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1) Ramya and Vanitha together complete a work in 20 days. Vanitha and Suganthi can together complete the same work in 36 days. Ramya starts a work and do it for 6 days without joining with anyone. Then Vanitha starts her work and continues it for 12 days. Finally, Suganthi finishes the job in 54 days. In how many days can Vanitha alone do the work?

a) 46 days
b) 60 days
c) 36 days
d) 23 days
e) 68 days

2) If 8 men and 5 women can earn Rs. 3390 in 6 days, and 5 men and 7 women can earn Rs. 3600 in 8 days, then in how many days will 7 men and 8 women earn Rs. 6435?

a) 17days
b) 12 days
c) 14 days
d) 11 days
e) 10 days

3) A group of men decided to do a job in 4 days. But since 16 dropped out every day, the job is completed at the end of the 6^{th} day only. If initially each man gets Rs 200 per day, how much wages was got by all the men on the first day?

a) Rs 24600
b) Rs 25870
c) Rs 23420
d) Rs 29790
e) Rs 24000

4) Pipe P and pipe Q together can fill a tank in 15 minutes. Pipe Q, pipe R and pipe S together can fill the tank in 12 minutes. Pipe P, pipe R and pipe S together can fill the tank in 10 minutes. Pipe P, pipe Q and pipe T together can fill the tank in 20 minutes. Find the number of days taken by pipe P and pipe T together to fill half of the tank.

a) 25 minutes
b) 20 minutes
c) 30 minutes
d) 40 minutes
e) None of these

5) A tank can be filled by the Milk pipe in 30 minutes and by the water pipe in 20 minutes. A person opens both the pipes simultaneously and returns at the moment when the bath should be full. However there is a hole which leakages the mixture, he now closes it. After another 6 minutes the tank is full. In what time would the leakage whole will empty the tank?

a) 21 minutes
b) 43 minutes
c) 12 minutes
d) 56 minutes
e) 24 minutes

6) Biman alone can complete a piece of work in 25 days. With the help of Sohan, he can complete the work in _____ days. Sohan and Milan together can complete the work in 10 days. Milan alone can complete the work in _____ days.
Which of the following satisfies the two blanks given in the question?

a) 157/11, 15
b) 10, 30
c) 100/9, 20
d) 12, 25
e) None of these

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7) Ajit, Rama and Sujal together can complete a piece of work in 15 days. Efficiency of Ajit is twice the efficiency of Sujal. Sujal and Vimal can complete the piece of work in 20 days. If Vimal can complete the work in 30 days, find the number of days taken by Rama and Vimal together to complete the work.

a) 22 days
b) 20 days
c) 18 days
d) 15 days
e) None of these

8) Munna and Neeraj entered into a partnership with investment of Rs.K and Rs.(K + 20000) respectively. After one year Munna invested Rs.12000 more. After one more year, Sunny joined them with investment of Rs.(K + 60000). At the end of three years, they earned a total profit of Rs.235000. Share of Munna in the profit is Rs.85000. Find the value of K.

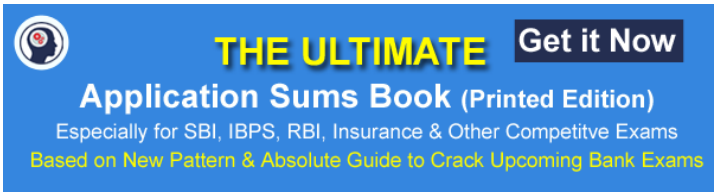
a) Rs.50000
b) Rs.60000
c) Rs.54000
d) Rs.72000
e) None of these

9) Neeraj and Sameer started a business by investing the amount which is in the ratio of 3:7 and the time for which they invested is in the ratio of 3:1 respectively. Neeraj is also responsible for managing the business for which he gets a monthly salary of Rs 4250. If at the end of the year total amount that Neeraj got is Rs 87000, then what is the profit earned by Sameer at the end of the year?

a) Rs 24660
b) Rs 35360
c) Rs 23250
d) Rs 28000
e) Rs 17570

10) Anuj, Vikram and Sunidhi entered into a partnership with investment in the ratio 5:3:4 respectively. After one year, Anuj invested Rs.20000 more and Vikram doubled his investment. After one more year, Sushree joined them with investment equal to initial investment of Anuj and Sunidhi invested Rs.10000 more. At the end of three years, they earned a total profit of Rs.198000. Share of Anuj in the profit is Rs.68000. Find the share of Vikram in the profit.

a) Rs.48000
b) Rs.52000
c) Rs.60000
d) Rs.64000
e) None of these



11) Karthi being the sleeping partner and receives 1/6th of the profit and the remaining is divided between Karthi and Aadhi in the ratio 3:5. If the difference between the profit shares of Karthi and Aadhi is Rs 3060, then what is the share of Naveen?

a) Rs 73540
b) Rs 78750
c) Rs 73440
d) Rs 75640
e) Rs 76440

12) Prem started the business with an investment of Rs._____. After three months, Kavin joined the business and invested Rs. 3800. At the end of the year the total profit earned is Rs. 35000 and the Kavin's share is Rs._____.
Which of the following satisfies the two blanks given in the questions?

a) Rs.2400, Rs.19000
b) Rs.3600, Rs.18000
c) Rs.2800, Rs.17000
d) Rs.3200, Rs.17000
e) None of these

13) A and B entered into the business, A invested Rs. 2550 and B invested Rs.____. After 4 months, A

double his investment for next 6 months then withdrew its investment. If they got total profit of Rs.12200 after a year and A's profit share is Rs.____.
Which of the following satisfies the two blanks given in the questions?
a) Rs.2700, Rs.6800
b) Rs.3000, Rs.6400
c) Rs.3200, Rs.7000
d) Rs.2500, Rs.6400
e) None of these

14) A starts a company and after 3 months B also joins the company. The initial investment of A and B is in the ratio of 3:2, respectively. A and B receives Rs. _____ and Rs. _____ respectively as profit after completion of one year of the company.
Which of the following satisfies the two blanks given in the questions?
I. Rs.2698, Rs.1349
II. Rs.1920, Rs.960
III. Rs.2576, Rs.1293
a) Only I
b) Only II
c) Only III
d) Only I and II
e) Only II and III

15) A shopkeeper falsely weights an article 25% less than actual weight and sells it to customers. If he had used the correct weight the profit would have been 10%. What is the approximate effective profit percentage?
a) 47%
b) 35%
c) 26%
d) 21%
e) 42%

16) Jeevita bought an article and marked a certain price on the article. She sold the article at a discount of 8% on the marked price such that selling price of the article is 15% more than the cost price of the article. If she marked the price of the article Rs.500 more than the cost price, profit earned by Jeevita is what percent of the price marked by her?
a) 12%
b) 20%
c) 16%
d) 18%
e) None of these

17) A sells an item to B at 30% profit. B sells it to C at 40% profit and C sells it to D at Rs 350 profit. The difference between the cost price of D and the cost price of A is Rs 1252. How much did B pay to A for the item?
a) Rs 2170
b) Rs 1260
c) Rs 1430
d) Rs 2603
e) Rs 1469

18) Raghav bought some chairs and tables from a shopkeeper of ratio 7:6. Marked price of a chair and a table is in the ratio 4:5 and shopkeeper gives discount of 10% and 20% on chairs and tables respectively. If total discount offered is Rs 2640, then find the total selling price of tables.
a) Rs 7200
b) Rs 4300
c) Rs 3400
d) Rs 8700
e) Rs 4500

19) If shop A gives 20% discount for an article while shop B gives a discount of 10% for the same product which has the same price. If the man spends Rs 580 to purchase it from shop A, then how much additional amount does the man require to buy the product from shop B instead?
a) Rs 32.6
b) Rs 57.4
c) Rs 45.5
d) Rs 72.5
e) Rs 87.5

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20) Tina bought two articles at same price. She sold one at a profit of 20% and other at a loss of 10%. From that amount she bought one refrigerator and marked its price _____% more than cost price and allowed a discount of 10% on the Marked price. If the cost price of each article was Rs.____, and the overall percent profit earned by Tina is 18.125%. Which of the following satisfies the two blanks given in the questions?
I. 20%, Rs.4000
II. 25%, Rs.4800
III. 25%, Rs.6000
a) Only I
b) Only II
c) Only III
d) Only I and II
e) Only II and III

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21) A person bought two cycles for Rs. 1900. He sold one of them at a profit of 10% and the other at a profit of 51.25%. He found that the selling prices of both the cycles are equal. What is the cost price of the cycle sold at 51.25% profit?
a) Rs 800
b) Rs 600
c) Rs 400
d) Rs 900
e) Rs 300

22) The difference between the interest earned when a certain sum is invested for 8 years in a scheme which offers 6% per annum simple interest and when the same sum is invested for 5 years in another scheme which offers 10% per annum simple interest is Rs.1440. Find the difference between compound interest and simple interest on that sum at 5% per annum after three years.
a) Rs.544
b) Rs.549
c) Rs.384
d) Rs.624
e) None of these

23) Sanjay invested Rs. 48000 in two different parts one at 10% CI (Compounded half yearly) and another one at 15% SI. At the end of the year he received total interest Rs. 5490, then find the amount invested in SI?
a) Rs. 18000
b) Rs. 12000
c) Rs. 22000
d) Rs. 25000
e) None of these

24) A person deposits an equal amount of Rs.12000 in two different banks on different interest rates. After three years the difference between the interests received from these two banks is Rs. 288. What is the difference between their interest rates?
a) 0.5%
b) 0.4%
c) 0.8%
d) 0.2%
e) 0.9%

25) Ravi invested Rs._____ and Rs._____ in two schemes A and B respectively. In scheme A offers 10% compound interest compounded annually for two years. In scheme B offers 20% simple interest for 3 years. Interest received in scheme A is Rs. 900 less than the interest received in scheme B
Which of the following satisfies the two blanks given in the questions?
I. Rs.10000, Rs.5000
II. Rs.7500, Rs. 12000
III. Rs.8000, Rs.15000
a) Only I
b) Only II
c) Only III
d) Both options a) and c)
e) Both options b) and c)

26) Sarala invested certain amount in three different schemes A, B and C with the rate of

interest 10%, 20% and 15% per annum respectively. If the total interest accured in one year was Rs 4788 and the amount invested in Scheme C was 200% of the amount invested in scheme A, and 250% of the amount invested in scheme B, then what was the amount invested in scheme A?
a) Rs 4560
b) Rs 8790
c) Rs 8550
d) Rs 8460
e) Rs 8650

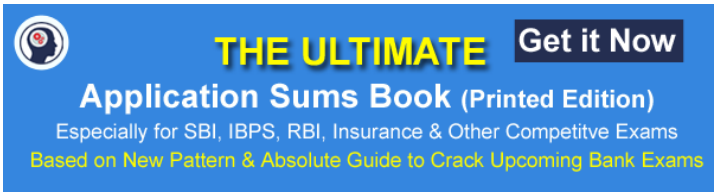
27) Difference between compound interest and simple interest on a certain sum at 6% per annum after two years will be Rs.216. If half of the sum is invested on compound interest at 10% per annum for three years and remaining half is invested on simple interest at 10% per annum for 3 years, then what will be the total interest earned?
a) Rs.15340
b) Rs.20440
c) Rs.14660
d) Rs.18930
e) None of these

28) Train A started from station P towards station Q with the speed of 40 Km/h. At the same time train B started from station Q towards station P with the speed of 48 Km/h. Both the trains return to their initial position after reaching their respective destination. Distance between station P and station Q is 1320 Km. After what time they will meet each other for the second time.
a) 35
b) 40
c) 45
d) 30
e) None of these

29) Place A is at a distance of 780km from place B. A train starts from place B to place A at 10 pm with a speed of 140km/hr. Another train starts from place A to place B at 11 pm with a speed of 180km/hr. At what time two trains will cross each other?
a) 2 Pm
b) 9 Pm
c) 7 Pm
d) 4 Pm
e) 1 Pm

30) P is twice as fast as Q and Q is thrice as fast as R. A journey is covered by R in 84 min and the corresponding time taken by P is the same as the time taken by bus to complete its journey at the speed of 120 km/hr. What is the distance covered by the bus?
a) 42 km
b) 34 km
c) 23 km
d) 31 km
e) 28 km

31) Two swimmers Keshav and Rajeev are swimming in a stream, heading towards each other. When they started swimming, the distance between them was 25 kms. The speed of the stream is 5km/hr while the speed of each swimmer is 10km/hr. After how many minutes they meet each other?
a) 64 minutes
b) 72 minutes
c) 25 minutes
d) 50 minutes
e) 75 minutes



32) Two men together start a journey in the same direction. They travel 18 km and 24 km per day respectively. After travelling of 9 days the man at 18km per day doubles his speed and both of them finish the journey in the same time. Find the number of days taken by them to reach the destination.
a) 14.5 days

b) 11.5 days
c) 17.5 days
d) 13.5 days
e) 15.5 days

33) A road of width 4 m is running around a rectangular field A of length 30 m and breadth 28 m from outside. Another road of width 5 m is running around a rectangular field B having radius 28 m from outside. Area of the road of field A is approximately what percent of the area of the road of field B?
a) 37%
b) 19%
c) 55%
d) 28%
e) 48%

34) Train M started from station A towards station C with the speed of 38 Km/h. At the same time, train N started from station B towards station C with the speed of 42 Km/h. Station A, station B and station C are in a straight line such that station B is between station A and station C. Distance between station A and station B is 560 Km and distance between station B and station C is 420 Km. Find the distance between station M and station N after 3 hours.
a) 382 Km
b) 572 Km
c) 432 Km
d) 616 Km
e) None of these

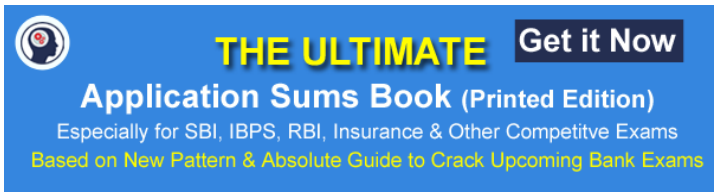
35) Sachin covers a certain distance with his own speed, but when he reduces his speed by 8 km/hr his time duration for the journey increases by 32hrs, while if he increases his speed by 4 km/hr from his original speed he takes 8hrs less than the original time taken. Find the distance covered by him.
a) 1020 km
b) 960 km
c) 975 km
d) 948 km
e) None of these

36) Train A started from station P towards station Q. At the same time, train B started from station R towards station Q. All the three stations are in a straight line such that station Q is between station P and station R. Station Q is equidistant from station P and station R. Distance between station P and station Q is 440 Km. If the speed of train A and train B is _____ Km/hr and _____ Km/hr respectively, the distance between both the trains after five hours is 580 km.
Which of the following satisfies the two blanks given in the questions?
I. 28 km/hr, 32 km/hr
II. 40 km/hr, 20 km/hr
III. 25 km/hr, 35 km/hr
a) None
b) Only II
c) Only III
d) Only I and II
e) All I, II and III

37) The distance between the station A and B is _____ km. A train leaves station A for station B and at the same time another train leaves station B for station A. Both the trains meet 11 hours after they start moving. If the train that starts from station A is 28 kmph faster than the other one and the ratio of the speeds of both the trains is ___:___.
Which of the following satisfies the two blanks given in the questions?
a) 583, 4:3
b) 924, 2:1
c) 858, 7:5
d) 759, 4:3
e) None of these

38) A boat can travel 21km upstream in 70 minutes. If the ratio of the speed of the boat in still water to the speed of the stream is 7:1. The boat takes _____ hours to cover ____km downstream.
Which of the following satisfies the two blanks given in the questions?

a) 4, 48
b) 3, 72
c) 5, 96
d) 2, 60
e) None of these



39) The train crosses the platform of length _____m and the pole in 24 seconds and 12 seconds respectively. The train crosses the man running in opposite direction with speed of _____kmph in 9 seconds.
Which of the following satisfies the two blanks given in the questions?
a) 400, 20
b) 300, 18
c) 200, 20
d) 180, 20
e) None of these

40) Sum of area of a circle and a rectangle is equal to 2024 sq.cm. The diameter of the circle is 42cm. What is the sum of the circumference of the circle and the perimeter of the rectangle if the length of the rectangle is 29 cm?
a) 464 cm
b) 222 cm
c) 325 cm
d) 234 cm
e) 256 cm

41) If the volume and curved surface area of a cylinder is 572 m^3 and 286m^2 respectively, then what is the total surface area of the cylinder?
a) 325.12 m^2
b) 341.54 m^2
c) 398.12 m^2
d) 386.57 m^2
e) 234.16 m^2

42) The area of the rectangle is 6 times the area of a square. If length of the rectangle is 2 times the side of the square and breadth of the rectangle is 9 cm, then find the side of the square.
a) 4 cm
b) 9 cm
c) 6 cm
d) 3 cm
e) 8 cm

43) Ratio of the ages of Asish and Sarita before four years was 8:7 respectively. At the time of marriage, ratio of their ages was 15:13 respectively. After six years, ratio of their ages will be 21:19 respectively. Age of Sunidhi at the time of marriage of Asish and Sarita was 28 years. Present age of Sunidhi is what percent of present age of Sarita?
a) 106.67%
b) 106.25%
c) 102.24%
d) 108.33%
e) None of these

44) Rubi is older than Sri by 15 years. 4 years ago, the ratio of their ages of Rubi and Sri is 16:11 respectively. What will be Mala's age 23 years hence, if Mala's present age is one fourth of Rubi's present age?
a) 36 years
b) 67 years
c) 43 years
d) 65 years
e) 19 years

45) Ratio of wine and water in a mixture is 16:13 respectively. One man added 16 litres of wine and 8 litres of water to the mixture and hence the ratio became 4:3 respectively. 60% of the mixture is used in a party. Another man added 20 litres of wine and 10 litres of water to the remaining mixture. Find the difference between the quantities of wine and water in the final mixture.
a) 12 litres
b) 14 litres

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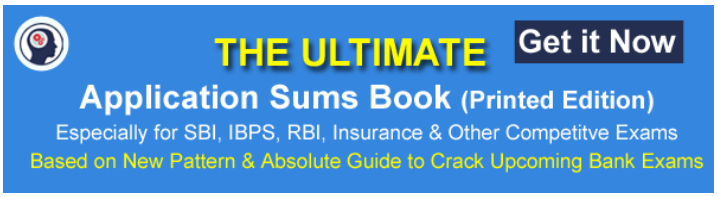
c) 20 litres
d) 18 litres
e) None of these

46) A _____ litres mixture contains milk and water in the ratio 7:5 respectively. The milkman sold 48 litres of the mixture and added 12 litres of milk and 10 litres of water to the remaining mixture. The milkman again sold ____ litres of the mixture and added six litres of milk in the remaining mixture. The final mixture contains milk to water in the ratio is 5: 3.
Which of the following satisfies the two blanks given in the questions?
I. 96 litres, 28 litres
II. 216 litres, 38 litres
III. 144 litres, 59 litres
a) Only I
b) Only II
c) Only III
d) Only I and II
e) Only II and III

47) A bag contains 6 green, 7 yellow, some red and some blue balls. Probability of drawing one red ball from the bag is 5/22 and probability of drawing one blue ball from the bag is 2/11. Find the probability of drawing four balls from the bag such that all the balls are of same colour.
a) 9/1145
b) 7/1021
c) 8/1045
d) 5/1024
e) None of these

48) Bucket P contains 4 green, x black and 5 red colour balls and probability of getting one black colour ball is 2/5. Bucket Q contains (x+2) black, (x+3) pink and (x-3) red colour balls, if two balls are taken from bucket Q then find the probability of getting at least one is pink colour ball
a) 3/38
b) 11/38
c) 27/38
d) 25/38
e) 23/38

49) A box contains 4 red, 5 white and 6 green balls. Three balls are drawn randomly. Then what is the probability that the balls drawn are of different colours?
a) 24/91
b) 24/79
c) 54/71
d) 32/41
e) 46/11



50) Income of Raju and Suresh are in the ratio 27 : 22 and ratio of their expenditure is 5:4 respectively. Raju saves Rs._____ and Suresh save Rs._____. Mahesh spends 50% of his income for rent, food and medicine. Amount he spent for medicine is Rs.4000 which is two-ninth of the remaining income. Income of Raju is 75% of Mahesh's income.
Which of the following satisfies the two blanks given in the questions?
I. Rs.2000, Rs.2000
II. Rs.3000, Rs.2800
III. Rs.7000, Rs.6000
a) Only I
b) Only II
c) Only III
d) Both I and II
e) All I, II and III

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Answers with Explanation

1) Answer: b)
Let the efficiency of Ramya, Vanitha and Suganthi be x, y and x respectively.
Now, according to the question,
Total work= LCM of 36 and 20= 180 units
Thus, x+y= 180/20= 9 units per day …… (1)
Similarly, y+z=180/36= 5 units per day …… (2)
And, 6x+12y+54z=180
(i.e) x+2y+9z=30
(x+y)+(y+z)+8z = 30
9+5+8z =30
8z =30-14 = 16
Z = 2
x= 6 units per day, y= 3 units per day and z= 2 units per day
Thus time taken by Vanitha alone to complete the work= 180/3
= 60 days

2) Answer: d)
Earning of 8 men and 5 women in one day =3390/6 =565
Earning of 5 men and 7 women in one day =3600/8 =450
Thus we have
Earning of a man = Rs 55 per day
Earning of a women = Rs 25 per day
Thus Number of days to earn Rs 6435 by (7 men and 8 women) =6435/[(55*7)+(25*8)]
= 11 days.

3) Answer: e)
Let the total number of men be x.
Then, we have
4x= x+(x-16)+(x-32)+(x-48)+(x-64)+(x-80)
4x= 6x-240
2x=240
x= 120
Hence Required wage= 120*200= Rs 24000

4) Answer: b)
1/P + 1/Q = 1/15 ---- (i)
1/Q + 1/R + 1/S = 1/12 ---- (ii)
1/P + 1/R + 1/S = 1/10 ----- (iii)
1/P + 1/Q + 1/T = 1/20 ---- (iv)
From (i) and (iv)
1/15 + 1/T = 1/20
=> 1/T = 1/20 – 1/15
=> 1/T = (3 – 4)/60
=> 1/T = -1/60 ----- (v)
Equation (ii) + equation (iii) – equation (i)
=> 1/Q + 1/R + 1/S + 1/P + 1/R + 1/S – 1/P – 1/Q = 1/12 + 1/10 – 1/15
=> 2/R + 2/S = (5 + 6 – 4)/60
=> 2 x (1/R + 1/S) = 7/60
=> 1/R + 1/S = 7/120 ------- (vi)
From (iii) and (vi)
1/P + 7/120 = 1/10
=> 1/P = 1/10 – 7/120
=> 1/P = (12 – 7)/120
=> 1/P = 5/120
=> 1/P = 1/24
Let, the required time = n minutes
n x (1/24 – 1/60) = 1/2
=> n x (5 – 2)/120 = 1/2
=> n = 120/3 x 1/2
=> n = 20 minutes

5) Answer: e)
The tank is filled by both the pipes per minute=(1/30)+(1/20)
=1/12
The part of the tank filled in last 6 minute=(1/12)*6
=1/2
Now let x be the time in which the leakage whole will empty the tank.
Then, 1-(12/x)=1/2

After solving this we have x= 24 minutes.

6) Answer: c)

Option (a)

1/Milan = 1/15
1/Sohan + 1/Milan = 1/10
=> 1/Sohan + 1/15 = 1/10
=> 1/Sohan = 1/10 – 1/15
=> 1/Sohan = (3 – 2)/30
=> 1/Sohan = 1/30
Let, Biman and Sohan can complete the work in n days.
n/25 + n/30 = 1
=> n x (6 + 5)/150 = 1
=> n = 150/11 days
This does not satisfy the given condition.

Option (b)

1/Milan = 1/30
1/Sohan + 1/Milan = 1/10
=> 1/Sohan + 1/30 = 1/10
=> 1/Sohan = 1/10 – 1/30
=> 1/Sohan = (3 – 1)/30
=> 1/Sohan = 2/30
=> 1/Sohan = 1/15
Let, Biman and Sohan can complete the work in n days.
n/25 + n/15 = 1
=> n x (3 + 5)/75 = 1
=> n = 75/8 days
This does not satisfy the given condition.

Option (c)

1/Milan = 1/20
1/Sohan + 1/Milan = 1/10
=> 1/Sohan + 1/20 = 1/10
=> 1/Sohan = 1/10 – 1/20
=> 1/Sohan = (2 – 1)/20
=> 1/Sohan = 1/20
Let, Biman and Sohan can complete the work in n days.
n/25 + n/20 = 1
=> n x (4 + 5)/100 = 1
=> n = 100/9 days
This satisfies the given condition.

Option (d)

1/Milan = 1/25
1/Sohan + 1/Milan = 1/10
=> 1/Sohan + 1/25 = 1/10
=> 1/Sohan = 1/10 – 1/25
=> 1/Sohan = (5 – 2)/50
=> 1/Sohan = 3/50
Let, Biman and Sohan can complete the work in n days.
n/25 + 3n/50 = 1
=> n x (2 + 3)/50 = 1
=> n = 50/5 = 10 days
This does not satisfy the given condition.

7) Answer: b)

1/Ajit + 1/Rama + 1/Sujal = 1/15 ----- (i)
Efficiency (Ajit) = 2 x Efficiency (Sujal) ---- (ii)
From (i) and (ii)
2/Sujal + 1/Rama + 1/Sujal = 1/15
=> 3/Sujal + 1/Rama = 1/15 ----- (iii)
1/Sujal + 1/Vimal = 1/20 ---- (iv)
1/Vimal = 1/30
Putting this value in equation (iv)
=> 1/Sujal + 1/30 = 1/20
=> 1/Sujal = 1/20 – 1/30
=> 1/Sujal = (3 – 2)/60
=> 1/Sujal = 1/60
Putting this value in equation (iii)
3/60 + 1/Rama = 1/15
=> 1/Rama = 1/15 – 1/20
=> 1/Rama = (4 – 3)/60
=> 1/Rama = 1/60
Let, the required number days = n
n x (1/60 + 1/30) = 1
=> n x (1 + 2)/60 = 1
=> n = 60/3
=> n = 20 days

8) Answer: b)

Ratio of share in the profit:
Munna: Neeraj: Sunny = [K + (K + 12000) x 2]: [(K + 20000) x 3]: (K + 60000)
= (K + 2K + 24000): (3K + 60000): (K + 60000)
= (3K + 24000) : (3K + 60000) : (K + 60000)
According to the question:

(3K + 24000)/[(3K + 24000) + (3K + 60000) + (K + 60000)] x 235000 = 85000
=> (3K + 24000)/(7K + 144000) x 47 = 17
=> 47 x (3K + 24000) = 17 x (7K + 144000)
=>141K + 1128000 = 119K + 2448000
=> 141K – 119K = 2448000 – 1128000
=> 22K = 1320000
=> K = 1320000/22
=> K = Rs.60000

9) Answer: d)
The profit will be divided as per the following ratio:
Neeraj: Sameer= (3*3):(7*1)
= 9:7
(i.e) Profit of Neeraj= 9x and Profit of Sameer= 7x
Now total salary of Neeraj for 1 year= 12*4250=Rs 51000
Now, from question we observe that,
9x+51000= 87000
x= Rs 4000
Then Profit earned by Sameer= 7*4000= Rs 28000

10) Answer: c)
Let, the investment amount of Anuj, Vikram and Sunidhi be Rs.5x, Rs.3x and Rs.4x respectively.
Ratio of share in the profit:
Anuj :Vikram : Sunidhi : Sushree = [5x + (5x + 20000) x 2] : [3x + (3x) x 2 x 2] : [(4x) x 2 + (4x + 10000)] : (5x)
= (5x + 10x + 40000) : (3x + 12x) : (8x + 4x + 10000) : (5x)
= (15x + 40000) : 15x : (12x + 10000) : 5x ------ (i)
According to the question
(15x + 40000)/[(15x + 40000) + 15x + (12x + 10000) + 5x] x 198000 = 68000
=> (15x + 40000)/(47x + 50000) x 99 = 34
=> (15x + 40000) x 99 = 34 x (47x + 50000)
=> 1485x + 3960000 = 1598x + 1700000
=> 1598x – 1485x = 3960000 – 1700000
=> 113x = 2260000
=> x = 2260000/113
=> x = Rs.20000
From equation (i)
Anuj :Vikram : Sunidhi : Sushree = (15 x 20000 + 40000) : (15 x 20000) : (12 x 20000 + 10000) : (5 x 20000)
= 340000 : 300000 : 250000 : 100000
= 34:30:25:10
Share of Vikram in the profit = 30/(34 + 30 + 25 + 10) x 198000
= 30/99 x 198000
= Rs.60000

11) Answer: c)
Let the total profit be Rs x.
Then, share of Karthi= x/6+ 5x/6*3/8 = 23x/48
Now, remaining share=5x/6
Thus share of Aadhi=(5x/6)*(5/8)= 25x/48
Since, the difference between the profit shares of Karthi and Aadhi is Rs 3060, we have
(25x/48) – (23x/48)= 3060
(25x-23x)/48=3060
2x/48=3060
x=Rs 73440

12) Answer: a)
From Option (A)
Profit ratio of Prem and Kavin=2400*12: 3800*9 =16:19
Share of Kavin= (19/35)*35000 = Rs.19000
This satisfies the given condition.
From Option (B)
Profit ratio of Prem and Kavin=3600*12: 3800*9 =24:19
Share of Kavin= (19/43)*35000 = 15465.11
This not satisfies the given condition.
From Option (C)
Profit ratio of Prem and Kavin=2800*12: 3800*9 =56:57
Share of Kavin=(57/113)*35000=17654.8
This not satisfies the given condition.
From Option (D)
Profit ratio Prem and Kavin=3200*12 : 3800*9 =64:57
Share of Kavin=(57/121)*35000=16487.6033
This not satisfies the given condition.

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13) Answer: a)
From Option (A)
Profit ratio= (2550*4 + 5100*6): (2700*12)
=34:27
A's share= (34/61)*12200= 6800
This is satisfies the given condition.
From Option (B)
Profit ratio = (2550*4 + 5100*6): (3000*12)
=17:15
A's Share= (17/32)*12200=6481.25
This is not satisfies the given condition.
From Option (C)
Profit ratio= (2550*4 + 5100*6): (3200*12) = 17:16
A's share = (17/33)*12200=6284.84
This is not satisfies the given condition.
From Option (D)
Profit ratio= (2550*4 + 5100*6):(2500*12)=34:25
A's share=34/59*12200=7030.5
This is not satisfies the given condition.

14) Answer: d)
The ratio of profit share of A and B is
A: B = 3 × 12: 2 × (12 – 3) = 2: 1
From I:
The profit ratio of A and B = 2698: 1349
= 2: 1
This is satisfies the given condition.
From II:
The profit ratio of A and B = 1920: 960
= 2: 1
This is satisfies the given condition.
From III:
The profit ratio of A and B = 2576: 1293
This is not satisfies the given condition.
15) Answer: a)
Let the cost of each unit of the article that shop keeper sells be Rs x.
If correct weight of the article was sold, then selling price= 110% of x.
But actually 75% units are sold as 1 unit at cost of 110% of x.
Then cost of 75% of units=75% of x.
Thus effective profit= [(110% of x-75% of x)/75% of x]*100
= 47%
16) Answer: a)
MP = CP + 500
(CP + 500) x (100 – 8)/100 = CP x (100 + 15)/100
=> (CP + 500) x 92/100 = CP x 115/100
=> CP x (115 – 92)/100 = 500 x 92/100
=> CP x 23/100 = 46000/100
=> CP = 46000/23
=> CP = Rs.2000
MP = 2000 + 500 = Rs.2500
SP = 2000 x (100 + 15)/100
= 2000 x 115/100
= Rs.2300
Profit = 2300 – 2000
= Rs.300
Required percentage = 300/2500 x 100 = 12%
17) Answer: c)
Let the cost price of the item be Rs x.
Then CP of B=1.3x
CP of C=1.3x*1.4
= 1.82x
Then CP of D=1.82x+350
Hence 1.82x+350-x=1252
0.82x=902
x=Rs 1100
Thus required answer=1100*(130/100)
= Rs 1430
18) Answer: a)
Let the number of chairs and tables be 7x and 6x respectively.
Also let the marked price of chairs and tables be 400y and 500y respectively.
Then according to the question,
400y*7x*(10/100)+500y*6x*(20/100)=2640
280xy+600xy=2640
xy=3
Hence total selling price of tables=500*6*3*(80/100)
=Rs 7200
19) Answer: d)
Selling price of product in shop A=Rs 580
Then Marked price of the article= (100/80)*580
= Rs 725

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Then selling price of the product in shop B=725*(90/100)
= Rs 652.5
Required amount=652.5- 580=Rs 72.5

20) Answer: e)

From I:
Cost price of the two article for Tina = 4000*2 = Rs. 8000
Selling price of two article = 4000 x 120/100 + 4000 x 90/100
= 4800 + 3600
= Rs.8400 = cost price of the refrigerator
Marked price of the refrigerator = 8400 x 120/100 = Rs.10800
Selling price of the refrigerator = 10800 x 90/100 = Rs.9072
% profit = [(9072 – 8000)/8000] x 100
= 1072/8000 x 100
= 13.4%
This is not satisfies the given condition.

From II:
Cost price of the two article for Tina = 4800 x 2 = rs.9600
Selling price of two article = 4800 x 120/100 + 4800 x 90/100
= 5760 + 4320
= Rs.10080 = cost price of the refrigerator
Marked price of the refrigerator = 10080 x 125/100 = Rs.12600
Selling price of the refrigerator = 12600 x 90/100 = Rs.11340
% profit = [(11340 – 9600)/9600] x 100
= (1740/9600) x 100
= 18.125%
This is satisfies the given condition.

From III:
Cost price of the two article for Tina = 6000 x 2 = Rs.12000
Selling price of two article = 6000 x 120/100 + 6000 x 90/100
= 7200 + 5400
= Rs.12600 = cost price of the refrigerator
Marked price of the refrigerator = 12600 x 125/100 = Rs.15750
Selling price of the refrigerator = 15750 x 90/100 = Rs.14175
% profit = (14175 – 12000)/12000 x 100
= 2175/12000 x 100
= 18.125%
This is satisfies the given condition.

21) Answer: a)
Let cost of first cycle is 'x' Rs.
Cost of second cycle = (1900 – x) Rs.
From question we observe that,
x(110/100)=(1900-x)*(151.25/100)
x = Rs 1100
Thus Cost price of 1st cycle=Rs.1100
And Cost price of 2nd cycle=Rs.800

22) Answer: b)
Let the sum be Rs. P
(P x 5 x 10)/100 – (P x 6 x 8)/100 = 1440
=> (50P – 48P)/100 = 1440
=> 2P/100 = 1440
=> P = 144000/2
=> P = Rs.72000
We know that, for 3 years
CI – SI = P x $(r/100)^2$ x (300 + r)/100
=> CI – SI = 72000 x $(5/100)^2$ x (300 + 5)/100
=> CI – SI = 72000 x $(1/20)^2$ x 305/100
=> CI – SI = 72000 x 1/400 x 305/100
=> CI – SI = Rs.549

23) Answer: b)
Let us take one part be x and another one be 48000-x
According to the question,
X[$(1 + 10/200)^2$ – 1) + [(48000 – x)*15*1]/100 = 5490
X[$(210/200)^2$ – 1)] + 7200 – (15x/100) = 5490
(41x/400) + 7200 – (15x/100) = 5490
(41x/400) – (15x/100) = 5490 – 7200
-19x/400 = -1710
X = 1710*(400/19) = 36000
The amount invested in S.I = 48000 – x = 48000 – 36000 = Rs. 12000

24) Answer: c)

According to the question,
$[(12000*3*(r_1-r_2))/100] = 288$
After solving this we get,
$r_1 - r_2 = 0.8\%$

25) Answer: a)
Compound interest for two years shortcut,
$= > x + x + x^2/100$
$= > 10 + 10 + 100/100$
$= > 21\%$
Let us take sum invested in scheme A and B are x and y respectively
Interest received in scheme A = (21/100) * x
= 21x/100
Interest received in scheme B = 3*(20/100)*y
= 60y/100
60y/100 – 21x/100 = 900
The options should satisfy the above condition.
From I,
5000 *(60/100) – (21/100) * 10000 = 900
3000 – 2100 =900
900 = 900
This option satisfies the given condition.
From II,
12000 * (60/100) – 7500 * (21/100) = 900
7200 – 1575 = 900
5625 = 900
This does not satisfy the given condition.
From III,
15000 *(60/100) – 8000 *(21/100) = 900
9000 – 1680 = 900
7320 = 900
This does not satisfy the given condition.

26) Answer: c)
The investment ratio of Sarala in different schemes is as follows:
A: C = 100: 200 = 1:2
B: C = 100: 250 = 2: 5
A: B: C = 5: 4: 10
Then according to the question, we have
[(5x*10)/100]+[(4x*20)/100]+[(10x*15)/100]=4788
50x+80x+150x=478800
x=1710
Thus amount invested by A= 5*1710=Rs 8550

27) Answer: d)
We know that, for two years
$CI - SI = P \times (r/100)^2$
$=> 216 = P \times (6/100)^2$
$=> P = 216 \times 100/6 \times 100/6$
$=> P$ = Rs. 60000
We know that
$CI = P \times (1 + r/100)^t - P$
$= 30000 \times (1 + 10/100)^3 - 30000$
$= 30000 \times (1 + 1/10)^3 - 30000$
$= 30000 \times (11/10)^3 - 30000$
$= 30000 \times 1331/1000 - 30000$
= 39930 – 30000
= Rs. 9930
We know that
SI = (P x r x t)/100
= (30000 x 10 x 3)/100
= Rs. 9000
Required sum = 9930 + 9000 = Rs. 18930

28) Answer: c)
Time taken by train A to reach station Q = 1320/40 = 33 hours
Time taken by train B to reach station P = 1320/48 = 27.5 hours
Distance travelled by train B in (33 – 27.5 = 5.5) hours
= 48 x 5.5 = 264 Km
(48 + 40) x t = 1320 – 264
=>88t = 1056
=> t = 1056/88
=> t = 12
Required time = 33 + 12 = 45 hours

29) Answer: e)
Let the speed of the train which starts its journey from place B to place A is x.
(i.e.) x=140 km/hr
Similarly, let the speed of the train which starts its journey from place A to place B is x.
Then y=180km/hr
Now distance covered at 11 pm = 140 km
Remaining distance = 780 – 140 = 640 km
Remaining distance covered = 640/ (140+180)
= 640/320 = 2 hrs
= 2 hours after 11 pm
=1 pm

30) Answer: e)

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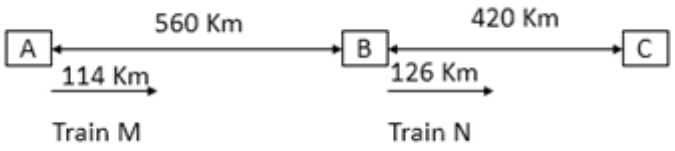
Let the speed of R=x
Then the speed of Q=3x
And the speed of P=6x
Also let the time taken by P= y hours.
Now, ratio of speeds of P and R=Ratio of time taken by R and P
(i.e) 6x:x= 84:y
After solving this we have,
y=14 minutes.
Hence required distance= [14/60]*120
= 28 km.

31) Answer: e)
The relative speed of the swimmer along with the stream=10+5=15km/hr
The relative speed of the swimmer against the stream=10-5=5km/hr
Now required time to meet each other= 25/20=75 minutes

32) Answer: d)
After 9 days, Let they will take t days to reach the destination.
Then according to the question,
(18*9)+(18*2)t= (24*9)+24t
After solving this, we have t= 4.5 days
Thus required total days= 9+4.5= 13.5 days

33) Answer: c)
Area of the road of field A = (30 + 8) x (28 + 8) – 30 x 28
= 38 x 36 – 30 x 28
= 1368 – 840
= 528 m^2
Area of the road of field B = 22/7 x $[(28 + 5)^2 – (28)^2]$
= 22/7 x $[(33)^2 – (28)^2]$
= 22/7 x (1089 – 784]
= 22/7 x 305
= 958.57 m^2
Required percentage = 528/958.57 x 100 = 55%

34) Answer: b)
Distance travelled by train M in 3 hours = 38 x 3 = 114 Km
Distance travelled by train N in 3 hours = 42 x 3 = 126 Km



Required distance = 560 – 114 + 126 = 572 Km

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35) Answer: b)
Let distance be x km and speed be y km/hr
[x/(y – 8)]-[x/y]=32
=> x=4y(y – 8)----(i)
(x/y) – [x/(y + 4)]=8
=> x=2y(y+4)-----(ii)
By solving equation (i) & (ii)
4y(y – 8)=2y(y+4)
2y – 16=y + 4
=>y=20km/hr
After substituting in (ii) we have
x=2 * 20(20+4)=40 * 24 = 960 km

36) Answer: e)
From I:
Distance between station P and station R = 440 x 2 = 880 Km
Distance travelled by train A in 5 hours = 28 x 5 = 140 Km
Distance travelled by train B in 5 hours = 32 x 5 = 160 Km
Required distance = 880 – 140 – 160
= 880 – 300
= 580 Km
This is satisfies the given condition.
From II:
Distance between station P and station R = 440 x 2 = 880 Km
Distance travelled by train A in 5 hours = 40 x 5 = 200 Km
Distance travelled by train B in 5 hours = 20 x 5 = 100 Km
Required distance = 880 – 200 – 100
= 880 – 300

= 580 Km
This is satisfies the given condition.
From III:
Distance between station P and station R = 440 x 2 = 880 Km
Distance travelled by train A in 5 hours = 25 x 5 = 125 Km
Distance travelled by train B in 5 hours = 35 x 5 = 175 Km
Required distance = 880 – 125 – 175
= 880 – 300
= 580 Km
This is satisfies the given condition.

37) Answer: b)
Let Speed of train A=x
Speed of train B=y
X-y=28
From Option (A)
x+y=583/11
x+y=53
2x=81
X=40.5
Y=12.5
Ratio=40.5:12.5=81:25
This not satisfies the given condition.
From Option (B)
x-y =28kmph
x+y=924/11=84
2x=112
X=56
Y=56-28=28
Ratio=56:28=2:1
This satisfies the given condition.
From Option (C)
x-y =28
x+y=858/11=78
2x=106
X=53
Y=25
Ratio=53:25
This not satisfies the given condition.
From Option (D)
x-y =28
x+y=759/11=69
2x=97
X=48.5
Y=20.5
Ratio=48.5:20.5=97:41
This not satisfies the given condition.
38) Answer: b)
Speed of the boat=7x
Speed of the stream=x
Upstream speed = (7x-x) =6x
Downstream speed = (7x+x) =8x
Upstream speed, 6x=21*60/70
6x=18kmph
X=3kmph
Downstream speed=8(3) =24kmph
From Option (A)
Time taken=48/24=2 hr
This not satisfies the given condition.
From Option (B)
Time=72/24=3 hr
This satisfies the given condition.
From Option(C)
Time=96/24=4 hr
This not satisfies the given condition.
From Option (D)
Time=60/24=2.5 hr
This not satisfies the given condition.

39) Answer: c)
Length of the train=x
Option (A)
Length of the platform = 400 m
Train crosses a pole and platform in 24 and 12 seconds respectively,
(x+400)/24 = x/12
X+400 = 2x
X=400 m
Speed of the train = 400/12 = 100/3 m/s
Train crosses a man and man's speed x km/hr
400/(100/3 +z) = 9
400 = 900/3 +9z
300/3 = 9z
Z= 100/9 = 100/9 * 18/5 = 40 km/hr
This option is not satisfies the given condition.

From Option (B)
Length of the platform = 300 m
Train crosses a pole and platform in 24 and 12 seconds respectively,
(x+300)/24 = x/12
X+300 = 2x
X=300 m
Speed of the train = 300/12 = 25 m/s
Train crosses a man and man's speed x km/hr
300/(25 +z) = 9
300 = 225 +9z
75 = 9z
Z= 75/9 = 75/9 * 18/5 = 30 km/hr
This option is not satisfies the given condition.
From option(C)
Length of the platform = 200 m
Train crosses a pole and platform in 24 and 12 seconds respectively,
(x+200)/24 = x/12
X+200 = 2x
X=200 m
Speed of the train = 200/12 = 50/3 m/s
Train crosses a man and man's speed x km/hr
200/(50/3 +z) = 9
200 = 450/3 +9z
150/3 = 9z
Z= 50/9 = 50/9 * 18/5 = 20 km/hr
This option satisfies the given condition.
From Option (D)
Length of the platform = 180 m
Train crosses a pole and platform in 24 and 12 seconds respectively,
(x+180)/24 = x/12
X+180 = 2x
X=180 m
Speed of the train = 180/12 = 15 m/s
Train crosses a man and man's speed x km/hr
180/(15 +z) = 9
180 = 135 +9z
45 = 9z
Z= 45/9 = 45/9 * 18/5 = 18 km/hr
This option is not satisfies the given condition.

40) Answer: d)
Given that diameter of the circle=42 cm
Then radius= 21 cm
Now, Area of the circle=(22/7)*21*21
=1386cm^2
Thus area of the rectangle=2024-1386=638cm^2
Then breadth of the rectangle=638/29
=22cm
Now circumference of the circle=2*(22/7)*21
=132cm
And perimeter of the rectangle=2(22+29) =102 cm
Required sum= 132+102= 234cm

41) Answer: d)
According to the question,
($\pi r^2 h/2\pi rh$)=572/286
r= 4m
Also, $\pi r^2 h$=572
Then h=(572*7)/(22*4*4)
=11.375m
Thus required surface area=$2\pi r^2+2\pi rh$
=$2\pi r$ (h + r)
=2*22/7*4(15.375)
= 386.57m^2

42) Answer: d)
According to the question,
Area of the rectangle=6*Area of the square
Thus length*breadth=6(side^2)
(i.e) (2a*b)=6(a^2)
2*9= 6a
a=3 cm

43) Answer: b)
Let the ages of Asish and Sarita before four years be 8x years and 7x years respectively.
According to the question
(8x + 10)/(7x + 10) = 21/19
=> 19 x (8x + 10) = 21 x (7x + 10)
=> 152x + 190 = 147x + 210
=> 152x – 147x = 210 – 190
=> 5x = 20
=> x = 20/5
=> x = 4
Present age of Asish = 8x + 4 = 8 x 4 + 4 = 36 years
Present age of Sarita = 7x + 4 = 7 x 4 + 4 = 32 years
Let they got married before n years
According to the question
(36 – n)/(32 – n) = 15/13

=> 13 x (36 – n) = 15 x (32 – n)
=> 468 – 13n = 480 – 15n
=> 480 – 468 = 15n – 13n
=> 2n = 12
=> n = 6
Present age of Sunidhi = 28 + 6 = 34 years
Required percentage = 34/32 x 100 = 106.25%

44) Answer: a)
Age of Rubi 4 years ago= 16x years
Age of Sri 4 years ago = 11x years
Then, 16x+4-11x-4=15
5x=15 years
x=3 years
Thus, Rubi's age 4 years ago= 16x=16*3=48 years
Then Rubi's present age= 52 years
And Mala's present age=(1/4)*52
=13 years
Thus Mala's age after 23 years=13+23=36 years

45) Answer: d)
Let the quantity of wine and water in the initial mixture be 16x litres and 13x litres respectively.
According to the question
(16x + 16)/(13x + 8) = 4/3
=> 3 x (16x + 16) = 4 x (13x + 8)
=> 48x + 48 = 52x + 32
=> 52x – 48x = 48 – 32
=> 4x = 16
=> x = 4
Quantity of wine in the initial mixture = 16x = 16 x 4 = 64 litres
Quantity of water in the initial mixture = 13x = 13 x 4 = 52 litres
Quantity of wine in the new mixture = 64 + 16 = 80 litres
Quantity of water in the new mixture = 52 + 8 = 60 litres
Total quantity of mixture = 80 + 60 = 140 litres
Wine : water = 80 : 60 = 4 : 3
Remaining quantity of mixture = 40/100 x 140 = 56
Quantity of wine in the final mixture = 4/(4 + 3) x 56 + 20
= 4/7 x 56 + 20
= 32 + 20
= 52 litres
Quantity of water in the final mixture = 3/(4 + 3) x 56 + 10
= 3/7 x 56 + 10
= 24 + 10
= 34 litres
Required difference = 52 – 34 = 18 litres

46) Answer: a)
From I:
Quantity of milk in the initial mixture = (7/12) x 96 = 56 litres
Quantity of water in the initial mixture = (5/12) x 96 = 40 litres
After selling 48 litres and adding 12 litres milk and 10 litres water to the remaining mixture:
Quantity of Milk in 48 litres = 48 * (7/12) = 28 litres
Quantity of Water in 48 litres = 48 * (5/12) = 20 litres
Quantity of milk after the replacement = 56 – 28 + 12 = 28 + 12 = 40 litres
Quantity of water after replacement = 40 – 20 + 10 = 20 + 10 = 30 litres
Total mixture = 70 litres
Milk: water = 40: 30 = 4:3
After selling 28 litres of the mixture and adding six litres of milk to the remaining mixture:
Quantity of milk in 28 litres = 28 * (4/7) = 16 litres
Quantity of water in 28 litres = 28 * (3/7) = 12 litres
Quantity of milk after replacement= 40 – 16 + 6 = 24 + 6 = 30 litres
Quantity of water after replacement= 30 – 12 = 18 litres
Ratio of milk and water in the final mixture = 30/18 = 5/3
This is satisfies the given condition.
From II:
Quantity of milk in the initial mixture = (7/12) x 216 = 126 litres
Quantity of water in the initial mixture = (5/12) x 216 = 90 litres

After selling 48 litres and adding 12 litres milk and 10 litres water to the remaining mixture:
Quantity of Milk in 48 litres = 48 * (7/12) = 28 litres
Quantity of Water in 48 litres = 48 * (5/12) = 20 litres
Quantity of milk after the replacement = 126 – 28 + 12
= 98 + 12
= 110 litres
Quantity of water after replacement = 90 – 20 + 10
= 70 + 10
= 80 litres
Total mixture = 190 litres
Milk: water = 110: 80 = 11: 8
After selling 38 litres of the mixture and adding six litres of milk to the remaining mixture:
Quantity of milk in 38 litres = 38 * (11/19) = 22 litres
Quantity of water in 38 litres = 38 * (8/19) = 16 litres
Quantity of milk after replacement= 110 – 22 + 6
= 88 + 6 = 94 litres
Quantity of water after replacement= 80 – 16 = 64 litres
Ratio of milk and water in the final mixture = 94/64 = 47/32
This is not satisfies the given condition.

From III:

Quantity of milk in the initial mixture = (7/12) x 144 = 84 litres
Quantity of water in the initial mixture = (5/12) x 144 = 60 litres
After selling 48 litres and adding 12 litres milk and 10 litres water to the remaining mixture:
Quantity of Milk in 48 litres = 48 * (7/12) = 28 litres
Quantity of Water in 48 litres = 48 * (5/12) = 20 litres
Quantity of milk after the replacement = 84 – 28 + 12
= 56 + 12 = 68 litres
Quantity of water after replacement = 60 – 20 + 10
= 40 + 10 = 50 litres
Total mixture = 118 litres
Milk: water = 68: 50 = 34: 25
After selling 59 litres of the mixture and adding six litres of milk to the remaining mixture:
Quantity of milk in 59 litres = 59 * 34/59 = 34 litres
Quantity of water in 59 litres = 59 * 25/59 = 25 litres
Quantity of milk after replacement= 68 – 34 + 6
= 34 + 6 = 40 litres
Quantity of water after replacement= 50 – 25 = 25 litres
Ratio of milk and water in the final mixture = 40/25 = 8/5
This is not satisfies the given condition.

47) Answer: c)

Green balls = 6
Yellow balls = 7
Let, red balls = x
Blue balls = y
Total number of balls = (6 + 7 + x + y) = (13 + x + y)
According to the question
x/(13 + x + y) = 5/22
=> 22x = 65 + 5x + 5y
=> 17x – 5y = 65 ----- (i)
And
y/(13 + x + y) = 2/11
=> 11y = 26 + 2x + 2y
=> 2x – 9y = -26 ---- (ii)
Equation (i) x 9 – equation (ii) x 5
=> 153x – 45y – 10x + 45y = 585 + 130
=> 143x = 715
=> x = 5
Putting the value ox in equation (i)
85 – 5y = 65
=> 5y = 20
=> y = 4
Total number of balls = 6 + 7 + 5 + 4 = 22
Required probability = $({}^{6}C_4 + {}^{7}C_4 + {}^{5}C_4 + {}^{4}C_4)/{}^{22}C_4$
= (15 + 35 + 5 + 1)/7315
= 56/7315
= 8/1045

48) Answer: c)

Probability of getting one black colour ball in bucket P = x/(9+x)=2/5
=>3x=18=>x=6
Bucket Q contains 8 black, 9 pink and 3 red colour balls

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Required probability in bucket Q = 1-($11c_2/20c_2$) = 1-11/38=27/38

49) Answer: a)

Total number of balls=15

Then n(S) = $^{15}c_3$=455

Also n(E)=$^4c_1$*$^5c_1$*$^6c_1$

=120

Hence P(E)=120/455

=24/91

50) Answer: e)

Let us take income of Mahesh be x

Amount spent for medicine = 2/9 * (x-50/100*x) = 4000

= > 2/9 * (50x/100) = 4000

= > 2/9 * x/2 = 4000

= > x/9 = 4000

= > x = 36000

Income of Raju = 36000 * 75/100

= 27000

Income of Suresh = 27000/27 * 22

= 22000

From I:

According to the question,

= > (27000 – 2000)/(22000-2000)

= > 25000/20000

= > 5/4

This is satisfies the given condition.

From II:

According to the question,

= > (27000 – 3000)/(22000-2800)

= > 24000/19200

= > 5/4

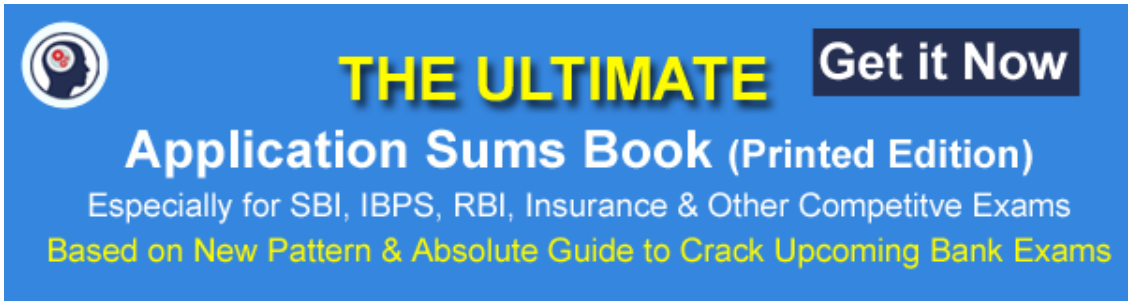
This is satisfies the given condition.

From III:

According to the question,

= > (27000 – 7000)/(22000-6000)

= > 20000/16000

= > 5/4

This is satisfies the given condition.