3}$  hrs      b)7 hrs      c)8 hrs      d)14 hrs

26. A large tanker can be filled by two pipes A and B in 60 min and 40 min resp. How many min will it take to fill the tanker from empty state if B is used for half the time and A and B fill it together for another half?  
a) 15 min b) 20 min c) 27.5 min d) 30 min
27. Two taps A and B can fill a tank in 5 hrs and 20 hrs resp. If both the taps are open then due to leakage, it took 30 min more to fill the tank. If the tank is full, how long will it take for the leakage alone to empty the tank?  
a) 4  $\frac{1}{2}$  hrs b) 9 hrs  
c) 18 hrs d) 3.6 hrs
28. Two pipes A and B can fill a tank in 15 hrs and 20 hrs resp while a third pipe C can empty the full tank in 25 hrs. All the three pipes are opened in the beginning. After 10 hours, C is closed. In how much time will the tank be full?  
1) 12 hrs b) 13 hrs c) 16 hrs d) 18 hrs
29. Two pipes A and B together can fill a cistern in 4 hours. Had they been opened separately, then B would have taken 6 hours more than A to fill the cistern. How much time will be taken by A to fill the cistern separately?  
a) 1 hr b) 2 hrs c) 6 hrs d) 9 hrs
30. Two pipes A and B can fill a tank in 15 min and 20 min resp. Both the pipes are opened together but after 4 min, pipe A is turned off. What is the total time required to fill the tank?  
a) 10 min 20 sec b) 11 min 45 sec  
c) 12 min 30 sec d) 14 min 40 sec
31. One pipe can fill a tank three times as fast as another pipe. If together the two pipes can fill the tank in 36 min, then the slower pipe alone will be able to fill the tank in  
a) 81 min b) 108 min  
c) 144 min d) 193 min
32. A tank is filled in 5 hrs by three pipes A, B and C. The pipe C is twice as fast as B and B is twice as fast as A. How much time will pipe A alone take to fill the tank?  
a) 20 hrs b) 25 hrs c) 35 hrs d) none of these
33. A tank is filled by three pipes with uniform flow. The first two pipes operating simultaneously fill the tank in the same time during which the tank is filled by the third pipe alone. The second pipe fills the tank 5 hours faster than the first pipe and 4 hours slower than the third pipe. The time required by the first pipe is  
a) 6 hrs b) 10 hrs c) 15 hrs d) 30 hrs
34. 12 buckets of water fill a tank when the capacity of each tank is 13.5 litres. How many buckets will be needed to fill the same tank, if the capacity of each bucket is 9 litres?  
a) 8 b) 15 c) 16 d) 18
35. Bucket P has thrice the capacity as bucket Q. It takes 60 turns for bucket P to fill the empty drum. How many turns it will take for both the buckets P and Q, having each turn together to fill the empty drum?  
a) 30 b) 40 c) 45 d) 90
36. Two pipes A and B can fill a tank in 12 min and 15 min respectively. If both the taps are opened simultaneously, and the tap A is closed after 3 minutes, then how much more time will it take to fill the tank by tap B?  
a) 7 min 15 sec b) 7 min 45 sec  
c) 8 min 5 sec d) 8 min 15 sec
37. Pipes A and B can fill a tank in 5 and 6 hours respectively. Pipe C can empty it in 12 hrs. If all the three pipes are opened together, then the tank will be filled in  
a) 1  $\frac{13}{17}$  hrs b) 2  $\frac{8}{11}$  hrs  
c) 3  $\frac{9}{17}$  hrs d) 4  $\frac{1}{2}$  hrs

38. Three taps A,B and C can fill a tank in 12,15 and 20 hours respectively. If A is open all the time and B and C are open for one hour each alternately, the tank will be full in  
a)6 hrs                      b)6  $\frac{2}{3}$  hrs  
c)5 hrs                      d)7 hrs
39. Three pipes A,B and C can fill a tank from empty to full in 30 min,20 min and 10 min resp. When the tank is empty,all the three pipes are opened A,B and C discharge chemical solutions P,Q and R respectively. What is the proportion of solution R in the liquid in the tank after 3 min  
a)5/11    b)6/11    c)7/11    d)8/11
40. Two pipes A and B can fill a tank in 6 hrs and 4 hrs resp. If they are opened on alternate hours and if pipe A is opened first, in how many hours, the tank shall be full?  
a)4            b)4  $\frac{1}{2}$     c)5            d)5  $\frac{1}{2}$

INDUS EDUCATION

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# BLOOD RELATIONS

Directions: The questions (1-8) are based on the following statements.

- a) Seeta, Rajinder and Surinder are children of Mr. and Mrs. Maudgil
- b) Renu, Raja and Sunil are children of Mr. and Mrs. Bhaskar
- c) Sunil and Seeta are married and Ashok and Sanjay are their children
- d) Geeta and Rakesh are children of Mr. and Mrs. Jain
- e) Geeta is married to Surinder and has three children named Rita, Sonu and Raju.

1. How is Rajinder related to Raju?  
a) brother                      b) uncle  
c) brother in law          d) cousin  
e) maternal uncle
2. How is Rajinder related to Ashok?  
a) brother in law          b) father in law  
c) cousin                  d) uncle          e) maternal uncle
3. How is Rakesh related to Surinder?  
a) brother                      b) cousin  
c) uncle                        d) maternal uncle  
e) brother in law
4. How is Rakesh related to Raju?  
a) brother          b) cousin          c) uncle          d) maternal uncle  
e) brother in law
5. What is Sanjay's surname?  
a) Bhaskar                      b) Jain  
c) Maudgil                      d) Surinder  
e) none of these
6. Renu is Sanjay's  
a) sister                        b) sister in law  
c) cousin                       d) niece  
e) aunt
7. Raju's surname is  
a) Jain                            b) Bhaskar  
c) Maudgil                      d) Surinder  
e) none of these
8. Sunil and Rakesh are related as  
a) brothers                      b) cousins  
c) uncle and cousin          d) brother in law  
e) none of these

Passage (questions 9 to 12):

Amit is the son of Rahul. Sarika, Rahul's sister has a son Sonu and a daughter Rita. Raja is the maternal uncle of Sonu.

9. How is Amit related to Sonu?  
a) Nephew                      b) Cousin (brother)  
c) uncle                        d) brother  
e) none of these
10. How is Rita related to Raja?  
a) sister                        b) daughter

- c)niece                      d)aunt  
e)none of these

11. How many nephews does raja have?  
a)1            b)2            c)3            d)4            e)none
12. What is the relationship of Raja with Rita?  
a)uncle                      b)brother  
c)maternal uncle      d)nephew  
e)cant be determined

Directions:Following questions pertains to Ques 13 - 15

There are six persons S1,S2,S3,S4,S5 and S6

S3 is the sister of S6

S2 is the brother of S5's husband

S4 is the father of S1 and grandfather of S6.

There are 2 fathers, one mother and 3 brothers in the family

13. Who is S5's husband?  
a)S2            b)S3            c)S1            d)S4            e)S6
14. Who is the mother?  
a)S1            b)S2            c)S3            d)S5  
e)cannot be determined
15. How many male members are there?  
a)1            b)2            c)3            d)4  
e)cannot be determined

Passage (Questions 16-20)

Mr and Mrs sharma have two children Asha and Shashi. Shashi married Radha, daughter of Mrs Mahajan. Suresh , son of Mrs Mahajan married Rita. Sonu and Rocky are born to Suresh and Rita. Uma and Sudha are the daughters of Shashi and Radha.

16. What is Sudha's relation to Asha?  
a) Sister   b)niece   c)Aunt      d)Daughter  
e)none of these
17. How is Sonu related to Mr Mahajan?  
a)son in law      b)sib            c)grandson  
d)none of these      e)cannot be determined
18. How is Asha related to Radha?  
a)mother in law      b)aunt      c)sister in law  
d)niece                      e)none of the above
19. What is the surname of sonu?  
a)Mahajan              b)sharma  
c)shashi                  d)cannot be detemined  
e)none
20. How is suresh related to sudha?  
a)brother   b)maternal uncle      c)uncle  
d)cousin   e)cannot be determined

Following information pertains to ques 21-25:

- In a family of seven three generations are living together
- The family consists two married couples having two children each
- Gopal is lucky t have two grandchildren
- There are two housewives and both are beautiful
- Gopal who is Manoj's father , is a lawyer and earns the most.

-jyotsna is the sister of a lecturer and herself is a nurse  
-Anuradha is married to a lecturer who is Nidhi's son  
-Jyothika is the grand daughter of one of the housewives and is a classical dancer

21. What is Manoj's profession?  
a)student                      b)lecturer  
c)lawyer                      d)cannot be determined  
e)none of these
22. How many male members are there in the family?  
a)2              b)3              c)4  
d)cannot be determined  
e)none of these
23. Which of the following statements is not true?  
a)The nurse is sister in law of the housewives  
b)Gopal has two grand children  
c)Nidhi has a son and a daughter  
d)Gopal has two children  
e)Anuradha has a son and a daughter
24. Who are the children of Nidhi?  
a)jyotsna and manoj  
b)anuradha and jyotsna  
c)anuradha and manoj  
d)cannot be determined  
e)none of these
25. Who among the following is one of the married couples?  
a)Gopal-jyotika              b)Nidhi-Gopal  
c)Manoj-Jyotika              d)cannot be determined  
e)none
26. Anil introduces Rohit as the son of the only brother of his fathers wife.How is Rohit related to Anil?  
a)cousin   b)uncle   c)brother d)father
27. Pointing out to a photograph , a man tells his friend,"she is the daughter of the only son of my fathers wife.How is the girl in the photograph related to the man?  
a)niece                      b)daughter  
c)mother                      d)none of these
28. X introduces Y saying ,"He is the husband of the granddaughter of the father of my father".How is Y related to X?  
a)brother                      b)brother in law  
c)daughter                      d)data inadequate

Questions 29-31:

- I) In a family of six persons A,B,C,D,E and F there are two married couples  
II) D is grandmother of A and mother of B  
III) C is wife of B and mother of F  
IV) F is the grand daughter of E

Now answer the following questions based on the above conditions.

29. What is C to A?  
a)mother                      b)grandmother  
c)daughter                      d)granddaughter
30. How many male members are there in the family?  
a)cannot be determined              b)2  
c)3                                      d)0
31. Who are the two couples?  
a)BC and DE                      b)AC and DB



c)cannot be determined      d)none of these

32. What will be the daughter of the woman who is the mother of the husband of my mother to me?

a)mother b)aunt c)grandmother d)niece

33. A woman sees the photograph of a man and says."this mans sister is my mother in law". HOw is the womans husband related to the man in the photograph?

a)uncle b)brother c)father d)none of these

34. How is your mothers sisters brothers wifes child related to you?

a)sister b)brother c)cousin d)none of these

Directions(Questions 35-39):

There are six persons A,B,C,D,E and F.C is the sister of F.B is the brother of E's husband.D is the father of A and grandfather of F.There are two fathers , three brothers and a mother in the group.

35. Who is the mother?

a)A b)B c)D d)E

36. Who is E's husband?

a)B b)C c)A d)F

37. How many male members are there in the group?

a)one b)two c)three d)four

38. How is F related to E?

a)uncle b)husband c)son d)daughter

39. Which of the following is a group of brothers?

a)ABF b)ABD c)BFC d)BDF

40. A party consists of grandmother,father,mother,four sons and their wives and one son and two daughters to each of the sons.How many females are there is all?

a)14 b)26 c)18 d)none of these

# CODING AND DECODING

**Directions:** Questions 1-6 are based on the following coding patterns: If 'EFGHIK' are coded letters representing VUTSRQP, choose the right code for the word given in capital letters from the answer choices(a-e) given under each

1. LIMIT  
a)KNRNC b)ORNRG c)JKOKG d)RSTSG e)MHLHS
2. SOUR  
a)IFLT b)HLFI c)LIFT d)IHIF e)FLTI
3. POCKET  
a)KLXPUC b)KLXUPG  
c)KLXGUP d)KLXVPG e)KLXPVG
4. GROUP  
a)TILFK b)TILEL c)TILGH d)TILHG e)TFGFK
5. HIGH  
a) STRS b)RJHR c)GLOG d)RSTR e)SRTS
6. ZERO  
a)BUHN b)AVIM c)AVIL d)AUTL e)AVTI
7. If OVER is coded as QYIW and UP as WS, then STAR is coded as  
a)UWEV b)UWDV c)UVBS d)UWEW e)UWEX
8. In a certain code DELHI is written as CDKGH and MADRAS is written as IZCWZR, then how will you code PATNA?  
a)OZTMZ b)OZSMB c)QBUMB d)OZTSM e)OZMSZ
9. If FIRE is coded for a secret message to be teleprinted as EHQD how is the reply DONE to be relayed?  
a)DMOE b)CNMD c)DLNC d)DNPE e)DMPE
10. DRIVER = 7  
PEDESTRIAN = 11  
ACCIDENT = ?  
a) 9 b) 8 c)6 d)18 e) 0

**Directions(questions 11-15):**Based on the following code and key scheme, code and decode the words/letters written in capital letters

CODE	Z A X B Y O T W C M I
KEY	B U E T F A I R U L D

11. BEAUTY  
a) ZXOCIF b)TXACIF  
c)ZXOCFI d)ZXOFCI e)ZXCOFI
12. FAILED  
a) YOTMXI b)YOTMXD  
c)YOTMIX d)AIRMXD e) YOTXIM
13. FLAIR  
a) YMOTW b)YMUTW  
c)YMIOW d)YMOIW e)YMWIO
14. TEARFUL

- a) BXUWYCM      b) IXUMYCM  
c) BXUWICM      d) BXUWMYC  
e) BXWUYCM

15. If 'HBPQMNOT' stands for 'SUNDAY TO', how will you write 'YOU DO SO' using the coding scheme used for 'SUNDAY TO' ?  
a) NTBQTHT      b) NTBQTHB  
c) NTQBTHB      d) NTQBTHT  
e) NTBQHTB
16. If in a certain language , CALCUTTA is coded as GEPGYXXE, which word would be coded as FSQFCE?  
a) BOMBYA      b) BOMBAY  
c) BOMYAB      d) BOBAYM  
e) BOBAMY
17. If DELHI is coded as 73541 and CALCUTTA as 82589662, how can CALICUT be coded?  
a) 5279431      b) 5978213  
c) 8251896      d) 8543691      e) 547362
18. In a certain code , RIPPLE is written as 613382 and LIFE is written as 8192. How is PILLER written in that code?  
a) 318826      b) 776655      c) 786543      d) 156724      e) 675429
19. If JUNK is written as B5C7B7A11, which one among the following words can be written as B4C3B7B2?  
a) BIND      b) BEND      c) HANG      d) HIND      e) NONE
20. In a certain code, '37' means 'which class' and '583' means 'caste and class'. What is the code for 'caste'?  
a) 3      b) 7      c) 8      d) either 5 or 3  
e) either 5 or 8

**Directions :** "GOAHEAD" is coded as JRDKHDG and STOP is coded as VWRS, how will you code/decode the letters given in capitals in question 21-26

21. FIRE  
a) URIV      b) IUJG      c) LUHI      d) ILUH      e) NONE
22. SHOOT  
a) VKRRW      b) UMSSX  
c) JJWUK      d) HJSWL      e) HUWOK
23. RETURN  
a) UHWXUQ      b) HJKWER  
c) HUELUE      d) UHWKAL      e) UJKALA
24. VWDUW  
a) STAIN      b) STEPS      c) SPORT      d) STAND      e) START
25. HEAD  
a) UHGD      b) KHKL      c) UJDG      d) HULA      e) NONE
26. GRZQ  
a) OWNS      b) DOWN      c) DONE      d) COME      e) SHUT
27. If HJSM means GIRL, what does RNES mean?  
a) BOYS      b) COWS      c) TOYS      d) SOFT      e) BILL
28. If 'DBMDVUUB' stands for 'CALCUTTA' , how will you code BOMBAY?  
a) DQODDX      b) CPNCBZ  
c) DPNCB      d) CPMCBX      e) CPNVFZ
29. PROMOTION is written in a certain coded message as 'Q S P 89'  
a) EFBKYOLO      b) EG89

c)DE89

d)DE117

e)EF 89

30. If TEACHER and HIGHLY are written as XWPBRWM and QSNRDZ respectively, how will you code the word CHARITY?  
a)BPRNSBZ                      b) BRPMSZB  
c)BRPMSDX                     d)BRPMSXZ  
e)HJFHAIEE
31. 'SCHOOL = PNIKKB' and ME=ZY , how will you write 'COOLHOME'?  
a) NKKBIKZY                    b)NKKLIKZY  
c)PKNIKYZ                      d)KKKALAI DY  
e)HHAUELHF
32. If CLIPOSE stands for MTDFBE , how will you code POLICE?  
a) FTBHTM                      b)FBTDMEc)FBTDEM  
D)FTBDMFe)FHAUEE
33. XYMNOPQ is decoded as NBOUIGT code OUTING  
a)MNQOXN                      b)MNOQXN                      c)MNQOPX  
d)HJHDFAUE                    e)MNHEUA
34. LOAD is coded as MPBE and DRIVE as ESJWF. how will you code the word 'LADDER'  
a)MDEEFS b)MBEEFS c)NCCFFGT  
d)MBEESP e)OCFFGE
35. GO AT ONCE is coded message received as 'JB SM BQZY' and you are required to relay the answer in a code saying GO TO GATE. Select the code you will be using based on the scheme applied in the example here?  
a) HP BU PMDF                      b)JB MK JSMY  
c)IM CS QMDF                      d)JB MK JMSY  
e)JB MB JSMY
36. START=WALKA and BUDPI-XZFMQ, hw will you code 'STUPID'?  
a)BASMOE    b)WAZNOF                      c)HFUHEH  
d)HFAUEKe)HFEUAL
37. If in a certain code , 'bir le nac' means 'green and tasty';'pic nac hor' means 'tomato is green' and 'coc bir hor' means 'food is tasty'. Which of the follwing means 'tomato is tasty' in that code?  
a)bir le hor                      b)pic hor nac  
c)hor bir pic                      d)none  
e)cannot be predicted

Questions 38 - 40

In a certain code , 'il be pee' means 'roses are blue', 'sik hee' means 'red flowers' and 'pee mit hee' means 'flowers are vegetables'

38. How is 'red' written in that code?  
a)hee    b)sik    c)be  
d)cannot be determined    e)none
39. How is 'roses' written in that code?  
a)il                      B)PEE                      C)BE                      d)cannot be determined    e)none
40. How is 'vegetables are red flowers' written in this code?  
a) pee sik mit hee    b)sik peehee be  
c)il sik mit hee    d)none

# PROBLEM ON AGES

1. The ratio between kishor rahi and his father's age is 1:4,if 5 years ago,his father was 7 times older to him at that time,what is kishore's age today?  
a)30    b)40    c)60    d)28    e)32
2. The average age of two daughters of Mrs.Mathews is 15 years.If the age of Mrs.Mathews is added,the average becomes 20 years.How old is Mrs Mathews?  
a)36    b)60    c)55    d)45    e)50
3. Mrs.Malik is twice as old as her daughter Manu.20 years ago,the age of MRS Malik was 12 times Manu's age.Calculate how old is Mrs Malik today.  
a)40    b)45    c)60    d)50    e)44
4. Sonu and Manu's age ratio is 4:3.If sum of their ages is 28 years,the ratio of their ages after 8 years will be...  
a)5:4    b)2:3    c)5:6    d)3:2    e)1:4
5. Ratio of Dolly and Vandana's age is 2:3 and the sum of their ages is 60 years.How old is Dolly?  
a)12    b)16    c)24    d)30    e)20
6. The average age of 10 boys in a hostel comes out to be 14.A new admission brought down their average age by one year. How old the new recruit must be  
a)4    b)5    c)12    d)3    e)11
7. Ravi is as much younger to Nitin as he is older to Lokesh. If the sum of ages of Nitin and Lokesh is 24 years, how old is Ravi?  
a)10    b)12    c)24    d)48    e)6
8. Ratio of Raveesh and his wife's age is 4:3.Raveesh will be 24 after 4 years.How old is his wife?  
a)12    b)15    c)16    d)10    e)14
9. Ratio of Lokesh's age to his mother's age is 4:7.The difference between their ages is 33 years.How old is Lokesh today?  
a)44    b)33    c)11    d)30    e)60
10. Average of ages of Eva and Meena is 12 years and average age of Meena,Teena and Zareena comes out to be 48.The total age of four girls would be?  
a)140    b)60    c)84    d)72  
e) cannot be determined
11. In a class of 20 students , if the average of 16 year is reduced by 2 year if Mohan joins in,can you calculate Mohan's age.If yes,then find out.  
a)24    b)20    c)28    d)26    e)30
12. Treeza is as much as younger to Eveline as she is older to eyeline.If the sum of age of Eveline and Eyeline is 80years,how old is treeza?  
a)64    b)46    c)32    d)48    e)40
13. The ratio of grandfather's age and grandson's age is 8:3.If the product of their ages is 120 years.How old is the grandson?  
a)18    b)12    c)15    d)9    e)8
14. Fathers age is 5 times his son's age.4 years back the fayjer was 9 times older than son.Find the father's present age.  
a)40    b)28    c)67    d)56    e)80
15. Father's age is reverse of son's age.one year back fathers age was twice of sons age.whats the fathers current age?

a)89      b)70      c)73      d)56      e)67

16. Sachin is younger than rahul by 4 years.If their ages are in the respective ratio of 7:9,how old is sachin?  
a)16years                      b)18 years  
c)28 years                      d)none of these
17. Abhay's age after six years will be three seventh of his fathers age.Ten years ago the ratio of their ages was 1:5.What isAbhays fathers age at present?  
a)45 years                      b)50 years  
c)68 years                      d)57 years
18. One year ago,the ratio of gaurav's and sachins age was 6:7 respectively.Four years hence, their ratio would become 7:8.How old is sachin?  
a)36 years                      b)35 years  
c)34 years                      d)32 years
19. The present age of a father is 3 years more than three times the age of his son.Three years hence fathers age will be 10 years more than twice the age of the son.Find the present age of the father  
a)32 years                      b)33 years  
c)45 years                      d)36 years
20. A person was asked to state his age in years.His reply was ,"take my age three years hence,multiply it by 3 and then subtract 3 times my age three years ago and you will know how old iam." What was the age of the person?  
a)18 years                      b)20 years  
c)24 years                      d)32 years
21. Present ages of sameer and anand are in the ratio of 5:4 respectively.Three years hence,the ratio of their ages will become 11:9 respectively.What is Anands present age in years?  
a)24                              b)27  
c)40                              d)cannot be determined
22. My brother is 3 years elder to me.My father was 28 years of age when my sister was born while my mother was 26 years of age when i was born.If my sister was 4 years of age when my brother was born,then,what was the age of my father and mother when my brother was born?  
a)32,23    b)32,29    c)35,29    d)35,33
23. Father is ages three times more than his son Rohit.After 8 years,he would be two and a halftimes of Rohit's age.After further 8 years,how many times would he be of Rohit's age?  
a)2 times                      b)2 1/2 times  
c)2 3/4 times                      d)3 times
24. Present ages of X and Y are in the ratio 5:6 respectively.Seven years hence this ratio will become 6:7 respectively.What is X's present age in years?  
a)35                      b)42                      c)49                      d)none of these
25. Ayesha's fathers age was 38 years of age when she was born while her mother was 36 years old when her brother four years younger to her was born.What is the difference between the ages of her parents?  
a)2 years                      b)4 years  
c)6 years                      d)8 years
26. A persons present age is two fifth of the age of his mother.After 8 years,he will be one-half of the age of his mother.How old is the mother at present?  
a)32 years                      b)36 years  
c)40 years                      d)48 years
27. The sum of the ages of 5 children born at the intervals of 3 years each in 50 years.What is the age of the youngest child?  
a)4 years                      b)8 years  
c)10 years                      d)none of these

28. At present, the ratio between the ages of Arun and Deepak is 4:3. After 6 years, Arun's age will be 26 years. What is the age of Deepak at present?  
 a) 12 years                      b) 15 years  
 c) 19 years                      d) 21 years
29. If 6 years are subtracted from the present age of Gagan and the remainder is divided by 18, then the present age of his grandson Anup is obtained. If Anup is 2 years younger to Madan whose age is 5 years, then what is Gagan's present age?  
 a) 48 years                      b) 60 years  
 c) 84 years                      d) 96 years
30. The ratio between the present ages of P and Q is 5:7 respectively. If the difference between Q's present age and P's age after 6 years is 2, what is the total of P's and Q's present ages?  
 a) 48 years                      b) 52 years  
 c) cannot be determined      d) none of these
31. In 10 years, A will be twice as old as B was 10 years ago. If A is now 9 years older than B, the present age of B is  
 a) 19 years                      b) 29 years  
 c) 39 years                      d) none of these
32. Eighteen years ago, a father was three times as old as his son. Now the father is only twice as old as his son. Then the sum of the present ages of the son and the father is  
 a) 54      b) 72      c) 105      d) 108
33. Rajan got married 8 years ago. His present age is  $\frac{6}{5}$  times his age at the time of his marriage. Rajan's sister was 10 years younger to him at the time of his marriage. The age of Rajan's sister is  
 a) 32      b) 36      c) 38      d) 40
34. The ratio between the present ages of P and Q is 6:7. If Q is 4 years older than P, what will be the ratio of the ages of P and Q after 4 years?  
 a) 3:4      b) 3:5      c) 4:3      d) none of these
35. A father said to his son, "I was as old as you are at present at the time of your birth. If the father's age is 38 years now, the son's age 5 years back was  
 a) 14 years                      b) 19 years  
 c) 33 years                      d) 38 years
36. A man is 24 years older than his son. In two years, his age will be twice the age of his son. The present age of the son is  
 a) 14      b) 18      c) 20      d) 22
37. The sum of the ages of a father and his son is 45 years. Five years ago, the product of their ages was 34. The ages of the son and the father are respectively  
 a) 6 and 39                      b) 7 and 38  
 c) 9 and 36                      d) 11 and 34
38. A is 2 years older than B who is twice as old as C. If the total of the ages of A, B and C be 27, then how old is B?  
 a) 7      b) 8      c) 9      d) 10
39. The age of a man is three times the sum of the ages of his two sons. Five years hence, his age will be double of the sum of the ages of his sons. The father's present age is:  
 a) 40 years                      b) 45 years  
 c) 50 years                      d) 55 years
40. The total age of A and B is 12 years more than the total age of B and C. C is how many years younger than A?  
 a) 12                                      b) 24  
 c) C is elder than A                  d) data inadequate

# PARTNERSHIP

1. In a business A invests half as much as B and B invests twice as much as C. If C invests rs.563 then (A+B)'s investment is.  
1) rs.821    2) rs.1000    3) rs.1689    4) rs.179
2. In a business a, b and c invested rs.6000, rs.8000 and rs.12000 respectively. Find the share of b in the total profits of rs.5200.  
1) rs.1200    2) rs.1400    3) rs.1600    4) rs.1800
3. Manish and Alok invested a trade. Profit earned by them was divided in the ratio 3:5. If Manish invested rs.800, the investment of Alok is:.  
1) rs.480    2) rs.1333.33    3) rs.265    4) rs.500
4. a, b and c together started a business. A invested 3 times as much as b and b invested 2/3 of what c invests. The ratio of capitals a, b and c is.  
1) 2:3:6    2) 6:2:3    3) 6:3:2    4) 2:3:2
5. In a business a, b and c invested rs.3600, rs.6300 and rs.4800 respectively. Find the share of c in the total profits rs.3430.  
1) rs.840    2) rs.1120    3) rs.1320    4) rs.1470
6. If  $3(a's\ capital) = 4(b's\ capital) = 5(c's\ capital)$ , then the ratio of their capitals is  
1) 12:15:20    2) 20:15:12  
3) 15:20:12    4) 15:12:20
7. If a's capital is equal to thrice b's capital and b's capital is equal to 4 times c's capital. The ratio of their capitals is  
1)  $1/3:1/12:1$     2)  $1/12:1/3:1$   
3)  $1:1/3:1/12$     4)  $1/12:1/4:1$
8. Ragu, Ram and Ravi started a shop by investing rs.27000, rs.18000 and rs.72000 respectively. At the end of one year, the profits were distributed. If Ram's share of profits is rs.36000, the total profits were.  
1) rs.1,08,000    2) rs.1,16,000  
3) rs.80,000    4) none
9. Three persons a, b and c shared profits in the ratio 1:4:5 if the total profits are rs.27500. Find the difference between the shares of a & b.  
1) rs.8250    2) rs.5500  
3) rs.4500    4) rs.6000
10. Ram, Yam and Raja shared profits in the ratio 2:3:4, the profits of Ram are rs.1800. Find the total profits.  
1) rs.2700  
2) rs.3600  
3) rs.8100  
4) rs.5400
11. a, b and c enter into a partnership. A contributes rs.3600 for 4 months, b contributes rs.1800 for 3 months. C contributes rs.2700 for 5 months. If the total profit is rs.29,600 find the share of b.  
1) rs.4800  
2) rs.4600  
3) rs.2600  
4) rs.3800
12. a, b and c are partners in a business. A invests rs.1000 for 8 months, b rs.1500 for 9 months and c rs.1800 for 6 months. If the profits are rs.1615, how much does b get?



- 1) rs.325
  - 2) rs.675
  - 3) rs.700
  - 4) rs.500
13. a and b enter into a partnership with rs.2500 and rs.3500 respectively. After 3 months a puts rs.500 more. Find the share of b in the annual profit of rs.2550
- 1) rs.1400    2) rs.1200
  - 3) rs.1300    4) rs.1550
14. a and b entered into a partnership with rs.2400 , rs.3000 respectively. After 6 months a withdraw rs.400. find the share of a in the annual profit of rs.10,400.
- 1) rs.6000    2) rs.4400    3) rs.8000    4) rs.3400
15. a and b entered into a partnership with rs.40,000, rs.60,000 respectively. After 4 months they invested rs.10,000 each. Find the difference between their shares in the annual profit of rs.34,000.
- 1) rs.4,000    2) rs.5000
  - 3) rs.6,000    4) rs.1000
16. a and b entered into a partnership with rs.20000, and 40000 respectively. After 6 months a withdraw rs.10000 while b invested rs.20000 more. If b received the rs.35,000 more than a in the annual profit, find the total annual profit.
- 1) rs.1,98,000    2) rs.1,88,000    3) rs.1,17,000    4) none
17. a,b and c entered into partnership and provided capitals of rs.1100, rs.1300 and rs.1700 respectively. some months later rs.500 extra capital was needed and it was supplied by b. at the end of 12 months total profit was rs.2527 and a's share therefore rs.627. when has b supplied the extra capital after?
- 1) 4 months    2) 6 months    3) 8 months    4) 10 months
18. a,b and c enter into partnership in a business with capitals of rs.5000, rs.6000 and rs.4000. a gets 30% of the profits for managing the business and the balance is divided in proportional to their capitals. A gets rs.200 more than b and c together. Find the share of c.
- 1) rs.420    2) rs.6560
  - 3) rs.700    4) rs.1000
19. a and b entered into a partnership with rs.12,000 and rs.20,000 b was a sleeping partner. At the end of the year they received rs.12,000 and rs.10,000 respectively. Find the monthly salary of a.
- 1) rs.700
  - 2) rs.600
  - 3) rs.500
  - 4) rs.400
20. a and b entered into a partnership with rs.12,000 and rs.24,000 respectively. B was a sleeping partner. At the end of the year they received rs.18,000 each. Find the salary of a.
- 1) rs.750
  - 2) rs.800
  - 3) rs.950
  - 4) rs.1000
21. ram and syam entered into a partnership with rs.50,000 and rs.75,000 respectively. Syam was a sleeping partner. At the end of the year they shared the profit of rs.1,08,000 in the ratio of 3:2. find the salary of ram per month.
- 1) rs.3500
  - 2) rs.4000
  - 3) rs.2700
  - 4) rs.3000

22. a is working partner and b is a sleeping partner in a business. A puts in rs.12,000 and rs.20,000. a receives 10% of the profit for managing .Out of a total profit of rs.9600, the money received by a is :

- 1) rs.4200
- 2) RS.2400
- 3) RS.3600
- 4) RS.4500

23. a,b and c started a business. The capital of a is four-fifth of the total capitals of b&c together and the capital of b is one third of the capitals of c&a together. Find the share of c on the annual profit of rs.10,800.

- 1) rs.3000
- 2) rs.3200
- 3) rs.3300
- 4) rs.2700

INDUS EDUCATION

# CLOCKS

1. Find the angle between the hands of a clock when the time is 3:20  
a)20      b)30      c)40      d)50
2. At what time between 4 and 5'o clock will the 2 hands of a clock beat an angle of 60 degrees with each other?  
a)4:10 10/11      b)4:32 8/11  
c)both a and b      d)none of these
3. Find the time at which the hands of a clock are at right angles between 7 and 8'o clock?  
a)7:21 9/11      b)7:54 6/1  
c)both a & b      d)none of these
4. Find the time at which the hands of a clock are exactly opposite directions between 8 and 9'o clock?  
a)8:10 10/11      b)8:02  
c)8:3/11      d)none of these
5. At what time between 2 and 3'o clock are the hands of a clock together?  
a)2:10      b)2:10 10/11  
c)2:10 10/12      d)none
6. In 24 hours,how many times do the two hands of a clock coincide?  
a)20 times      b)21 times  
c)22 times      d)23 times
7. If the hands of a clock coincide every 65 minutes,how much time does the clock gain or lose per day?  
a)10 100/146      b)10 100/145  
c)10 100/156      d)10 100/143
8. In a country R,clocks are manufactured in a special way.The total area covered by the hour hand in 2 days is 2/3rd of the total area covered by the minute hand in one day.What is the ratio of the length of the minute hand to the length of the hour hand?  
a)1:2      b)2:1      c)4:1      d)1:4
9. There are two clocks,which are set to correct time on sunday at 12 noon.The first clock gains 2 1/2 minutes every hour while the second clock loses 1 1/2 minutes every hour.When will they be 2 hours apart?  
a)Monday 9 p.m      b)Tuesday 12 midnight  
c)Monday 6 p.m      d)Tuesday 6 a.m
10. A watch which is set correctly at 12 noon on sunday shows 6:20 a.m on Monday when the correct time is 6:00 a.m.If the correct time is 6:00 p.m. on tuesday,what time does the clock show?  
a)6:45 p.m      b)7:00 p.m  
c)7:30 p.m      d)8:00 p.m
11. At what time between 1 and 2'o clock are the two hands coincident?  
a)1:12 5/11      b)1:07 5/11  
c)1:05 5/11      d)1:08 5/11
12. Ajay started a test at a certain time between 5 and 6 and ended between 6 and 7.He observed that the minutes and hours hands when he ended the test had inter-changed their positions with those when he started.How much time did he take for the test?  
a)52 3/11      b)55 5/13  
c)47 4/9      d)45 min
13. A clock is started at noon.By 10 minutes past 5,the hour hand has turned through  
a)145 deg      b)150 deg

c)155 deg                      d)160 deg

14. An accurate clock shows 8'o clock in the morning. Through how many degrees will the hour hand rotate when the clock show 2'o clock in the afternoon?  
a)144 deg                      b)150 deg  
c)168 deg                      d)180 deg
15. At 3:40 the hour hand and the minute hand of a clock form an angle of  
a)120      b)125      c)130      d)135
16. The angle between the minute hand and the hour hand of a clock when the time is 8:30 is  
a)80      b)75      c)60      d)105
17. The angle between the minute hand and the hour hand of a clock when the time is 4:20 is  
a)0      b)10      c)5      d)20
18. At what angle the hands of a clock are inclined at 15 minutes past 5?  
a)58  $1/2$       b)64      c)67  $1/2$       d)72  $1/2$
19. The reflex angle between the hands of a clock at 10:25 is  
a)180                              b)192  $1/2$   
c)195                              d)197  $1/2$
20. How many times do the hands of a clock coincide in a day?  
a)20      b)21      c)22      d)24
21. How many times do the hands of a clock are straight?  
a)22      b)24      c)44      d)48
22. How many times are the hands of a clock at right angle in a day?  
a)22      b)24      c)44      d)48
23. How many times in a day, are the hands of a clock in straight line but opposite in direction?  
a)20      b)22      c)24      d)48
24. How much does a watch lose per day, if its hands coincide every 60 minutes?  
a)32  $8/11$                               b)36  $5/11$   
c)90 min                              d)96 min
25. At what time, in minutes, between 3'o clock and 4'o clock, both the needles will coincide each other?  
a)5  $1/11$                               b)12  $4/11$   
c)13  $4/11$                               d)16  $4/11$
26. At what time between 9 and 10'o clock will the hands of a watch be together?  
a)45 min past 9                              b)50 min past 9  
c)49  $1/11$  past 9                              d)48  $2/11$  past 9
27. At what time between 7 and 8'o clock will the hands of a clock be in the same straight line but, not together?  
a)5 min. past 7                              b)5  $2/11$  past 7  
c)5  $3/11$  past 7                              d)5  $5/11$  past 7
28. At what time between 4 and 5'o clock will the hands of a watch point to opposite directions?  
a)45 min past 4                              b)40 min past 4  
c)50  $4/11$  past 4                              d)54  $6/11$  min past 4
29. At what time between 5:30 and 6 will the hands of a clock be at right angles?  
a)43  $5/11$                               b)43  $7/11$  past 5  
c)cannot be determined                              d)none

30. A watch which gains uniformly in 2 min low at noon on Monday and is 4 min.48sec fast at 2 pp.m.on the following monday. When was it correct?  
 a)2 p.m on Tuesday  
 b)2 p.m on wednesday  
 c)3 p.m on Thursday  
 d)1 p.m on friday
31. A watch which gains 5 seconds in 3 minutes was set right at 7 a.m.In the afternoon of the same day,when the watch indicated quarter past 4'o clock,the true time is  
 a)59 7/12 past 3      b)4 p.m  
 c)5 p.m                d)7 p.m
32. A clock is set right at 8 a.m.The clock gains 10 minutes in 24 hours.What will be the true time whne the clock indicates 1 p.m on the following day?  
 a)48 min past 12      b)48 min  
 c)47 min past 4      d)none
33. A clock is set right at 5 a.m.The clock loses 16 min in 24 hours.What will be the true time when the clock indicates 10 p.m on 4th day?  
 a)12 p.m b)1 p.m c)1 a.m d)11 p.m
34. The minute hand of a clock overtakes the hour hand at intervals of 65 min of the correct time.How much a day does the clock gain or lose?  
 a)10 10/43 in 24 hrs  
 b)10 10/23 in 24 hrs  
 c)10 10/34 in 24 hrs  
 d)none
35. Find the angle between the hour hand and the minute hand of a clock when the time is 3:25  
 a)42      b)45      c)47 1/2 d)73
36. At what time between 2 and 3'o clock will the hands of a clock be together?  
 a)10 10/11 min past 2  
 b)10 10/11 past 3  
 c)10 10/11 past4  
 d)none
37. At what time between 4 and 5'o clock will the hands of a clock be at right angle?  
 a) 5 5/11 min past 4  
 b)38 2/11 min past 4  
 c)both a&b      d)none
38. At what time between 4 and 5'o clock will the hands of a clock be at right angle?  
 a) 5 5/11 min past 4  
 b)38 2/11 min past 4  
 c)both a&b      d)none
39. Find at what time between 8 and 9'o clock will the hands of a clock be in the same straight line but not together  
 a)10 10/11 min past 8  
 b)10 10/11 past 7  
 c)10 10/11past2      d)none
40. At what time between 5 and 6'o clock are the hands of a clock 3 minutes apart?  
 a)31 5/11 min past 5  
 b)31 5/18 min past 5  
 c)31 5/19 min past 5  
 d)31 5/16 min past 5

# DIRECTIONS

1. Sham travels 7 km north , then turns right and walks 3 km. He again turns to his righthand side and moves 7 km forward.how many km is sham away from the place of his starting the journey?  
a)7 km    b)3    c)8    d)17
2. Reeta drives to North of her place of stay A and finds after travelling 25 km that she has driven in the wrong direction. she then turns to the right and travels 2 km and then again turns right and drives straight another 25 km. how much distance she has now to cover to go back to the point from where she has started?  
a)25    b)2    c)5    d)68
3. Rana travels 10 km north turns left and travels 4 km and then again turns right and covers another 5km. He then turns to righthand side and travels another 4 km. How far is he from the point of starting his journey?  
a)15    b)8    c)5    d)none
4. Seeta and ram both start from a point towards north.Seeta turns to left after walking 10 km. Ram turns right after walking the same distance.seeta waits for some time and then walks another 5 km,whereas ram walks only 3 km. they both then return to their respective south and walk 15 km forward. how far is seeta from ram?  
a)15    b)10    c)8    d)12
5. A taxi driver commenced his journey from a point and drove 10 km towards north and turned left and drove another 5 km.after waiting to meet one of his friends, he turned to his right and continued to drive another 10 km.He has covered a distance of 25 km so far but in which direction he now may be? a)north    b)east    c)west    d)south
6. There is a ring road connecting points A,B,C and D.The road is in a complete circular form but having several approach roads leading to the centre. exactly in the centre of the ring road there is a tree which is 20 km from point A on the circular road.you have taken a round of the circular road starting from point A and finish at the same point after touching points B,C and D.you then drive 20km interior towards the tree from point A and from there reach somewhere in between B and C on the ring road. How much distance you have to travel from the tree to reach the point between B and C on the ring road?  
a)20    b)15    c)79    d)78
7. A tourist drives 10 km towards east and turns to righthand side and takes a drive of another 3 km .he then drives towards west another 3km . he then turns to his left and walks another 2km.Afterwards, he turns right and travels 7 km. How far is he from his starting point and in which direction?  
a)10km east    b)8km north  
c)5 km west    d)5km south
8. Rahul walks 30 metres towards south.then turns to his right and starts walking straight till he completes another 30 meters.then again turning to his left he walks for 20 meters.he then turns to his left and walks for 30 metres.how far is he from his initial position?  
a)50    b)78    c)23    d)67
9. Vandana drove her car for 30 km due north. then she turned left and drove for 40 km,she then turned left again and drove yet another 30 km.again she turned left and drove her car 50km.how far do u think she actually drove her car from the initial position?  
a)10    B)5    c)89    d)none
10. Shaloo ran 20 m to the east, then he turned left and walked for 15m then turned right and went 25 m and then turned right again and went 15m . how far was shaloo from the starting point?  
a)45    b)35    c)25    d)15

11. A girl leaves from her home. She first walks 30m in north west directions and then 30. in south west direction. next she walks 30m in south east direction. finally, she turns towards her house. in which direction is she moving?  
a) north east      b) east      c) west      d) south
12. From his house Lokesh went 15kms to the north. then he turned west and covered 10 kms. then he turned south and covered 5kms. finally, turning to east he covered 10kms. in what direction is he from his house?  
a) east      b) west      c) north      d) south
13. Kunal walks 10km towards north. from here he walks 6km towards south. then, he walks 3km towards east. how far and in which direction is he with reference to his starting point?  
a) 5km west      b) 7km west  
c) 7km east      d) 5km north east
14. A man is facing south. he turns 135 degrees in the anti clockwise direction and then 180 degrees in the clock wise direction. which direction is he facing now?  
a) north east      b) north west  
c) south east      d) south west
15. A man facing northwest. he turns 90 degrees in the clockwise direction and then 135 degrees in the anti clockwise direction. which direction is he facing now?  
a) east      b) west      c) north      d) south
16. A rat runs 20' towards east and turns to right, runs 10' and turns to right, runs 9' and again turns to left. runs 5' and then turns to left, runs 12' and finally turns to left and runs 6'. now, which direction is the rat facing?  
a) east      b) west      c) north      d) south
17. A walks 10metres in front. and 10 metres to the right. then everytime turning to his left walks 5, 15 and 15 mtrs respectively. how far is he now from his starting point?  
a) 5      b) 27      c) 7      d) 2
18. Laxman went 15kms to the west from my house, then turned left and walked 20 kms. He then turned east and walked 25kms and finally turning left covered 20kms. how far was he from his house?  
a) 5      b) 10      c) 40      d) 80
19. I am facing east. I turn 100 deg in the clockwise direction and the 145 deg in the anti clockwise direction. Which direction am I facing now?  
a) east      b) north east  
c) north      d) south west
20. Deepa moved a distance of 75 mtrs towards the north. she then turned to the left and walking for about 25 mtrs, turned left again and walked 80 mts. finally, she turned to the right at an angle of 45 deg. In which direction was she moving finally?  
a) north east      b) north west  
c) south      d) south west

#### Questions 21-24

If you start running from a point towards north and after covering 4kms you turn to your left and run 5km, and then again turn to your left and run 9km and then turn to left again and run another 6km and before finishing you take another left and run 1km then answer questions 21 - 24

21. How many km are you from the place you started?  
a) 1      b) 2      c) 3      d) 4
22. In which direction will you be running while finishing?  
a) east      b) west      c) north      d) south
23. After taking the second turn, in which direction will you be running?  
a) east      b) west      c) north      d) south

24. From the finishing point if you have to reach the point from where you started, in which direction will u have to run?  
a) east    b)west    c)north    d)south

Directions(25-27): Study the given information and answer the following questions

- I) there are 6 check posts A,B,C,D,E AND F  
II) check post F is 15 kms to the north of D which is 25 kms to the north east of B  
III) check post A is 5kms west of E and 15 kms to the south west of C  
IV) B,A and E are in straghtline  
V) the check posts B and E are 30kms apart from each other

25. Which check post is the farthest to the south west of D?  
a) A    b)B    c)C    d)D

26. Which port is the nearest and to the north east of E?  
a)A    b)B    c)C    d)D

27. If a jeep moves from E to F via A,B and D, how much distance it will have to cover?  
a)130    b)189    c)289    d)797

Directions(28-32): Ram walks 2km towards north and turn to his right and walks 4km more. He then turns to his right and walks 4km and turns again to his right and walks another 4km. Here he meets renu coming from the opposite directions.They both stop here.

28. After taking the first turn, in which direction was Ram going?  
a)south    b)north    c)west    d)east

29. If the starting point is marked A and finishing point is marked B,What will be the distance between these points?  
a) 10    b)8    c)6    d)2

30. From which direction was Ram coming?  
a)south    b)north    c)west    d)east

31. After taking the second turn, in which direction was Ram walking?  
a) west    b)north    c)south east    d)south

32. If ram is to again reach the point from where he started in which direction will he have to go from where he's standing now?  
a)east    b)north    c)south east    d)north east

33. If A is to the south of B and C is to the east of B, in what direction is A with respect to C?  
a)northe east    b)northwest  
c)south east    d)south west

34. There are 4 towns P,Q, R and T.Q is to the south west of F,R is to the east of Q and south east of P,and T is to the north of R in line with QP.In which direction of P is T located?  
a)south east    b)north  
c)north east    d)east

35. If south east becomes north,north east becomes west and so on, what will west become?  
a)northe east    b)north west  
c)south east    d)south west

36. One morning after sunrise,Gopal was standing facing a pole.The shadow of the pole fell exactly to his right.What direction was he facing?  
a)south    b)east  
c)west    d)data inadequate

37. One morning after sunrise reeta and kavitha were talking to each otherface to face at Tilak square.If kavita's shadow was exactly to the right of reeta, which direction kavitha was facing?  
a)north    b)south



c)east                      d)data inadequate

38. One morning after sunrise,vikram and shailesh were standing in a lawn with their backs towards each other.vikrams shadow fell exactly towards left hand side.Which direction was shailesh facing?  
a)east    b)west    c)north    d)south
39. One evening before sunset two friends sumit and mohit were talking to each other face to face.if mohits shadow was exactly to his right side,which direction was sumit facing?  
a)north                      b)south  
c)west                      d)none of these
40. A clock is so placed that at 12 noon its minute hand points towards north east.In which direction does its hour hand point at 1.30 pm?  
a)north    b)south    c)east    d)west

INDUS EDUCATION

# LETTER SERIES

1. D I L Q T Y B G ?  
A)H      B)I      C)O      D)P      E)J
2. X U S P N K I ?  
A)J      B)K      C)M      D)F      E)O
3. D F I M R ?  
A)S      B)U      C)U      D)X      E)Z
4. B D G I L N ?  
A)O      B)Q      C)S      D)U      E)Q
5. D I L Q T Y B G ?  
A)H      B)J      C)R      C)J      E)Q
6. J E Z U P J ?  
A)K      B)M      C)O      D)P      E)K
7. H V G T F R E P E N ?  
A)KL      B)LM      C)MN      D)NO      E)CL
8. T U N K H ?  
A)F      B)L      C)S      D)E      E)R
9. A D E H I L \_ Q T U X  
A)AY      B)VB      C)CW      D)DX      E)MP
10. A D C F  
C F E H  
E H G K  
O R ? ?  
A)LK      B)MN      C)ST      D)QT      E)XY
11. A B C a b c D E F \_ ?  
A)ghi      B)GHI      C)ABC      D)def
12. m m p p s ?  
A)Vv      B)vv      C)ST      D)pp
13. 9 15 23 33 ?  
A)44      B)36      C)38      D)45
14. 12 8 14 6 16 ?  
A)18      B)32      C)5      D)4
15. 9 6 16 10 30 18 ? 34  
A)36      B)60      C)58      D)90
16. 68 81 96 ? 132  
A)105      B)110      C)130      D)113
17. 2 5 9 ? 20 27  
A)48      B)12      C)14      D)24
18. 30 23 17 12 ? 5  
A)6      B)7      C)8      D)9
19. 10 18 24 ?? 130 254 258

- A)32      B)60      C)68      D)66
20. 18 10 6 4 3 ?  
A)8      B)4      C)3.5      D)2.5
21. a D g J m P  
A)sp      B)sP      C)sV      D)Sv
22. aa bbb cccc ?  
A)ddjjj      B)dddjj      C)ddddd      D)DDDDD
23. accce ACCCE ?  
A)GJJJK fjjjk      B)GIIIK giiik  
C)GIIIK ghhhh      D)GIIIK GiiiK
24. AI BJ CK ?  
A)LM      B)GH      C)AR      D)SE      E)DL
25. AM BN EI FJ CO GK DP \_\_\_\_  
A)PQ      B)QR      C)QT      D)HL      E)HO
26. A E J  
P T ?  
A)U      B)V      C)R      D)W      E)X
27. AC EG BD FH IK \_\_\_\_  
A)LM      B)OP      C)IJ      D)JL      E)JK
28. A C F J O ?  
A)P      B)Q      C)U      D)V      E)L
29. A D E H I L ?  
A)MP      B)MN      C)MO      D)MQ      E)NM
30. CD HI MN ??  
A)QS      B)RS      C)OP      D)PQ      E)ST
31. I M Q U X B ?  
A)C      B)D      C)F      D)G      E)E
32. Z X V T R P ?  
A)Q      B)R      C)S      D)M      E)N
33. 4 9 20 43 90 ?  
A)180      B)182      C)179      D)185
34. 5 9 16 29 54 103 ?  
A)102      B)94      C)103      D)200
35. 5 8 12 17 23 ? 38  
A)26      B)28      C)30      D)29
36. 4 5 7 ? 19  
A)8      B)9      C)10      D)11
37. 4 10 22 46 ?  
A)56      B)66      C)76      D)94
38. 2 3 4 25 4 9 16 ---  
A)625      B)689      C)79      D)272
39. A H L E  
E N T ?

A)U      B)V      C)W      D)O

40. B E I N T ?

A)R      B)S      C)U      D)A      E)V

INDUS EDUCATION

# PERMUTATION AND COMINATIONS

## PERMUTATIONS AND COMBINATIONS

- How many words can be formed using all the terms of the word "SPECIAL" without repetition such that the vowels occupy the even places  
a) 144    b) 720    c) 2520    d) 1520
- In how many ways can the letters of the word "EQUATION" be arranged so that consonants appear in even places only  
a) 576    b) 0    c) 1440    d) 2880
- In how many ways can the letters of the word "DOUBLE" be arranged such that no two vowels are together  
a)  $6! - 4!$     b)  $6! - 4!3!$   
c)  $3!4!$     d) None
- The number of ways of selecting 30 items at a time from 45 items is  
a)  $45!/30!15!$     b)  $45!/30!$   
c)  $45!/15!$     d)  $45!30!$
- In how many ways can 8 persons sit in a row of 10 chairs  
a)  $8!$     b)  ${}^{10}C_8$     c)  $8^{10}$     d)  ${}^{10}C_8 \cdot 8!$
- A man has 8 friends whom he wants to invite for a dinner. The number of ways in which he can invite at least 4 of them is  
a)  ${}^8C_4$     b) 48    c) 126    d) 163
- How many 5 digit numbers can be formed using the digits 0 to 8 if no digit is to occur more than once in any number  
a) 1680    b) 6720    c) 13440    d) None
- How many 4 digit numbers that are divisible by 4 can be formed, using the digits 0 to 7 if no digit is to occur more than once.  
a.    a) 520    b) 370    c) 345    d) None
- In how many ways can 4 prizes each having 1st, 2nd and 3rd positions be given to 3 boys, if each boy is eligible to receive more than one prize  
a)  ${}^{12}P_3$     b)  $6^4$     c)  $4^3$     d)  ${}^{12}C_3 \cdot 3!$
- In how many ways can the crew of 10 oared boat be arranged, when of the 10 persons available, 2 of whom can row only on the bow side and 3 of whom can row only on the stroke side.  
a)  $10!/2!3!$     b)  $10!/7!8!$     c)  $5!/2!3!$     d)  $(5!)^3 / 3!2!$
- In how many arrangements of the word "EXAMINATION", A's do not come together  
a)  $11! - 10!2!$     b)  $10! \times 10$     c)  $11! \times 10/2$     d)  $9 \times 10!/8$
- In how many ways can 120 students be divided into 3 sections of 30, 40, 50 each?  
a) 120!    b)  $30 \times 40 \times 50$     c)  $30! \times 40! \times 50!$     d) None
- 12 friends go out for a dinner to a restaurant where they find 2 circular tables, one with 7 chairs and the other with 5 chairs. In how many ways can the group settle down themselves for the dinner?  
a)  $12!/5!7!$     b)  $12!/35$     c)  $12!$     d)  $12!5!7!$
- In how many ways can 5 students and 5 teachers sit around a circular table so that no two teachers sit together  
a)  $4!4!$     b)  $5!5!$     c)  $4!5!$     d)  $5! \cdot 6P_5$

15. Find the number of selections that can be made from the word "ENTRANCE"  
a)70 b)36 c)35 d)72
16. If all possible four digit numbers are formed using the digits 1, 2, 3, 4 without repetition and arranged in ascending order, then the position of the number 3241 is  
a)14 b)15 c)16 d)12
17. If all the letters of the word RATE are taken and permuted and arranged in alphabetical order as in a dictionary, then what is the rank of the word TEAR  
a)20 b)23 c)22 d)21
18. In which regular polygon are the diagonals double the number of sides?  
a)quadrilateral  
b)pentagon  
c)hexagon  
d)heptagon
19. There are 15 points in a plane of which 8 of them are on a straight line. Then how many triangles can be formed  
a)399 b)400  
c)234 d)72
20. There is a question paper consisting of 10 questions. Each question has an internal choice of 2 questions. In how many ways can a student attempt one or more questions in the paper?  
a)  $2^{10}$  b)  $3^{10}$  c)  $2^{10} - 1$   
d)  $3^{10} - 1$
21. There are 5 copies of a maths book, 4 copies of a physics book and 3 copies of a chemistry book. The number of ways in which one or more books can be given away  
a)89 b)119 c)60 d)59
22. There are 5 different maths books, 4 different physics books and 3 different chemistry books. The number of ways in which one or more books can be given away  
a)  $(2^6 - 1)(2^4 - 1)(2^3 - 1)$  b)  $2^{12}$  c)  $2^{12} - 1$  d) None
23. In how many ways can a delegation of 5 members be formed from 4 ladies and 5 gentlemen, if the delegation has to comprise exactly 2 ladies and 3 gentlemen  
a)60 b) 16 c) 32 d) 240
24. In the above problem, in how many ways can the delegation be formed so as to include at least 3 ladies?  
1) 126 2) 125 3) 20 4) 45
25. A number lock contains 3 rings, each ring containing 10 numbers. How many attempts can be possible attempts to open the lock  
1) 30 2)  $3^{10}$  3)  $10^3$  4)  $10!3!$

# LOGICAL REASONING -1

Direction: Seven friends go fin trekking frequently. This includes four men Peter, Mika, Ted and Gomes and three women Jane, Pummy, and Ryma. To go to the destination, they can either travel by a Mercedes, a Rolls Royce or BMW, which belongs to Mika, Gomes and Pummy respectively. Gomes cannot go by Mika's vehicle. Ted cannot go on Monday or Thursday. Peter will not go by Gomes' car. Jane will go for trekking only if Ryma goes Pummy will go, only if Peter and Ted are going.

1. Which of the following group will travel by Mika's car on Tuesday?  
(a) Peter, Mika, Ted, Pummy and Jane. (b) Peter, Mika, Ted, Gomes and .lane.  
(c) Peter, Mika, Gomes, Pummy and Ryma. (d) Peter, Mika, Ted, Pummy and Ryma.
2. If Pummy goes on Wednesday, not by her own car, then which of the following must be true?  
(a) There must be a maximum of two men. (b) They go by Mika's car.  
(c) Jane does not go with the team. (d) Ryma does not go.
3. If Ryma is unable to go on Monday by Gomes' car, how many friends can go for the trip?  
(a) 1 (b) 2 (c) 3 (d) 4

Directions: There is a certain gentleman named Meethabhai who has a sweet tooth and is constantly chewing on some candy. Of late he has decided to switch brands but is in a fix as to how it should be done. He is thinking of four varieties of sweets: a mint candy, an orange candy, chewing gum and a chocolate. These four varieties are branded Roli, Goli, Poli and Moli, not necessarily in that order, and are manufactured by Halwai, Perk, Bar One and Serin.

1. The candy named Roli is manufactured by Serin.
2. The mint candy is manufactured. by Halwai.
3. The chocolate is branded Poli and is not manufactured by Bar One.
4. The chewing gum is branded Moli.
4. Perk manufactures.  
(a) orange candy (b) the chocolate (c) mint candy (d) the chewing gum.
5. Goli is.  
(a) a chocolate manufactured by Bar One. (b) manufactured by Halwai and is a mint candy.  
(c) manufactured by Halwai and is an orange candy. (d) manufactured by Perk and is a chewing gum.
6. Meethabhai purchases two types of sweet by brand-names which come first and third in the alphabetical order. Of the two sweets that he does not buy, one is.  
(a) the orange candy. (b) the candy manufactured by Perk.  
(c) the chocolate (d) the candy manufactured by Bar One.
7. After reading the first paragraph and statements (a) only, it is possible to deduce. That,  
I. Roli is the orange candy or the mint candy.  
II. Serin manufactures the orange candy or the mint candy.  
III. Poli is manufactured either by Serin or by Perk.  
(a) I only (b) II only (c) III only (d) I and II only

Directions: During one of Monu's holidays, he paid a visit to his village. He met four relatives among whom one was his tau (father's elder brother), the others being his uncle (father's younger brother), aunt, and a cousin. Each of them was wearing one of the following dresses- trouser, dhoti, sari and jeans. Shriram, Mohan, Dimpu, and Rinku were each in one of the following colours- black, blue, white and pink. With this information, answer The following questions.

- Rinku and her aunt were not wearing white dhoti.
  - Shriram's trouser was neither blue nor pink.
  - His cousin was wearing blue jeans.
  - Dimpu and Rinku are the only females.
8. How is Rinku related to Monu?  
(a) Aunt (b) Uncle (c) Cousin (d) cannot say

9. Who wore the sari and what was the colour of the sari?  
(a) Dimpu, blue (b) Rinku, pink (c) Dimpu, pink (d) cannot say
10. The dress of his uncle was?  
(a) White dhoti (b) Blue trouser (c) Black trouser (d) cannot say
11. How is Shriram related with Mohan?  
(a) Uncle (b) Brother (c) Nephew (d) cannot say
12. How is Mohan related with Monu?  
(a) Cousin (b) Uncle (c) Tau (d) cannot say

Directions: A and B are mothers-in Law of C and D, not necessarily in that order B is daughter of A. C is the only male in the group.

13. How is C related to D?  
(a) Spouse (b) siblings (c) father (d) Indeterminable.
14. If B is the only daughter of A and B is the mother in law of D then C is \_\_\_\_\_ of D  
(a) Husband (b) father-in law (c) brother (d) brother in law

Directions: On a certain day, Bhanu, Gullu and Puja made following statements. Puja will either speak truth in 2 out of 3 statements or will speak truth in 1 out of 3 statements. Bhanu and Gullu will either speak truth or lie through out.

Bhanu: Puja loves me. The sky is cloudy.

Gullu: Puja loves me. It's sunny today.

Puja: It's a bright sunny day. I love Bhanu. I've made more true statements than false.

15. If Puja speaks truth in more than one statements then what kind of day is it?  
(a) Sunny (b) Cloudy (c) Either sunny or cloudy (d) Indeterminable

16. If it's a sunny day then whom does Puja love?  
(a) Bhanu (b) Gullu (c) Both Bhanu and Gullu (d) Indeterminable..

Directions: Seven friends Manu, Amu, Deepu, Ranu, Preeti, Jaya and Dolly planned for a picnic. They arranged four motorbikes, Yamaha, Hero Honda, Suzuki and Kawasaki. On Each of the first three bikes, there were two friends. Amu was not with Manu or Preeti. Deepu was not with Ranu. Jaya was either with Dolly or with Ranu.

17. Who were on the first three bikes among the following three pairs?  
(a) Manu and Preeti, Amu and Dolly, Deepu and Ranu.  
(b) Manu and Preeti, Amu and Deepu, Jaya and Dolly  
(c) Manu and Amu, Deepu and Dolly, Preeti and Jaya.  
(d) Manu and Deepu, Amu and Preeti, Ranu and Jaya
18. If Deepu was with Dolly then which of the following will be true?  
(a) Amu was with Ranu. (b) Amu was with Preeti.  
(c) Manu was with Ranu. (d) Amu was riding Kawasaki.
19. If Deepu was riding a Kawasaki, then who was with Manu?  
(a) Amu (b) Ranu (c) Preeti (d) Jaya
20. If Dolly was with Preeti, then which of the following cannot be true?  
(a) Jaya was with Ranu. (b) Amu was with Deepu.  
(c) Manu was in Kawasaki (d) Deepu was in Kawasaki.
21. If Dolly was on a Kawasaki, in how many different ways the remaining pairs can be formed?  
(a) 1 (b) 2 (c) 3 (d) 4

**Directions:** Mr. Mountbatten loved to climb mountains. he used to go on Many expeditions where he used to climb exactly five mountains and come back. On one such expedition he climbed Mt. Everest, Mt. Kilimanjaro, Mt. Abu, Mt. Andes and Mt. Parvati. Kilimanjaro is higher than atleast one mountain. Mountbatten has his Satellite phone using which he calls up his home just as soon as he reaches the top. His personality is one of an ultra cool person. He has absolutely no tensions in life and he believes that if he climbs the first mountain with a particular speed then according to him there is no need to climb the other mountains at a speed slower or faster than the first one. He always starts climbing a mountain at



exactly 9:00 AM and keeps on climbing non stop till he reaches the top and immediately starts climbing down. He always starts climbing a mountain on a new day. Just before he starts climbing he calls up It is wife and does so again just as soon as he reaches the summit. On this particular expedition, using only his phone calls as a guide his wife could arrange the mountains in the ascending order of heights. What she told us was when her husband climbed Everest the time he took between the two calls was the least. The duration between the two calls for Parvati was the most. The time taken between the two calls for Abu was exactly between the time taken for Andes and Kilimanjaro.

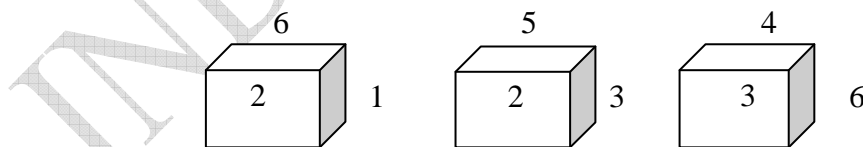
22. Which mountain is the tallest?  
(a) Everest (b) Kilimanjaro (c) Parvati (d) None of these.
23. Least time between the two calls would have been when he would have climbed the mountain.  
(a) Abu (b) Andes (c) Everest (d) None of these.
24. Which is the mountain that is not the tallest or the shortest? It does not answer to the second tallest of the second shortest mountain.  
(a) Andes (b) Kilimanjaro (c) Abu (d) None of these
25. Arranged in ascending order of heights, the order would be  
(a) Everest, Kilimanjaro, Abu, Andes, Parvati (b) Everest, Andes, Abu, Kilimanjaro, Parvati  
(c) Could be option A or B (d) None of these.

Directions: Five women decided to go shopping to M.G. Road, Bangalore. They arrived at the designated meeting place in the following order. 1. Archana, 2. Chellamma, 3. Dhenuka, 4. Helen and 5. Shahnaz. Each woman spent at least Rs 1000. Below are some additional facts about how much they spent during their shopping spree.

- (i) The woman who spent Rs 2234 arrived before the lady who spent Rs 1193
- (ii) One woman spent Rs 1340 and she was not Dhenuka
- (iii) One woman spent Rs 1378 more than Chellamma
- (iv) One woman spent Rs 2517 and she was not Archana
- (v) Shahnaz spent the largest amount and Chellamma the smallest

26. What is the difference between amount spent by Helen and that spent by Dhenuka?  
(a) Rs 1077 (b) Rs 1177 (c) Rs 1167 (d) Rs 177
27. Which of the following is NOT an amount spent by them  
(a) Rs 2571 (b) Rs 2517 (c) Rs 2234 (d) None of these
28. Which of the following has the same ranking when arranged in descending order for amount spent and order of arrival?  
(a) Shahnaz (b) Chellamma (c) Helen (d) None of these

The following figure depicts three views of a cube. Based on this, answer questions



29. The number on the faces opposite to the face marked 5 is \_\_\_\_\_. 6
30. Which of the following pairs does not correctly give the numbers on the opposite faces?  
(a) 6,5 (b) 4,1 (c) 1,3 (d) 4,2

# LOGICAL REASONING -2

## Directions: for questions 1 and 2:

In a game played by two people there are initially N matchsticks kept on a table. A move in the game consists of a player removing either one or two matchsticks from the table. The one who takes the last matchstick loses. Players make moves alternately. The player who will make the first move is A. The other player is B.

- The smallest value of N (greater than 5) that ensures a win for B is?
  - 7
  - 6
  - 10
  - 8
- The largest of N (less than 50) that ensures a win for B is ?
  - 46
  - 47
  - 48
  - 49
- There are X pigeons and Y Mayanas in a cage. One fine morning P of them escaped to freedom. If the bird keeper, knowing only that  $P = 7$ , was able to figure out without looking into the cage that at least one pigeon had escaped, then which of the following does not represent a possible (x, y) pair?
  - (10, 8)
  - (7, 2)
  - (25, 6)
  - (12, 4)
- Consider the following steps
 

Step 1: Put  $X = 1$ ,  $Y = 2$

Step 3: Replace Y by  $Y+1$

Step 5: Go to step 2

Step 2: Replace X by XY

Step 4: If  $Y=5$  then go to step 6 otherwise go to step 5

Step 6: Stop

Then the final value of X equals

- 1
- 24
- 120
- 720

**For questions 5 to 7:** The following questions relate to a game to be played by you and your friend. The game consists of a 4 x 4 board (see below) where each cell contains a positive integer. You and your friend make moves alternately. A move by any of the players consists of splitting the current board configuration into two equal halves and retaining one of them. In your moves you are allowed to split the board only vertically and to decide to retain either the left or the right half. Your friend, in his/her moves, can split the board only horizontally and can retain either the lower or the upper half. After two moves by each player a single cell will remain which can no longer be split and the number in that cell will be treated as the gain (in rupees) of the person who has started the game. A sample game is shown below:

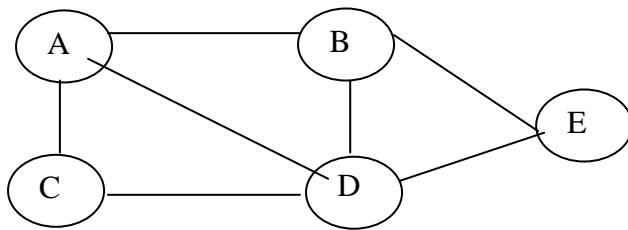
Initial board	After your move (retain left)	After your friend's move (retain upper)	After your move (retain right)	After your friend's move (retain upper)
2124	21			
5167	51	21	1	
9132	91	51	1	1
6184	61			

So your gain is Re 1. With the same initial board configuration as above and assuming that you have to make the first move, answer the following questions.

- If you chose (retain right) (retain left) in your turn, the best move sequence for your friend to reduce your gain to a minimum will be
  - (retain upper) (retain lower)
  - (retain lower) (retain upper)
  - (retain upper) (retain upper)
  - (retain lower) (retain lower)
- If both of you select your moves intelligently then at the end of the game your gain will be
  - 4
  - 3
  - 2
  - NOT
- If your first move is (retain right), then whatever moves your friend may select you can always force a gain of no less than
  - 3
  - 6
  - 4
  - NOT

**Directions for questions 8 and 9:** use the following information

There are 5 cities, A, B, C, D and E connected by 7 roads as shown in the figure below.



Design a route such that you start from any city of your choice and walk on each of the seven roads once and only once not necessarily returning to the city from which you started.

8. For a route that satisfies the above restrictions, which of the following statement is true?

- a. There is no route, which satisfies the above restriction
- b. A route can either start at C or end at C, but not both.
- c. D can be only an intermediate city in the route.
- d. The route has to necessarily end at E.

9. How many different starting city are possible such that the above restriction is satisfied?

- a. One
- b. Zero
- c. Three
- d. Two

**Directions for questions 10 to 12:** Answer the questions based on the following information.

A, B, C, D, E, F and G are consecutive integers, not necessarily in that order, such that the lowest of these is greater than 50 and the highest is less than 60.

I.  $E - D + 11 = G/4$

II. B is the highest number and is prime x

III.  $C - D = B - A$

IV. A is an odd number and C is an even number

10. The smallest number is

- a. A
- b. D
- c. E
- d. F

11. The number C denotes?

- a. 56
- b. 57
- c. 58
- d. None of These

12.  $E - A$  is equal to

- a. 4
- b. 3
- c. 2
- d. 1

**Direction for questions 13 to 16:** Answer the questions based on the following information

- I. There is a family of seven persons representing three generations.
- II. Rekha's daughter-in-law Vinita is married to the engineer.
- III. Hemant Dass, the police officer, is the father of Mukesh and has two grandchildren.
- IV. Shreya, the granddaughter of one of the lecturers, is studying in standard IV
- V. Utkarsha, the doctor, is the sister of the engineer.
- VI. There are two married couples and both the wives are lecturers and both have tow children.

13. Who are the children of Rekha

- a. Utkarsha and Mukesh
- b. Mukesh and Vinita
- c. Vinita and Utkarsha
- d. Indeterminate

14. What is the profession of Mukesh?

- a. Police Officer
- b. Student
- c. Engineer
- d. Indeterminate

15. Which of the following statements may not be true

- a. Vinita has one son and one daughter
- b. Hemant Dass has two grandchildren
- c. The doctor is the sister-in-law of the lecturer
- d. Mukesh has two children

16. Who among the following are one of the married couples?

- a. Rekha and Hemant Das
- b. Mukesh and Shreya
- c. Hemant Dass and Shreya
- d. Indeterminate

**Direction for questions 17 to 20:** Read the following information and answer the questions that follow. There are eight students – **Boys:** Harish, Girish, Manish, Shirish, & Sanjay **Girls:** Gita, Rita & Sita

Coming from four cities A, B, C and D. They appeared for five subjects, English, history, mathematics, geography and science, in an examination

- I. Harish and Sita passed both in English and Science
- II. Sanjay and Shirish failed both in History and Geography
- III. Harish and Sita are from city A
- IV. A boy from city A failed in history
- V. Two boys from city C failed in History, Geography and Mathematics
- VI. Gita from city B failed only in Science.
- VII. Shirish from city D passed in three subjects.
- VIII. Only two boys failed in English
- IX. Girish passed in two subjects only
- X. Rita and Sanjay failed in Science
- XI. Students from city A passed both in Geography and Mathematics. Rita is from Gita's place and she failed in Mathematics. Manish from city B passed in three subjects and failed in Mathematics. Rita passed in three subjects.
- XII. All girls passed in History

17. Who among the following failed in all subjects?

- a. Gita                                      b. Rita                                      c. Manish                                      d. Sanjay

18. How many students failed in Science?

- a. 1    b. 2    c. 3    d. 4

19. Who among the following passed in all subjects?

- a. Sita    b. Gita    c. Rita    d. Harish

20. Who among the following failed both in history and geography?

- a. Girish, Manish and Harish                                      b. Sanjay, Harish and Shirish  
c. Girish, Shirish and Sanjay                                      d. Shirish, Harish and Rita

21. The last time Rahul bought Diwali cards, he found that the four types of card that he liked were priced Rs. 2.00, 3.50, 4.50 and 5.00 each. As Rahul wanted 30 cards, he took 5 each of two kinds and ten each of the other two, putting down the exact number of 10 rupee notes on the counter payment. How many notes did Rahul give?

- a. 8    b. 9    c. 10    d. 11

**Directions for question 22 to 25:** On a sunny day in Jain Public School two of Amitav, Bimal, and Champak are fighting each other.

The shorter of Amitav and Bimal is the older of the two fighters.

The younger of Bimal and Champak is the shorter of the two fighters.

The taller of Amitav and Champak is the younger of the two fighters.

22. Who is not fighting?

- a. Amitav                                      b. Champak                                      c. Bimal                                      d. Can't say

23. Who is tallest of the three?

- a. Amitav                                      b. Champak                                      c. Bimal                                      d. Can't say

24. Who is shortest of the three?

- a. Amitav                                      b. Champak                                      c. Bimal                                      d. Can't say

25. Who is youngest of the three?

- a. Amitav                                      b. Champak                                      c. Bimal                                      d. Can't say

**Directions for Questions 26-29:** The BCCI has devised a grade system for cricket player. The players will be placed in four grades, I to IV, as given below. The more the points, the better the grade

- Players gaining > 15000 points will be in Grade I
- Players gaining 10001 to 15000 points will be in Grade II

- Players gaining 5000 to 10000 points will be in Grade III
- Players gaining < 5000 points will be in Grade IV

The partial statistics of players is shown in the table. The balance data (as indicated by blank cells in the table) got deleted accidentally.

Players	Runs	Wickets	Catches	Centuries	5-wicket haul
Yuvraj	10000	50			
Tendulkar		80	80	25	5
Sehwag		40	50	10	4
Dhoni	3000	0	60		
Gambhir	8000	0	120	12	
Zaheer	1000	150	50		8
Bhajji	1500	300	75	0	14

For the grading system,

1 run = 1 point, 1 wicket = 20 points, 1 catch = 3 points

In addition, there is bonus point system as well:

1 century = 50 bonus points, every 5-wicket haul = 50 bonus points

Additional information is given below to fill up the blank cells:

- Tendulkar has scored more runs than Yuvraj.
- Gambhir has scored more runs than Sehwag
- Bhajji has taken the highest number of wickets, double of Zaheer.
- Dhoni and Gambhir did not bowl.
- Gambhir has taken the highest number of catches.
- Number of catches taken by Dhoni is equal to half the number of catches taken by Gambhir.

26. Dhoni is in Grade

- a. I                                      b. III                                      c. IV                                      d. Cannot be Determined

27. Zaheer could at best be in Grade

- a. IV                                      b. II                                      c. III                                      d. I

28. Yuvraj could at best be in Grade

- a. I                                      b. II                                      c. III                                      d. IV

29. To be in Grade II, at least how many runs must be scored by Sehwag?

- a. 8351                                      b. Sehwag Can't be in the Grade I  
c. 8350                                      d. None of These

30. Some months back, this year. I was walking through the Central Park in New Delhi. I saw an intelligent looking little boy playing all by himself on the grass. I decided to talk to him and just as an excuse to start the conversation I asked him his age. A mischievous glint flickered in his eyes and he replied. "Two days back I was ten years old, and next year I shall be thirteen. If you know what's today you'll be able to figure out my birthday and that'll give you my age." I looked at him bewildered.

What is his birthday?

- a. 31<sup>st</sup> Dec                                      b. 1<sup>st</sup> Jan                                      c. 2<sup>nd</sup> Jan                                      d. 30<sup>th</sup> Dec

# MATHEMATICAL REASONING

**Directions for question 1 & 2:** N is a natural number and it has only four distinct factors viz. 1, x, y and N itself. (Assume that x is always less than y.)

1. Integer x is a
  - a. Prime number
  - b. Composite number
  - c. Data insufficient
  - d. none of these
2.  $x \cdot x \cdot y =$ 
  - a. N
  - b.  $N^2$
  - c.  $\sqrt{N}$
  - d.  $x \cdot N$

**Directions for questions 3 to 7:** In a quiz, there are ten questions to be answered. Each correct answer gets 3 points. For each wrong answer, 2 points are subtracted from the score. For every question left unanswered, 1 point is subtracted from the score. All students taking the quiz start with a score of 5.

3. The minimum possible final score for a student taking the test is
  - a. 5
  - b. 0
  - c. -5
  - d. -15
4. If a student has answered at least 5 questions correctly, left at least 1 question unanswered and answered at least 1 question incorrectly, then what are the minimum and maximum possible final scores?
  - a. 11 and 17
  - b. 11 and 26
  - c. 14 and 17
  - d. 14 and 22
5. What is the minimum number of questions a student has to answer correctly to get a final score of more than 20?
  - a. 5
  - b. 6
  - c. 7
  - d. 8
6. If a student taking a test got a final score of 0, what is the maximum possible number of incorrect answers he or she could have got?
  - a. 1
  - b. 3
  - c. 5
  - d. 7
7. If in a test only two questions are left unanswered, then which of the following digits cannot occur in the final score?
  - a. 2
  - b. 3
  - c. 6
  - d. 7

**Directions for questions 8 & 9:** At a Railway station, P family is saying goodbye to R family. We do not know who is leaving and who is seeing the other family off. Each member of P family says farewell to each member of R family. To say goodbye, two men shake hands and a man and woman and two women kiss once on the cheek. An eyewitness to the event counted 21 handshakes and 34 kisses.

8. How many men were there?
  - a. 10
  - b. 6
  - c. 22
  - d. Can be (a) or (c)
9. How many women were there?
  - a. 13
  - b. 6
  - c. 34
  - d. Can be (b) or (c)

**Directions for questions 10-12:** Prakash and Ganesh are friends. Prakash has three sons while Ganesh has two. Product of the ages of Ganesh's sons is equal to the product of ages of Prakash's sons. The maximum and minimum age differences between any two of Prakash's sons are 2 years and 1 year respectively. The age difference between the sons of Ganesh is 1 year. One of Ganesh's sons had fallen sick when he was nine-year-old. Ganesh had got married on February 29th, 19 years back. Ages of all the sons of Prakash and Ganesh are integers.

10. What is the age of the youngest son of Prakash?
  - a. 1 year
  - b. 2 years
  - c. 3 years
  - d. None of these
11. What is the age of the eldest son of Prakash?
  - a. 9 years
  - b. 10 years
  - c. 7 years
  - d. Data insufficient
12. What is the age of Ganesh's eldest son?
  - a. 13 years
  - b. 14 years
  - c. Data insufficient
  - d. None of these

**Directions for Questions 13-15:** Read the questions below and mark the correct options

13. How many circles of radius r can be arranged around a circle of radius r so that all the circles touch the central

circle?

- a. 3                                      b. 4                                      c. 5                                      d. 6
14. How many digits are required to number a book containing 200 pages?  
a. 600                                      b. 372                                      c. 492                                      d. 552
15. There were equal number of pigeons on the Mango tree and Banyan tree. Some pigeons from the Mango tree flew over to the Banyan, making the ratio of pigeons on the Mango to pigeons on Banyan 11:15. Therefore the initial number of pigeons on each of these trees can never be  
a. 78                                      b. 38                                      c. 65                                      d. 130

**Directions for questions 16-19**

At the end of the soccer season, every player had scored a prime number of goals and the average of the 11 players was also a prime number. No player's individual tally was the same as anyone else's or as the average. Nobody had scored more than 45 goals.

16. What was the average of their goal scores?  
a. 27                                      b. 23                                      c. 29                                      d. 31
17. What was the maximum number of goals scored by a single player?  
a. 43                                      b. 41                                      c. 37                                      d. 29
18. What was the minimum number of goals scored by a single player?  
a. 5                                      b. 7                                      c. 11                                      d. 13
19. How many players had scored above 20 goals individually?  
a. 6                                      b. 5                                      c. 7                                      d. None of these

**Directions for questions 22:** This game is played by two people. Put 18 dots on a black board or on paper. Each player is to erase 1, 2 or 3 dots in his playing turn. Turns alternate between the two players, i.e. player 1 takes turn 1, then player 2 takes turn 2, then player 1 takes turn 3, and so on. You need not choose a number and stay with it. For instance, you might erase 1 dot on your first turn, 2 dots on your second, 1 dot on your third and 3 dots on your fourth turn. The player who erases the last dot loses. You make the first move, and both players play intelligently, and you win.

20. What is the number of dots that were erased in turns 1, 2 and 3 together?  
a. 5                                      b. 6                                      c. Indeterminate                                      d. None of these

**Directions for questions 23 & 24:** A fortune teller has a unique way of predicting his customer's prognosis. He has three parrots kept in three different cages. Each cage also has three cards with a single digit non zero number inscribed on every card. No two cards have the same number and no cage contains two cards with digits totaling ten. Further, the total of the three cards in the first cage is greater by two than the second cage and by four than the third cage. When a customer asks for a prognosis, the fortune teller lets out the three parrots which randomly pick out one card out of their respective cages. Before the prognosis is made, the fortune teller totals the digits on the three cards picked out and charges the customer the same number of rupees as the total of the cards. One day a customer paid seven rupees for his prognosis.

21. What is the lowest payment possible?  
a. Rs. 5                                      b. Rs. 3                                      c. Rs. 6                                      d. Rs. 8
22. What is the maximum possible that one can pay?  
a. Rs. 22                                      b. Rs. 23                                      c. Rs. 24                                      d. Rs. 45

**Directions for questions 25 & 26:** Ram decides to distribute 205 kg of sweets on his 18th birthday. He wants to make sure that at least one man, one woman and one child should receive the sweets. He wants to distribute the sweets in such a way that each man, woman and child gets 6 kg, 8 kg and 1 kg of sweets respectively. At the end of the day he finds that he has distributed all the sweets among 100 people.

23. How many possible sets of values (in kg) received by men, women and children?  
a. 2                                      b. 3                                      c. 6                                      d. Indeterminable
24. What is the difference between maximum possible number of children and maximum possible number of men?  
a. 60                                      b. 67                                      c. 69                                      d. Indeterminable

**Directions for questions 27 & 28:** There are three gears having 30, 45 and 60 teeth meshed with each other and are in a straight line. The product of the number of teeth and the rpm (revolutions per minute) is always constant. At a certain point of time, the teeth which are meshing are marked red and whenever the initial arrangement repeats, a beep sound is produced. The second gear is running at 60 rpm.

25. How many beep sounds are heard in an hour once the gears start running?

- a. 300                      b. 360                      c. 600                      d. 900

26. After 5 minutes the sound system is changed and now whenever the arrangement repeats the number of beeps produced is one more than on the previous repetition. What is the number of beeps heard in first 6 minutes?

- a. 90                      b. 195                      c. 210                      d. 4095

**Directions for questions 29 & 30:** Ramesh, Ram, Kareem and Mohan collect coins of different countries. Once, when they all were all in Australia, they decided to identify facts about their collections.

Ramesh said, "We all have collected 100 coins altogether".

Ram said, "None of us have collected less than 10 coins".

Kareem said, "Each of us has collected an even number of coins".

Mohan said "But each of us collected a different number of coins".

27. Based on the above, we can say that the number of coins collected by the boy who collected the most could not have exceeded

- a. 64                      b. 54                      c. 60                      d. 58

28. Ramesh collected 54 coins. If Kareem collected two more than double the number collected by Mohan, the number collected by Kareem was.....

- a. 34                      b. 30                      c. 22                      d. 26



## Race, Games Skills

1. In a km race, A beats B by 28 metres or 7 seconds. Find A's time over the course.
2. A runs  $1\frac{3}{4}$  times as fast as B. If A gives B a start of 84 m, how far must winning post be so that A and B might reach it at the same time?
3. A can run 1 km in 3 min. 10 sec. and B can cover the same distance in 3 min. 20 sec. By what distance can A beat B?
4. In a 100 m race, A runs at 8 km per hour. If A gives B a start of 4 m and still wins by 15 seconds, what is the speed of B?
5. A, B and C are three contestants in a km race. If A can give B a start of 40 m and A can give C a start of 64 m, how many metres start can B give C?
6. In a game of 80 points; A can give B 5 points and C 15 points. Then how many points B can give C in a game of 60?

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