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DI Info Chart Exercise for IBPS PO Pre

Set-1

Directions (1-6): Study the given information carefully to answer the questions.

In an amusement park, the following types of traffic signals are there to drive a toy car.

Red Light (R) = Stop

Yellow light (Y) = Wait

Red and Yellow lights (RY) = Turn left

Red and Green lights (RG) = Turn right

Yellow and Green lights (YG) = Go at 20 km per hour

Red, Yellow, and Green lights (RYG) = Go at 10 km per hour

Green light (G) = Go at 5 km per hour

All children driving the cars inside the amusement park should compulsorily follow the traffic signals and can't go outside the park to drive the car. A girl Ankita who is facing north, drive the car at the speed of 30 km per hour inside the park and encounters the signals in the following manners. (She can go to the next signal only after passing the previous signal)

Starting Point = S

After half an hour, 1st signal – RY and YG

After 15 minutes, 2nd signal – RYG

After 30 minutes, 3rd signal – RG and RYG

After 15 minutes, 4th signal – RG and YG

After an hour, 5th signal – RY and G

After 2 hours, 6th signal – R

1. What is the total distance that Ankita travelled from the starting point till the 6th signal?

- A. 55 km B. 52.5 km C. 57.5 km
D. 62.5 km E. None of these

2. What is the average speed at which Ankita travelled from the starting point till the 6th signal?

- A. $12 \frac{7}{9}$ km per hour B. $11 \frac{7}{9}$ km per hour C. $12 \frac{5}{9}$ km per hour
D. $11 \frac{5}{9}$ km per hour E. None of these

3. Suppose, in park there is no signals then how much less time Ankita would have taken to reach the final position?

- A. 3 hours 12 minutes B. 3 hours 32 minutes C. 2 hours 12 minutes
D. 3 hours 58 minutes E. 4 hours 5 minutes

4. If at the starting point, Ankita was facing toward south then what would be the final position from the starting point?

- A. 27.5 km towards south and 10 km towards east
B. 17.5 km towards south and 12.5 km towards east
C. 27.5 km towards north and 10 km towards east
D. 27.5 km towards south and 10 km towards west
E. 17.5 km towards north and 10 km towards east

5. After the starting point, if the first signal was RG and RYG instead of RY and YG then what would be the final position of Ankita from the starting point?

- A. 17.5 km towards west and 10 km towards north
B. 12.5 km towards west and 2.5 km towards north
C. 12.5 km towards west and 10 km towards north
D. 12.5 km towards east and 2.5 km towards south
E. 17.5 km towards east and 10 km towards south

6. After the starting point, if the first signal was RG and RYG instead of RY and YG then what would have been the shortest distance from the starting point to the ending point?

A. 12.25 km

B. 14.92 km

C. 12.75 km

D. 13.22 km

E. 14.72 km



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Set-2

Directions: Study the given information carefully to answer the questions.

One day, in an SBI Branch the attendance of all the employees was 100% but all the employees were not punctual to the office nor did all the employees stayed till the end of the office time. On that day, of all the employees who arrived early at the office, 20% of them left early but 40% of them left late and rest of them left on time. Of the employees who arrived late at the office, 50% of them left late but 25% of them left on time and rest of them left early. Of the employees who arrived on time, 37.5% of them left early and an equal number of them left late but rest of them left on time. The number of employees who arrived early was equal to the number of employees who left on time and the number of employees who left early was 39 more than the number of employees who arrived late at the office. The number of employees who didn't leave on time was 144.

7. What is the difference between the total number of employees who left early and the total number of employees who left late?

- A. 18 B. 16 C. 20
D. 22 E. None of these

8. What is the total number of employees working in that branch?

- A. 208 B. 212 C. 204
D. 210 E. None of these

9. Find the respective ratio of the number of employees who arrived early, the number of employees who arrived on time, and the number of employees who arrived late?

- A. 5 : 10 : 2 B. 5 : 8 : 4 C. 10 : 9 : 8
D. 5 : 8 : 5 E. None of these

10. Suppose on the day before yesterday of that day 25% of the total number of employees was on leave on the medical ground and 33.33% of the remaining was on leave for personal reason then how many employees was present on the day before yesterday of that day?

- A. 51 B. 102 C. 119
D. 65 E. None of these

11. The total number of employees who left on time was how much percent more than/less than the total number employees who didn't leave on time?

- A. 75% B. 80% C. 58.33%
D. 58.50% E. 75.50%



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Set-3

Directions: Study the given information carefully to answer the questions.

Ram goes to a hill station by car. While going upwards (uphill) the consumption of petrol was increased by 25% of the normal consumption of petrol but while going downwards (downhill) the consumption of petrol was decreased by 50% of the normal consumption of petrol. He goes from the point A to the point B. The total distance between point A and point B is 525 km in which the total distance travelled by him uphill is 2.5 times of the total distance travelled by him downhill and the total distance travelled by him on the plane surface is 140 km. While coming back from the point B to point A, he saves 15 litres of petrol and the consumption of petrol is normal on plane surface.

12. What is the mileage of the car on downhill?

- A. 1 litre per 10 kilometers B. 1 litre per 15 kilometers
C. 1 litre per 17.5 kilometers D. 1 litre per 15.5 kilometers
E. None of these

13. If point A to point B were a plane surface then how many litres of petrol he would have consumed more while going and coming back?

- A. 12 litres B. 18.33 litres C. 15.33 litres
D. 11.67 litres E. 12.67 litres

14. The quantity (in litres) of petrol consumed for the entire journey (from point A to point B and from point B to point A) is

- A. 114.4 litres B. 145.2 litres C. 120.4 litres
D. 110.5 litres E. 115.6 litres

15. If the speed of car is 55 km per hour on the plane surface and while going uphill, the car's speed was decreased by 25% of the normal speed and while going downhill the car's speed was increased by 50% of the normal speed

then approximately how much time he would have taken during the entire journey? (if he returns immediately from point B to point A)

- A. 21.09 hours B. 19.09 hours C. 19.90 hours
D. 21.10 hours E. 21.90 hours

16. What is the difference between the mileage of car on downhill and that on uphill?

- A. 1 litres per 33 kilometres B. 1 litres per 22 kilometres
C. 1 litres per 11 kilometres D. 1 litres per 9 kilometres
E. 1 litres per 10 kilometres



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Set-4

Directions: Study the given information carefully to answer the questions.

Every year, a survey of 1000 people is conducted by the World Health Organization (WHO). WHO found that in the year 2005, 2006, 2007, 2008 and 2009 the percentage of people affected by malaria were 30%, 40%, 30%, 20% and 45% respectively. WHO also found that every year out of the affected people 60% were students, 10% were house-wives and 30% were drivers. The number of house-wives, students and drivers were in the ratio 20 : 11 : 9, every year.

17. In the year 2007, find the number of house-wives affected by malaria?

- A. 60 B. 30 C. 50
D. 110 E. 150

18. In the year 2009, find the number of drivers who were not affected by malaria?

- A. 110 B. 125 C. 415
D. 190 E. 90

19. What is the difference in the number of students affected and not affected by malaria in the year 2006?

- A. 205 B. 35 C. 200
D. 240 E. 420

20. Find the ratio of the number of house-wives affected by malaria in the year 2005 to that affected by malaria in the year 2008.

- A. 5 : 3 B. 9 : 4 C. 3 : 2
D. 2 : 1 E. 4 : 3

21. Which year had the maximum number of students not affected by malaria?

- A. 2005 B. 2006 C. 2007
D. 2008 E. 2009

Set-5

Directions: Study the given information carefully to answer the questions.

Krishna invested some money under 20% per annum simple interest in Axis bank. At the end of one – year, he withdrew all amount from the Axis bank and invested in Bandhan bank at the rate of R % per annum under compound interest compounded annually for two years and received Rs. 57600 as total interest from the Bandhan bank. The first year's interest at Bandhan bank was Rs. 24000.

22. In starting, how much money had Krishna invested in Axis bank?

- A. Rs. 60000 B. Rs. 75000 C. Rs. 10000
D. Rs. 50000 E. None of these

23. Total how much interest did Krishna get from the Axis bank and the Bandhan bank together?

- A. Rs. 68600 B. Rs. 67600 C. Rs. 64600
D. Rs. 71200 E. None of these

24. If the rate of interest was interchanged i.e. Axis bank had offered R% per annum simple interest and Bandhan bank had offered 20% per annum compound interest then how much less money Krishan would have received at the end of 3 years?

- A. Rs. 16800 B. Rs. 15800 C. Rs. 14800
D. Rs. 16400 E. None of these

25. If Krishan had invested the sum of money only in Axis bank for 3 years under 20% per annum simple interest then at the end of 3 years, total how much simple interest he would have received from the Axis bank?

- A. Rs. 25000 B. Rs. 30000 C. Rs. 40000
D. Rs. 20000 E. None of these

26. If the first year's interest at Bandhan bank was same as the simple interest received from the Axis bank at the end of 1 year and the rate of interest for the Bandhan bank remained constant then what should be the rate of interest for Axis bank?

A. 40%

B. 50%

C. $66 \frac{2}{3}$ %

D. $66 \frac{2}{5}$ %

E. $43 \frac{2}{5}$ %



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Set-6

Directions: Study the given information carefully to answer the questions.

Three friends, Chand, Chandni, and Chanchal went to a shopping centre. Each of them had Rs. 2500. In the shopping centre, the session sale discount was 10% on the marked price. Chandni and Chanchal were regular customers so they got 20% each an additional discount on the discounted price but Chand being a new customer didn't get any additional discount. Only Chanchal had a membership card of the shopping centre which gave an additional discount of 25% on the discounted price. They all like Juicers of xyz brand and they purchased one piece each of that brand. The marked price of each piece was same. In last, when they calculated then they found that Chandni had paid Rs. 360 more than that of Chanchal.

27. If all of them combine the money paid for Juicer then, the total money paid by them for three pieces of the juicers was what percentage of the total marked price of the three juicers?

- A. 62% B. 72% C. 78%
D. 68% E. None of these

28. The amount paid by Chand for the juicer was how much more than that by Chanchal?

- A. 45% B. 50% C. 55.33%
D. 66.67% E. None of these

29. What is the ratio of the amount paid by Chand to that by Chanchal?

- A. 9 : 7 B. 3 : 2 C. 6 : 5
D. 5 : 3 E. None of these

30. How much money was left with Chand after purchasing the juicer?

- A. Rs. 900 B. Rs. 500 C. Rs. 700
D. Rs. 750 E. None of these

31. What was the marked price of the juicer?

A. Rs. 1800

B. Rs. 2400

C. Rs. 2000

D. Rs. 2150

E. None of these



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Set-7

Directions: Study the given information carefully to answer the questions.

In ecommerce industry, the growth of the industry is driven by the increase in the number of people buying online and the increase in the number of people selling online.

In 2016, it was expected that total 100 million people would buy products online in India that would be 20% of the total population of India and 2% of the total population of India would sell products online. If in 2017, the population of India was increased by 10% over the previous year together with the total number of people who bought products online was increased by 20% over the previous year and the number of sellers remained constant then in the year 2017 the Industry revenue was \$ 50 billion.

32. In 2016, what was the total number of people from India who sold the products online?

- A. 1 million B. 5 million C. 50 million
D. 10 million E. None of these

33. If the revenue per seller was same in 2016 as compared to 2017 then what was the revenue per seller (in \$) in 2016? (one billion is equal to 1000 millions)

- A. 50 million B. 500 million C. 5 million
D. 5 billion E. None of these

34. If in 2018, the number of people who will buy products online will increased by 30% over the previous year then in 2018, total how many people in million will buy product online?

- A. 144 B. 156 C. 132
D. 150 E. None of these

35. In 2018, the population of India was 900 million then what was the percentage growth of India over the period 2016 to 2018?

- A. 60% B. 40% C. 80%
- D. 20% E. None of these

36. It is assumed that in 2018, because of JIO, 40% of the total population of India will buy products online. If in 2018, the population of India was increased by 5% over previous year then in 2018, total how many people will buy product in India?

- A. 231 million B. 243 million C. 239 million
- D. 233 million E. None of these



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Set-8

Directions: Study the following information carefully and answer the questions given beside.

The census officers provided the data regarding changes in population of three major towns for three years. Population of town A was 180600 in the third year and it increased 5% and 7.5% in second and third year respectively. Population of town B increased by 25% in second year and in the second year it was equal to 150% of the population of town A in first year. After taking population control measures, town B succeeds in controlling population as growth rate in third year was half of that of previous year. The area of town C is 1250 km² and population density for second year was 250. Growth rate for town C was 11.11% and 10% for second and third year respectively.

Note: Population density is calculated as Total population ÷ Total area.

37. Population of town B in third year exceed by how much compare to population of town A in second year?

- A. 110000 B. 107500 C. 102000
D. 105250 E. None of these

38. The average population of town B for three years forms what percentage of average population of town C for three years?

- A. 73.15% B. 74.88% C. 78.44%
D. 76.28% E. None of these

39. For town B, male to female ratio for the last two years was 7 : 5 and literate male and illiterate male are in the ratio of 4 : 1 for same years. Find the ratio between illiterate male in second year and literate male in third year.

- A. 8 : 9 B. 4 : 9 C. 9 : 2
D. 2 : 9 E. 7 : 2

40. Refer the data provided in previous question, by what percentage the number of illiterate male in third year for town B less than female in third year for town B?

A. 72%

B. 75%

C. 69%

D. 70.50%

E. 74.25%

41. For the third year, if $\frac{3}{8}$ th part of population of A town are not above 20 years old, 33% of population of B town are below 20 years old and 70% of population of C town are above 20 years old, how much population of three towns are above 20 years for third year?

A. 530440

B. 545400

C. 543300

D. 534400

E. Can't be determined



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Set-9

Directions: Study the given information carefully to answer the questions.

There are five ISKCON temples in five different cities of India; Vrindavan, Ahmedabad, Anantpur, Baroda and Banglore. The total number of ISKCON devotees in the cities are 9000. The strength of Vrindavan temple is 20% and that of Ahmedabad is 35% of the total devotees of the cities. Baroda and Banglore have equal strength. 30% of the devotees of Vrindavan know only Sanskrit. 40% devotees of temple in Baroda know only Hindi.

There are 10 more devotees in Ahmedabad temple who know only Hindi than the number of devotees of Baroda temple who know only Hindi. The strength of Anantpur temple is 50% that of temple Vrindavan. Two-fifths of devotees of Ahmedabad temple know both the languages. 40% devotees of Vrindavan temple know both languages.

50% devotees of Anantpur temple know only Hindi and the number of devotees of Anantpur temple who know both the languages is equal to the number of devotees who know only Sanskrit. The number of devotees who know only Sanskrit from Banglore temple is equal to the number of devotees who know only Hindi from Baroda temple.

The number of devotees who know only Hindi from Banglore temple is 40 more than the number of devotees who know only Hindi from Anantpur temple. The number of devotees of Baroda temple who know only Sanskrit is 45 more than the number of devotees who know both the languages from Banglore temple. Each devotee knows at least one of the two languages. Sanskrit and Hindi.

42. What is the percentage of the number of ISKCON devotees who know both the languages?

A. 24.5%

B. 34.5%

C. 28.5%

D. 36.5%

E. None of these

43. What is the difference between the number of ISKCON devotees who know Sanskrit and those who know only Hindi?

- A. 2500 B. 2800 C. 4000
D. 3500 E. None of these

44. The number of Bangalore ISKCON temple devotees who know only Sanskrit language is how many times of those who know both the languages from Vrindavan temple?

- A. 2 times B. 0.875 times C. 2.58 times
D. 0.5 times E. None of these

45. What is the ratio of the total number of devotees who know both the languages from temple Vrindavan and temple Anantpur together to the total number of devotees from temple Baroda?

- A. 2 : 1 B. 3 : 5 C. 4 : 3
D. 3 : 2 E. None of these

46. What is the maximum difference between the number of devotees who know only Sanskrit and only Hindi from a certain temple?

- A. Vrindavan B. Bangalore C. Anantpur
D. Ahmedabad E. Baroda

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Set-10

Directions: Study the given information carefully to answer the questions.

In Pitampura area of Delhi, there are 1200 people living in five different apartments, viz Drishti, Paradise, Umang, Maurya and Kala Kunj. The number of males is 24 more than the number of females. One-fourth of the total number of population are in Umang apartment. 16% of the total number of population are living in Drishti apartment.

Maurya apartment has 50 people more than Drishti apartment. The ratio of the number of males to females is 3 : 1 in Drishti apartment. The number of people in Kala Kunj is 20 more than the number of people living in Drishti apartment.

There are equal numbers of males and females living in Maurya apartment. 50 percent of the population of Paradise Apartment are males. Three-fourths of the population of Kala Kunj apartment are females.

47. The total number of females in Drishti apartment and Kala Kunj apartment together are how much more/less than the total number of males in Paradise and Umang apartments together?

- A. 77 B. 97 C. 87
D. 107 E. None of these

48. What is the ratio of the number of people in Paradise apartment to the number of people in Kala Kunj apartment?

- A. 127 : 106 B. 106 : 127 C. 63 : 47
D. 64 : 63 E. None of these

49. The number of males in Umang apartment is what per cent of the total number of females of all five apartments together? (nearest to two digits after decimal)

- A. 30.40% B. 29.40% C. 28.40%
D. 27.40% E. 26.40%

50. What is the ratio of the number of females in Paradise apartment to the number of males in Maurya apartment?

A. 63 : 62

B. 121 : 127

C. 62 : 63

D. 127 : 121

E. None of these

51. What is the approximate average population of Paradise, Umang and Kala Kunj apartments together?

A. 255

B. 250

C. 275

D. 245

E. 264



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Correct answers:

1	C	9	A	17	B	25	B	33	D	41	D	49	C
2	A	10	B	18	E	26	C	34	B	42	B	50	D
3	B	11	C	19	A	27	B	35	C	43	D	51	A
4	D	12	E	20	C	28	D	36	A	44	B		
5	B	13	D	21	D	29	D	37	C	45	B		
6	C	14	E	22	D	30	C	38	B	46	D		
7	A	15	B	23	B	31	C	39	D	47	C		
8	C	16	C	24	A	32	D	40	A	48	A		



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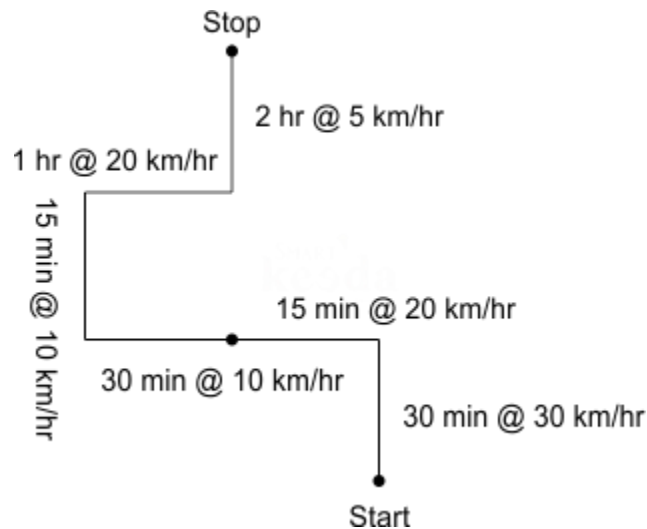
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Explanations:

1.



$$15 \text{ KM} + 5 \text{ KM} + 5 \text{ KM} + 2.5 \text{ KM} + 20 \text{ KM} + 10 \text{ KM} = 57.5 \text{ km}$$

Hence, option C is correct.

2.

$$\text{Total distance} = 57.5 \text{ km}$$

$$\text{Total time} = 30 \text{ min} + 15 \text{ min} + 30 \text{ min} + 15 \text{ min} + 1 \text{ hour} + 2 \text{ hours} = 4.5 \text{ hour}$$

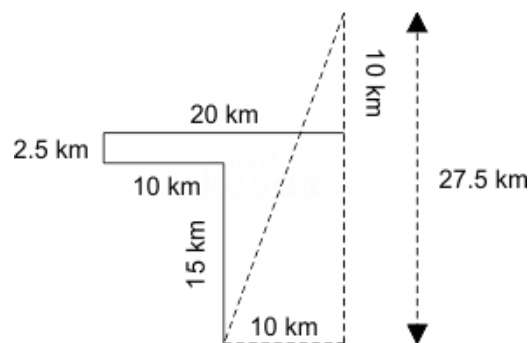
$$\text{Average speed} = \frac{\text{Distance}}{\text{Time}} = \frac{57.5}{4.5}$$

$$= \frac{115}{9} \text{ km/hr} = 12 \frac{7}{9} \text{ km per hour}$$

Hence, option A is correct.

3.

The total time taken by the Ankita = 4.5 hrs



And the shortest distance would have been $\sqrt{(27.5^2 + 10^2)}$

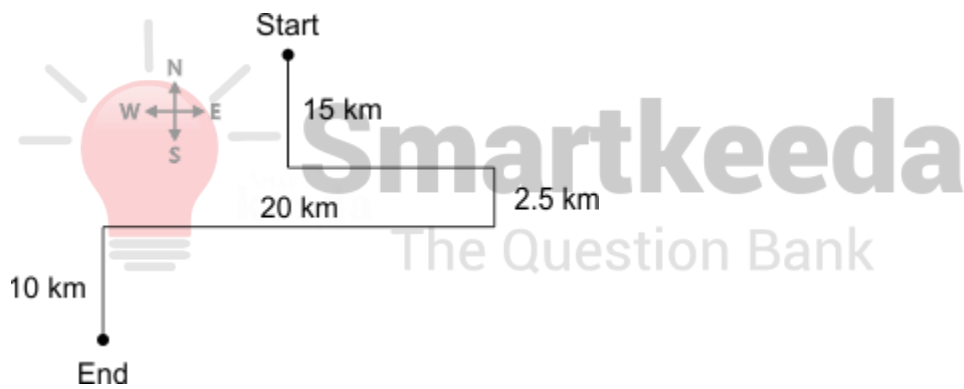
$= \sqrt{(756.25 + 100)}$
 = approximately 29.26 km
 = approximately 29 km @ 30 km per hour
 = approximately 58 min

The required difference

= 4.5 hours – 58 minutes
 = 3 hours 32 minutes

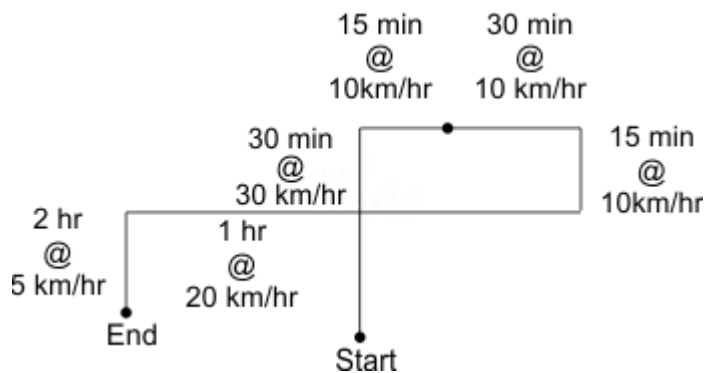
Hence, option B is correct.

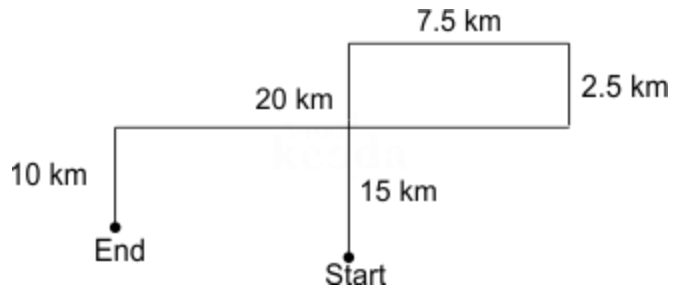
4. 27.5 km towards south and 10 km towards west



Hence, option D is correct.

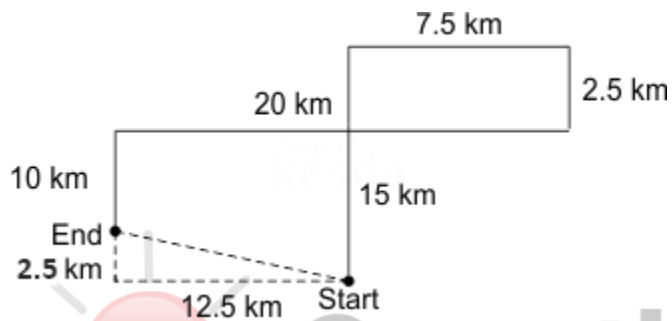
5. From the diagram, it is clear that the end point is 12.5 km towards west and 2.5 km towards north





Hence, option B is correct.

6.



The shortest distance

$$= \sqrt{(12.5^2 + 2.5^2)}$$

$$= \sqrt{(156.25 + 6.25)}$$

$$= \sqrt{162.5}$$

$$= \text{approximately } 12.75 \text{ km}$$

Hence, option C is correct.

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Common explanation (Q. 7-11):

Let the number of employees who arrived early = $5x$

The number of employees who left early = 20% of $5x = x$

The number of employees who left late = 40% of $5x = 2x$

The number of employees who left on time = $5x - 3x = 2x$

Let the number of employees who arrived late at the office = $4z$

The number of employees who left late = 50% of $4z = 2z$

The number of employees who left on time 25% of $4z = z$

The number of employees who left early = $4z - 3z = z$

Let the number of employees who arrived on time = $8y$

The number of employees who left early = 37.5% of $8y = 3y$ = The number of employees who left late

The number of employees who left on time = $8y - 6y = 2y$

	Early	On time	Late
Arrived	$5x$ (assume)	$8y$ (assume)	$4z$ (assume)
Left	$x + 3y + z$	$2x + z + 2y$	$2x + 2z + 3y$

According to the question,

$$5x = 2x + z + 2y$$

$$3x = z + 2y \text{ ----- (i)}$$

The number of employees who didn't arrive on time = $x + 3y + z + 2x + 2z + 3y = 144$

$$3x + 3z + 6y = 144$$

From the equation (i), $9x = 3z + 6y$ ----- (ii)

Therefore, $3x + 9x = 12x = 144$

$$X = 12$$

Again, according to the question,

$$x + 3y + z = 4z + 39$$

$$3y - 3z = 27 \text{ ----- (iii)}$$

Adding equation (ii) and equation (iii)

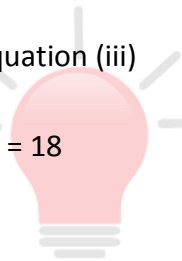
$$9y = 9x + 27$$

$$Y = x + 3 = 12 + 3 = 15$$

From the equation (iii)

$$3z = 45 - 27 = 18$$

$$Z = 6$$



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7. The following common explanation, we get

	Early	On time	Late
Arrived	$5x$ (assume)	$8y$ (assume)	$4z$ (assume)
Left	$X + 3y + z$	$2x + z + 2y$	$2x + 2z + 3y$

the total number of employees who left early = $X + 3Y + Z = 12 + 45 + 6 = 63$

the total number of employees who left late = $2X + 2Z + 3Y = 24 + 12 + 45 = 81$

The required difference = $81 - 63 = 18$

Hence, option A is correct.

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8.

the total number of employees working in that branch = $5x + 8y + 4z = 60 + 120 + 24 = 204$

Hence, option C is correct.

9.

The following common explanation, we get

The respective ratio = $5x : 8y : 4z = 60 : 120 : 24 = 5 : 10 : 2$

Hence, option A is correct.

10. The following common explanation, we get

the total number of employees working in that branch = $5x + 8y + 4z = 60 + 120 + 24 = 204$

of the total number of employees was on leave on the medical ground = 25% of 204 = 51

Remaining = $204 - 51 = 153$

The number of employees who was on leave for personal reason = 33.33% of 153 = 51

The number of employees present on the day before yesterday of that day = $153 - 51 = 102$

Hence, option B is correct.

11. The following common explanation, we get

The number of employees who left on time = $2x + z + 2y = 24 + 6 + 30 = 60$

The number of employees who didn't leave on time = $x + 3y + z + 2x + 2z + 3y = 3x + 6y + 3z = 36 + 90 + 18 = 144$

The reqd. % = $\frac{(144 - 60) \times 100}{144} = \frac{84 \times 100}{144} = 58.33\%$ approx.

Hence, option C is correct.

Common explanation (Q12-16)

Let the normal consumption of petrol = $4x$ litres per kilometre

While going Uphill, consumption of petrol = $5x$ litres per km (While going upwards (uphill) the consumption of petrol was increased by 25% of the normal consumption of petrol)

While going downhill, consumption of petrol = $2x$ litres per kilometre (while going downwards (downhill) the consumption of petrol was decreased by 50% of the normal consumption of petrol)

The total distance between A and B = 525 KM

Let the total distance travelled by him downhill = d km then, the total distance travelled by him uphill = $2.5d$ km

According to the question,

$$2.5d + d + 140 = 525$$

By solving, $d = \frac{385}{3.5} = 110$ km

Total uphill distance = $110 \times 2.5 = 275$ km

Total downhill distance = 110 km

While going from the Point A to point B, the car will consume total petrol of

$$5x \times 275 + 2x \times 110 + 4x \times 140 \text{ litres} = 2155x \text{ litres} \dots\dots\dots(i)$$

While coming from point B to point A, plane surface will be plane only but downhill distance will become uphill and the uphill distance will become downhill then plane surface distance = 110 km

Downhill distance = 275 km, uphill distance = 110 km

The total consumption of petrol while coming back from the point B to point A = $2X \times 275 + 5X \times 110 + 4X \times 140 = 1660x$ litres (II)

According to the question, while coming back from the point B to point A, he saves 7 litres of petrol

It means, $2155x - 1660x = 15$ litres

$$x = \frac{15}{495} = \frac{1}{33}$$

12. Following the common explanation, we get

$$2x \text{ litre per kilometre} = \frac{2}{33} \text{ litre per kilometre}$$

$$= 1 \text{ litre per } 16.5 \text{ kilometres}$$

Hence, option E is correct.

13. Following the common explanation, we get

The total petrol consumption while going and coming back

$$= \frac{2155}{33} + \frac{1660}{33} = \frac{3815}{33} \text{ litres}$$

The mileage of car on the plane surface = 4x litre per km

$$= 4 \times \frac{1}{33} \text{ litre per kilometre}$$

While going and coming back, the total distance = $525 \times 2 = 1050 \text{ km}$

$$1 \text{ km} = \frac{4}{33} \text{ litre}$$

$$1050 \text{ km} = 1050 \times \frac{4}{33} \text{ litre} = \frac{4200}{33} \text{ litres}$$

$$\text{Reqd. difference} = \frac{4200}{33} - \frac{3815}{33} = \frac{385}{33} \text{ litres} = 11.67 \text{ litres}$$

Hence, option D is correct.

14. Following the common explanation, we get

The total petrol consumption while going and coming back

$$= \frac{2155}{33} + \frac{1660}{33} = \frac{3815}{33} \text{ litres} = 115.6 \text{ litres}$$

Hence, option E is correct.

15. Following the common explanation, we get

While going from Point A to point B, Distance = 275 km uphill + 110 km downhill + 140 km on the plane surface ----- (i)

While coming back from the point B to point A

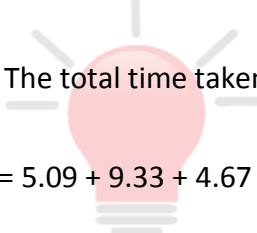
Distance = 140 km on the plane surface + 110 km uphill + 275 km downhill ----- (ii)

The total distance while going and coming back = 280 km on the plane surface + 385 km uphill + 385 km downhill (by adding equation (i) and equation (ii))

On the plane surface, the speed of car = 55 km per hr

On uphill, the speed of the car = 75% of 55 = 41.25 km per hour

On downhill, the speed of the car = 150% of 55 = 82.50 km per hour


$$\begin{aligned} \text{The total time taken} &= \frac{280}{55} + \frac{385}{41.25} + \frac{385}{82.50} \\ &= 5.09 + 9.33 + 4.67 = 19.09 \text{ hours approximately} \end{aligned}$$

Hence, option B is correct.

16. Following the common explanation, we get

The required difference = $5x - 2x = 3x = \frac{3}{33} = \frac{1}{11}$ litres per kilometres = 11 litres per kilometres

Hence, option C is correct.

17. In the year 2007, 30% of the population was affected by malaria out of which 10% were house-wives.

\therefore The number of house-wives affected by malaria in the year 2007 = 10% of 30% of 1000 = $0.1 \times 0.3 \times 1000 = 30$

Hence, option B is correct.

- 18.** The number of house-wives, students and drivers were in the ratio 20 : 11 : 9 in each year.

Let the common factor be x .

Also, every year 1000 people were surveyed.

$$\therefore 20x + 11x + 9x = 1000$$

$$\therefore x = 25$$

\therefore The total number of house-wives, students and drivers was 500, 275 and 225 respectively.

Now, in the year 2009, 45% of the total population was affected by malaria.

$$45\% \text{ of } 1000 = 450$$

Out of the 450 affected people, 30% were drivers.

$$30\% \text{ of } 450 = 135$$

Hence, the numbers of drivers who were not affected by malaria in the year 2009 = $225 - 135 = 90$

Hence, option E is correct.

- 19.** Total population of students for each year = 275

In the year 2006, the numbers of students affected by malaria = 60% of 40% of 1000 = $0.6 \times 0.4 \times 1000 = 240$ students

$$\therefore \text{The number of students not affected by malaria} = 275 - 240 = 35$$

$$\therefore \text{Difference between the two} = 240 - 35 = 205$$

Hence, option A is correct.

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20. The number of house-wives affected by malaria in the year 2005 = 10% of 30% of 1000 = $0.1 \times 0.3 \times 1000 = 30$

The number of house-wives affected by malaria in the year 2008 = 10% of 20% of 1000 = $0.1 \times 0.2 \times 1000 = 20$

The required ratio = $30 : 20 = 3 : 2$

Hence, option C is correct.

21. Total number of students = 275

The number of students affected by malaria in the year 2005 = 60% of 30% of 1000 = 180

∴ The number of students not affected by malaria = $275 - 180 = 95$

The number of students affected by malaria in the year 2006 = 60% of 40% of 1000 = 240

∴ The number of students not affected by malaria = $275 - 240 = 35$

The number of students affected by malaria in the year 2007 = 60% of 30% of 1000 = 180

∴ The number of students not affected by malaria = $275 - 180 = 95$

The number of students affected by malaria in the year 2008 = 60% of 20% of 1000 = 120

∴ The number of students not affected by malaria = $275 - 120 = 155$

The number of students affected by malaria in the year 2009 = 60% of 45% of 1000 = 270

∴ The number of students not affected by malaria = $275 - 270 = 5$

Thus, 2008 had the maximum number of students not affected by malaria.

Hence, option D is correct.

Common explanation :

Let the sum of money he invested in Axis bank = $100x$ then at the end of one year

$$\text{Amount} = \frac{100x \times 1 \times 20}{100} + 100x = 120x$$

The CI of 2 years = 57600

The CI of 1 year = 24000

Difference = $57600 - 24000 = 33600$

Now, $33600 - 24000 = 9600$

At $R\%$ per annum, 24000 gives compound interest of Rs. 9600

$$\frac{24000 \times R}{100} = 9600$$

$R = 40\%$ per annum

22. Following the common explanation, we get

At 40% per annum, $120x$ gives compound interest of 57600 in two years or Rs. 24000 in one year

$$CI = P \left(1 + \frac{R}{100}\right)^N - P$$

$$120x \left(1 + \frac{40}{100}\right) - 120x = 24000$$

$$120x \times 1.4 - 120x = 24000$$

$$168x - 120x = 48x = 24000$$

$$x = \frac{24000}{48} = 500$$

The sum of money he had invested in Axis bank = $100x = 100 \times 500 = \text{Rs. } 50000$

Hence, option D is correct.

23. Following the common explanation, we get

The interest, Krishna received from Axis bank = $20x = 20 \times 500 = 10,000$

The interest from Bandhan bank = 57600

The required sum = $10,000 + 57600 = 67600$

Hence, option B is correct.

24. Following the common explanation, we get

$P = 50000$

$R = 40\%$

1st year = 40% per annum SI

Next 2 years = 20% per annum CI

Amount at the end of 1st year i.e. received from the Axis bank = $50000 + 40\%$ of
 $50000 =$
 70000

$SI = 70000 - 50000 = 20000$

From the Bandhan bank

$$CI = P \left(1 + \frac{R}{100}\right)^N - P$$

$$CI = 70000 \left(1 + \frac{20}{100}\right)^2 - 70000$$

$CI = 30800$

Total interest = $20000 + 30800 = 50800$

The interest, Krishna received from Axis bank = $20x = 20 \times 500 = 10,000$

The interest from Bandhan bank = 57600

$$\text{The required sum} = 10,000 + 57600 = 67600$$

$$\text{The required difference} = 67600 - 50800 = 16800$$

Hence, option A is correct.

25. Following the common explanation, we get

$$P = 50000$$

$$\text{SI at the end of 3 years} = \frac{50000 \times 20 \times 3}{100} = \text{Rs. } 30,000$$

Hence, option B is correct.

26. Following the common explanation, we get

$$P = 50,000$$

Let the interest received from the Axis bank = Rs. x then

the first year's interest at Bandhan bank = 40% of $(50000 + x) = x$

$$20000 + 0.4x = x$$

$$0.6x = 20000$$

$$x = \frac{200000}{6} = \frac{100000}{3}$$

$$R = \frac{\text{SI} \times 100}{P \times T}$$

$$R = \frac{(100000/3) \times 100}{50000 \times 1} = \frac{1000}{15} = \frac{200}{3} \% = 66 \frac{2}{3} \%$$

Hence, option C is correct.

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Common explanation :

Let the marked price of juicer = $100x$

Then, The amount Chand paid = $(100 - 10)\%$ of $100x = 90\%$ of $100x = 90x$

The amount Chandni will pay = 90% of 80% of $100x = 72x$

The amount Chanchal will pay = 90% of 80% of 75% of $100x = 54x$

According to the question, $72x - 54x = 18x = 360$

$x = 20$

27. Total marked price of 3 juicers = $2000 \times 3 = 6000$

The total money paid by them = $90x + 72x + 54x = 216x = 4320$

The reqd. % = $\frac{4320 \times 100}{6000} = 72\%$

Hence, option B is correct.

28. The amount paid by Chand = $90x$

The amount paid by Chanchal = $54x$

The reqd. % = $\frac{(90x - 54x) \times 100}{54x} = \frac{36 \times 100}{54} = \frac{200}{3} = 66.67\%$

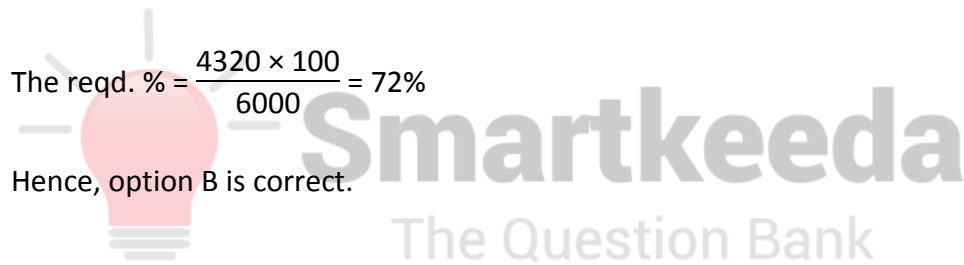
Hence, option D is correct.

29. The amount paid by Chand = $90x$

The amount paid by Chanchal = $54x$

The required ratio = $90x : 54x = 5 : 3$

Hence, option D is correct.



- 30.** The amount Chand paid = $(100 - 10)\%$ of $100x = 90\%$ of $100x = 90x = 90 \times 20 = 1800$

The money left with him = $2500 - 1800 = 700$

Hence, option C is correct.

- 31.** $MP = 100X = 100 \times 20 = 2000$

Hence, option C is correct.

- 32.** Let the total population of India in 2016 = x million then

20% of x million = 100 million

$x = 100 \times 5 = 500$ million

2% of the total population of India sold products online = 2% of 500 million = 10 million

Hence, option D is correct.

- 33.** Let the total population of India in 2016 = x million then

20% of x million = 100 millions

$x = 100 \times 5 = 500$ millions

2% of the total population of India sold products online = 2% of 500 million = 10 million

In 2017, the number of sellers remained constant then in 2017, the revenue per sellers

$$= \frac{50 \text{ billion}}{10 \text{ million}} = \frac{50 \times 1000}{10} = 5000 \text{ million}$$

= 5 billion = revenue per seller in 2016

Hence, option D is correct.

34. In 2016, 100 million people bought products online

In 2017, 120% of 100 = 120 million people brought products online

In 2018, 130% of 120 = $13 \times 12 = 156$ million people will buy products online

Hence, option B is correct.

35. Let the total population of India in 2016 = x million then

20% of x million = 100 millions

$x = 100 \times 5 = 500$ millions

The reqd. % = $\frac{(900 - 500) \times 100}{500} = \frac{400 \times 100}{500} = 80\%$

Hence, option C is correct.

36. Let the total population of India in 2016 = x million then

20% of x million = 100 millions

$x = 100 \times 5 = 500$ millions

The population of India in 2017 = 110% of 500 = 550 million

The population of India in 2018 = 105% of 550 million = 577.5 million

In 2018, because of JIO, 40% of the total population of India will buy product online = 40% of 577.5

$= \frac{40 \times 577.5}{100} = 231$ million

Hence, option A is correct.



37.

Let the Population of Town A in first year be 100.

Thus, population of town A in third year = 105% of 107.50% of 100 = 112.875 i.e. 180600.

∴ Population of Town A in first year

$$= \frac{180600 \times 100}{112.875} = 160000$$

Thus, population of town A in second year = 105% of 160000 = 168000

Population of town B in second year = 150% of 160000 = 240000

As given, growth rate of population for town B in the second year was 25%, thus population in first year

$$= \frac{240000 \times 100}{125} = 192000$$

As growth year became half of previous years' growth rate, Population of town B in third year

$$= 240000 + [240000 \times 12.50\% \text{ (half of 25\%)}]$$

$$= 240000 + 30000$$

$$= 270000$$

For town C, population in second year = Population density × Area = 250 × 1250 = 312500

As growth rate for town C was 11.11% and 10% for second and third year respectively, population of C in first year

$$= \frac{312500 \times 100}{111.11} = 281250$$

Population of C in third year = 110% of 281250 = 309375.

Thus, we can present above data in tabular form as follows:

Towns	Population		
	First Year	Second Year	Third Year
A	160000	168000	180600
B	192000	240000	270000
C	281250	312500	343750

Required difference = Population of town B in third year – Population of town A in second year

$$= 270000 - 168000 = 102000$$

Hence, option C is correct.

38.

Average population of town B

$$= \frac{192000 + 240000 + 270000}{3} = \frac{702000}{3} = 234000$$

Average population of town C

$$= \frac{281250 + 312500 + 343750}{3} = \frac{937500}{3} = 312500$$

$$\therefore \text{Reqd. \%} = \frac{234000}{312500} \times 100 = 74.88\%$$

Hence, option B is correct.

39.

Number of male in town B for Second year

$$= \frac{7 \times 240000}{12} = 140000$$

Number of male in town B for third year

$$= \frac{7 \times 270000}{12} = 157500$$

Number of illiterate male in second year

$$= \frac{1 \times 140000}{5} = 28000$$

Number of literate male in third year

$$= \frac{4 \times 157500}{5} = 126000$$

Thus, required ratio = 28000 : 126000 i.e. 2 : 9

Hence, option D is correct.

40.

Number of illiterate male in third year for town B

$$= \frac{1 \times 157500}{5} = 31500$$

Number of female in third year for town B

$$= \frac{5 \times 270000}{12} = 112500$$

$$\therefore \text{Reqd. \%} = \frac{112500 - 31500}{112500} \times 100 = 72\%$$

Hence, option A is correct.

41.

Population above 20 years in town A

$$= 180600 - \frac{180600 \times 3}{8} = 112875$$

Population above 20 years in town B = $(100 - 33)\%$ of 270000 = 180900

Population above 20 years in town C = 70% of 343750 = 240625

Thus, required total = $112875 + 180900 + 240625 = 534400$

Hence, option D is correct.



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Common Explanations:

Following the given information we can create a table as follows:

Temples	Total	Only Sanskrit	Only Hindi	Both Sanskrit & Hindi
Vrindavan	20% of 9000 = 1800	30% of 1800 = 540	540	40% of 1800 = 720
Ahmedabad	35% of 9000 = 3150	1250	630 + 10 = 640	2/5 of 3150 = 1260
Anantpur	50% of 1800 = 900	225	50% of 900 = 450	225
Baroda	1575	455 + 45 = 500	40% of 1575 = 630	445
Banglore	1575	630	450 + 40 = 490	455

42. Following the common explanation, we get

Total number of ISKCON devotees who know both languages

$$= 720 + 1260 + 225 + 445 + 455$$

$$= 3105$$

Total number devotees in all the cities

$$= 9000$$

$$= \frac{3105}{9000} \times 100 = 34.5\%$$

Hence, option B is correct.

43. Following the common explanation, we get

Total number of devotees who know Sanskrit

$$= 540 + 1250 + 225 + 500 + 630$$

$$= 3145 + 3105 \text{ (from both the languages)}$$

$$= 6250$$

Total number of devotees who know only Hindi

$$= 540 + 640 + 450 + 630 + 490$$

$$= 2750$$

$$\text{Reqd. difference} = 6250 - 2750$$

$$= 3500$$

Hence, option D is correct.

44.

Following the common explanation, we get

Total number of Bangalore ISKCON temple devotees who know only Sanskrit = 630

Total number of Vrindavan ISKCON temple devotees who know both the languages = 720

$$\text{Reqd. answer} = \frac{630}{720} = 0.875 \text{ times}$$

Hence, option B is correct.

45. Following the common explanation, we get

Total number of devotees from Vrindavan temple who know both the languages = 720

Total number of devotees from Anantpur temple who know both the languages = 225
= 720 + 225 = 945

Total number of devotees from Baroda temple = 1575

$$\text{Reqd. ratio} = \frac{945}{1575} = \frac{3}{5} = 3 : 5$$

Hence, option B is correct.

46.

Following the common explanation, we get that the Ahmedabad temple has the maximum difference between the no. of devotees who know only Sanskrit and only Hindi.

Hence, option D is correct.

47.

Let the number of females be x

So, the number of males = $x + 24$

According to the question,

$$x + x + 24 = 1200$$

$$\therefore x = 588$$

So, the number of females = 588

Number of males = $588 + 24 = 612$

Total no. of population in Umang apartment = $\frac{1}{4} \times 1200 = 300$

Total no. of population in Drishti apartment = $\frac{16}{100} \times 1200 = 192$

Total no. of population in Maurya apartment = $192 + 50 = 242$

Total no. of population in Kala kunj = $192 + 20 = 212$

Total no. of population in Paradise = $1200 - 300 - 192 - 242 - 212 = 254$

Now, the no. of males in Drishti apartment = $\frac{3}{4} \times 192 = 144$

No. of females in Drishti apartment = $\frac{1}{4} \times 192 = 48$

No. of males in Maurya apartment = 121

No. of females in Maurya apartment = 121

No. of males in Paradise apartment = 127

No. of females in Paradise apartment = 127

$$\therefore \text{No. of females in Kala Kunj} = \frac{3}{4} \times 212 = 159$$

No. of males in Kala Kunj = 53

$$\therefore \text{Number of males in Umang} = 167$$

Number of females in Umang = 133

Total no. of females in Drishti and Kala Kunj apartments = $48 + 159 = 207$

Total number of males in Paradise and Umang apartments = $127 + 167 = 294$

$$\therefore \text{Difference} = 294 - 207 = 87.$$

Hence, option C is correct.

48.

Let the number of females be x

So, the number of males = $x + 24$

According to the question,

$$x + x + 24 = 1200$$

$$\therefore x = 588$$

So, the number of females = 588

Number of males = $588 + 24 = 612$



$$\text{Total no. of population in Umang apartment} = \frac{1}{4} \times 1200 = 300$$

$$\text{Total no. of population in Drishti apartment} = \frac{16}{100} \times 1200 = 192$$

$$\text{Total no. of population in Maurya apartment} = 192 + 50 = 242$$

$$\text{Total no. of population in Kala kunj} = 192 + 20 = 212$$

$$\text{Total no. of population in Paradise} = 1200 - 300 - 192 - 242 - 212 = 254$$

$$\text{Now, the no. of males in Drishti apartment} = \frac{3}{4} \times 192 = 144$$

$$\text{No. of females in Drishti apartment} = \frac{1}{4} \times 192 = 48$$

$$\text{No. of males in Maurya apartment} = 121$$

$$\text{No. of females in Maurya apartment} = 121$$

$$\text{No. of males in Paradise apartment} = 127$$

$$\text{No. of females in Paradise apartment} = 127$$

$$\therefore \text{No. of females in Kala Kunj} = \frac{3}{4} \times 212 = 159$$

$$\text{No. of males in Kala Kunj} = 53$$

$$\therefore \text{Number of males in Umang} = 167$$

$$\text{Number of females in Umang} = 133$$

$$\text{Reqd. ratio} = \frac{254}{212} = 127 : 106$$

Hence, option A is correct.

49.

Let the number of females be x

So, the number of males = $x + 24$

According to the question,

$$x + x + 24 = 1200$$

$$\therefore x = 588$$

So, the number of females = 588

Number of males = $588 + 24 = 612$

Total no. of population in Umang apartment = $\frac{1}{4} \times 1200 = 300$

Total no. of population in Drishti apartment = $\frac{16}{100} \times 1200 = 192$

Total no. of population in Maurya apartment = $192 + 50 = 242$

Total no. of population in Kala kunj = $192 + 20 = 212$

Total no. of population in Paradise = $1200 - 300 - 192 - 242 - 212 = 254$

Now, the no. of males in Drishti apartment = $\frac{3}{4} \times 192 = 144$

No. of females in Drishti apartment = $\frac{1}{4} \times 192 = 48$

No. of males in Maurya apartment = 121

No. of females in Maurya apartment = 121

No. of males in Paradise apartment = 127

No. of females in Paradise apartment = 127

$$\therefore \text{No. of females in Kala Kunj} = \frac{3}{4} \times 212 = 159$$

No. of males in Kala Kunj = 53

$$\therefore \text{Number of males in Umang} = 167$$

Number of females in Umang = 133

$$\text{Reqd. \%} = \frac{167}{588} \times 100 = 28.401\% \approx 28.40\%$$

Hence, option C is correct.

50.

Let the number of females be x

So, the number of males = $x + 24$

According to the question,

$$x + x + 24 = 1200$$

$$\therefore x = 588$$

So, the number of females = 588

Number of males = $588 + 24 = 612$

$$\text{Total no. of population in Umang apartment} = \frac{1}{4} \times 1200 = 300$$

$$\text{Total no. of population in Drishti apartment} = \frac{16}{100} \times 1200 = 192$$

Total no. of population in Maurya apartment = $192 + 50 = 242$

Total no. of population in Kala kunj = $192 + 20 = 212$

Total no. of population in Paradise = $1200 - 300 - 192 - 242 - 212 = 254$

Now, the no. of males in Drishti apartment = $\frac{3}{4} \times 192 = 144$

No. of females in Drishti apartment = $\frac{1}{4} \times 192 = 48$

No. of males in Maurya apartment = 121

No. of females in Maurya apartment = 121

No. of males in Paradise apartment = 127

No. of females in Paradise apartment = 127

∴ No. of females in Kala Kunj = $\frac{3}{4} \times 212 = 159$

No. of males in Kala Kunj = 53

∴ Number of males in Umang = 167

Number of females in Umang = 133

Reqd. ratio = $\frac{127}{121} = 127 : 121$

Hence, option D is correct.

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51.

Let the number of females be x

So, the number of males = $x + 24$

According to the question,

$$x + x + 24 = 1200$$

$$\therefore x = 588$$

So, the number of females = 588

Number of males = $588 + 24 = 612$

Total no. of population in Umang apartment = $\frac{1}{4} \times 1200 = 300$

Total no. of population in Drishti apartment = $\frac{16}{100} \times 1200 = 192$

Total no. of population in Maurya apartment = $192 + 50 = 242$

Total no. of population in Kala kunj = $192 + 20 = 212$

Total no. of population in Paradise = $1200 - 300 - 192 - 242 - 212 = 254$

Now, the no. of males in Drishti apartment = $\frac{3}{4} \times 192 = 144$

No. of females in Drishti apartment = $\frac{1}{4} \times 192 = 48$

No. of males in Maurya apartment = 121

No. of females in Maurya apartment = 121

No. of males in Paradise apartment = 127

No. of females in Paradise apartment = 127

\therefore No. of females in Kala Kunj = $\frac{3}{4} \times 212 = 159$

No. of males in Kala Kunj = 53

∴ Number of males in Umang = 167

Number of females in Umang = 133

$$\text{Avg. population} = \frac{254 + 300 + 212}{3} = \frac{766}{3} = 255\frac{1}{3} \approx 255$$

Hence, option A is correct.



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