

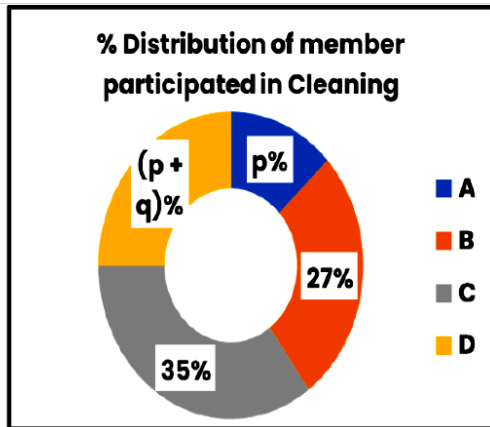
DI Test 5

(1 - 5): People from Germany, Spain and India gathered for an international event in a auditorium. 50% of the people who speak Hindi also speak Spanish. Number of people who speak only Spanish is 25% of the number of people who speak only German. Number of people who speak all the three languages is the same as the number of people who speak none of the three languages. Number of people who speaks only Hindi and German is the same as the number of people who speak only German and Spanish, which is equal to half of the number of people who speak Hindi and Spanish. Number of people speak only Hindi and Spanish and the number of people who speak only Spanish are equal, each of which is twice the number of people who speak none of the three languages.

1. What percentage of the people who speak exactly two languages speak only Hindi and Spanish?
(A) 20% (B) 25% (C) 30% (D) 40% (E) None of these
2. Number of people who speak only German is 128, Find the number of people who speak only Hindi.
(A) 20 (B) 24 (C) 30 (D) 32 (E) None of these
3. If the number of people who either speaks all three languages or can not speak any of three languages is 36, then how many people were present in the auditorium?
(A) 648 (B) 654 (C) 666 (D) 672 (E) None of these
4. If the difference between number of people who speak exactly one language and exactly two languages is 650, then find the number of people who speaks German.
(A) 750 (B) 800 (C) 1200 (D) 1250 (E) Relation cannot be determined
5. What is the ratio between the number of people who speaks German but not Spanish and the number of people who do not speak German?
(A) 13 : 18 (B) 15 : 14 (C) 17 : 16 (D) 19 : 13 (E) None of these

(6 - 10) Members from four groups participate either in repairing or cleaning of a building. Donut graph represents percentage distribution of number of members participated in cleaning. Table represents number of members participated in repairing. In group A, Number of members participated in cleaning is 13 less than that of repairing. There are 143 members in group A.

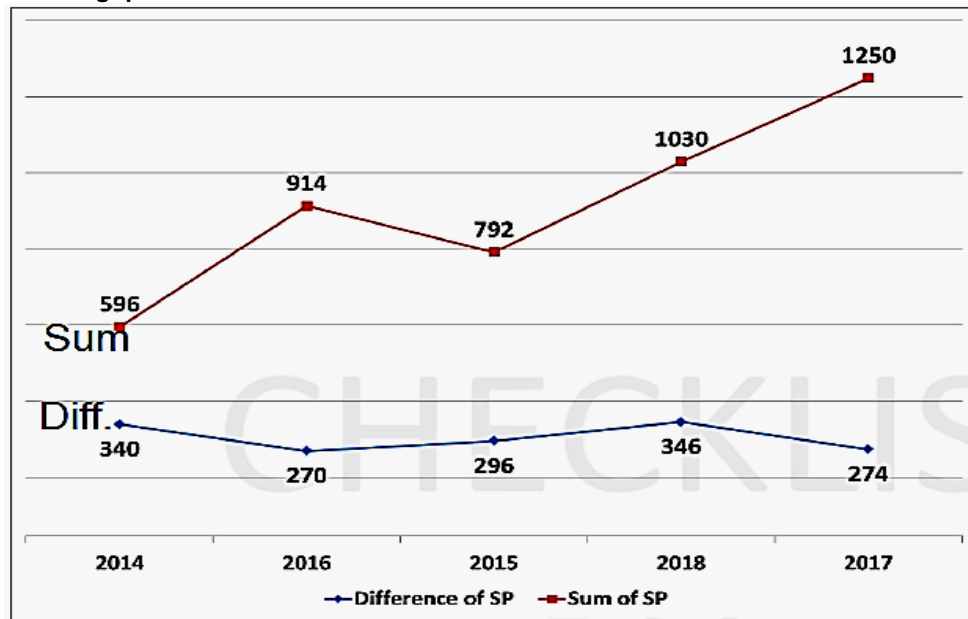
Groups	Number of members participated in Repairing
A	6p
B	7p + 9
C	12q + 6
D	7q - 4



6. Number of members in group A who participated in repairing is what percentage more/less than number of members in group D who participated in repairing?
(A) 2.5% (B) 4.5% (C) 7.5% (D) 9.5% (E) None of these
7. What is the difference between total number of member repairing the building and total number of members cleaning the building?
(A) 68 (B) 76 (C) 84 (D) 92 (E) Relation cannot be determined
8. What is the ratio of number of members participated in cleaning from group C and D together to the number of members participated in repairing from group B and C together?

- (A) 4 : 3 (B) 6 : 5 (C) 8 : 7 (D) 10 : 9 (E) None of these
9. What is the difference total the number of members in group A and C together and total number of members in group B and D together?
(A) 24 (B) 28 (C) 32 (D) 36 (E) None of these
 10. If total number of members in group E is (3p + 5)% more than the total number of members in group C, then how many members are there in group E?
(A) 394 (B) 426 (C) 468 (D) 502 (E) None of these

(11 - 15): The graph shows the sum and difference of the selling prices of two items X and Y (The SP of X > SP of Y) in five different years. Study the data carefully and answer the following questions.

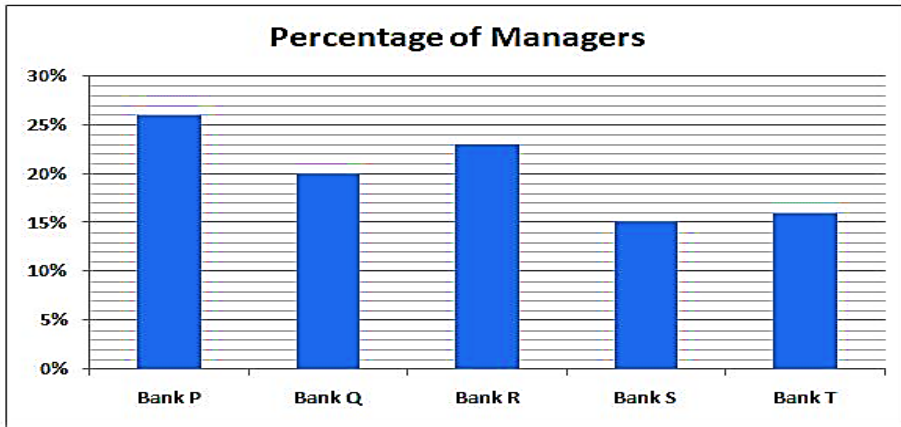


11. The SP of X in 2016 is approximately what per cent less than the SP of X in 2017?
A. 22.3% B. 28.56% C. 19.6% D. 25.55% E. None of the above
 12. If in 2018, the percentage discount on Y was 14.5% and the mark percentage was 60%, find the percentage profit earned on Y in 2018.
A. 34.2% B. 36.8% C. 39.5% D. 31.4% E. None of the above
 13. Find the average selling price of Y in all the years together.
A. 301.2 B. 304.5 C. 305.6 D. 308.4 E. None of the above
 14. If the seller had a profit of 35% on X in 2014, find the cost price of X in 2014.
A. 430 B. 450 C. 490 D. 470 E. None of the above
 15. What is the difference between the cost price of Y in 2017 and 2018 if Y was sold at 22% and 36.8% profit in 2017 and 2018 respectively?
A. 120 B. 160 C. 140 D. 150 E. None of the above
- {16 - 17}: Read the data carefully and answer the following questions.
- Ajay, Ranu and Jeevan invested Rs. 'x', Rs. 15,000 and Rs. 'x + 1000' respectively in a business. After 6 months from the start, Ranu invested Rs. '5y' more and 6 months later got 7/8 times as much profit as Ajay. If 6 months from the start, both Ranu and Jeevan had invested Rs. '6y' more, the ratio of their profit after one year of business would have been 3 : 4 respectively.
16. What was the amount invested by Ajay?
A. Rs. 18900 B. Rs. 12500 C. Rs. 20000 D. Rs. 34000 E. None of these
 17. In what ratio Atul and Shravan would divide the amount of profit?
Statement I : Atul invested the amount which is 15% more than the amount invested by Jeevan.
Statement II : Shravan invested amount for a year and Atul invested amount for 18 months.

A.Statement I alone is sufficient. B.Statement II alone is sufficient. C.Either statement I or statement II is sufficient. D.Both statement I and statement II are necessary. E.Both the statement together are not sufficient.

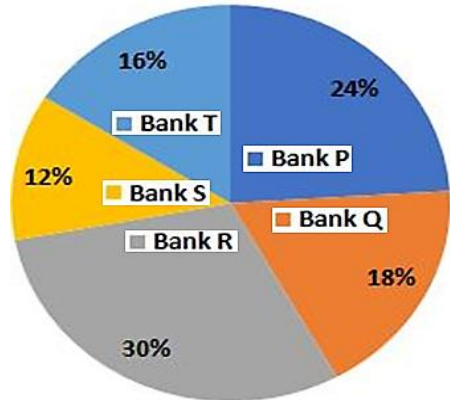
{18 – 22}:Study the following information carefully and answers the questions given below.

The Bar graph given below shows the percentage distribution of the total number of Managers working at the five different commercial banks P, Q, R, S and T.



The Pie chart given below shows the percentage distribution of the total number of Assistant Managers working at the five different commercial banks P, Q, R, S and T.

{Percentage of Assistant Managers}



18. Find the average number of Managers in Bank P and Bank T and Assistant Managers in Bank S, if the ratio of the total number of Managers to the total number of Assistant Managers is 9 : 7 and the number of Managers in the Bank P is 4680.

1.3248 2.3120 3.4200 4.3080 5.None of these

19. If the ratio of the number of Assistant Managers to the number of Managers in the Bank Q is 81 : 100. Then find the number of Managers in the Bank R is what percentage more or less than the number of Assistant Managers in the Bank T? (Approximately).

1.55% less 2.60% more 3.48%less 4.45% more 5.None of these

20. If the ratio between the total number of Assistant Managers to the total number of Managers is $x^3 : (x + 1)^2$, then find the minimum possible value of x, if it is given that the number of Managers in Bank Q is 25% more than the number of Assistant Managers in the same company.

1.3 2.5 3.7 4.4 5.None of these

21. If the average of the total number of Managers and Assistant Managers of all the Banks together is 17,000 and the difference between Managers and Assistant Managers in Bank T is

480 where the number of Managers is more than Assistant Managers. Then find the sum of the total number of Assistant Managers in Bank P and the total number of Managers in Bank S.

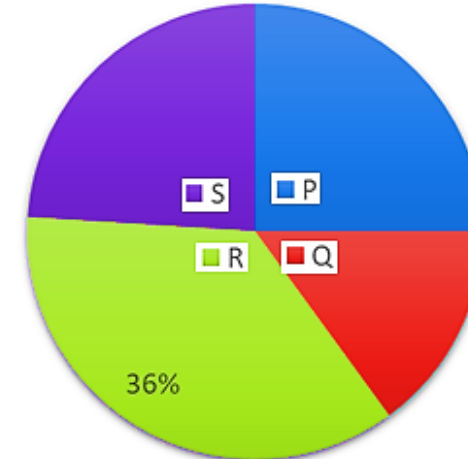
1.8223 2.6278 3.7324 4.6495 5.None of these

22. Find the sum of the average of the total number of Managers in Bank P, Q and R together and the average of the total number of Assistant Managers in Bank S and T together.

1.6828 2.9732 3.8373 4.7388 5.Cannot be determined

{23 – 26}: Read the following information carefully and answer the questions based on it.

The chart given below shows the % distribution of the number of ordered books on two e-commerce websites – E bay and Myntra on a particular day from four different cities – P, Q, R, and S.



City	Respective ratio of order booked on E bay to Myntra
P	2: Z
Q	1: 2
R	5:3
S	3: Z

Note: a) Order booked from city R is 50% more than from city S, while the order booked from city P is 200.

b) (Ordered booked from city R – 60% x ordered booked from city P) = 1.4 x of ordered booked from city Q.

c) Orders booked on Ebay from city Q are less than that of city P.

d) $Z = Y + 1$, Where Y is a prime number and Z is composite number

23. For City P, number of orders booked on flip kart is 1.5 times that on Ebay, and the total number of orders booked on Ebay, flip kart and Myntra are (K + 200).

Find which of the following statements is/are definitely true.

I. Z and K are co primes

II. K is five less than the number of orders booked on Myntra from city Q.

III. On dividing (K – Z) by 7 remainder is 6

1.Only II is true 2.Only I and II are true 3.Only III and II are true 4.All I, II, and III are true 5.None of these

24. For S, the number of orders delivered on Ebay is thrice as that of non-delivered, while the number of orders delivered on Myntra is seven times as that of non-delivered. Find total number of non-delivered orders in city S. Number of delivered orders = Number of orders booked – Number of orders not delivered.

1.48 2.32 3.64 4.40 5.Can't be determined

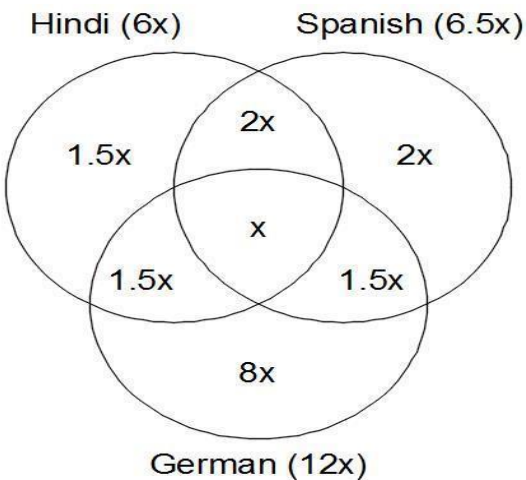
25. Find the central angle that corresponds to the number of orders booked from city Q.

1.54 2.90 3.36 4.72 None of these

26. For city T, total number of orders booked is 10 more than number of orders booked on Myntra from city P, while number of orders booked in Ebay is average of number of orders booked on Myntra from city R and S together, then find number of orders booked on Myntra in city T.

1.62 2.32 3.52 4.42 5.None of these

(1 - 5)
 People who speak all 3 language = People who speak none of 3 language = x
 People who speak only Hindi & Spanish = People who speak only Spanish = 2x
 People who speak Hindi = $(2x + x)/0.5 = 3x/0.5 = 6x$
 People who speak only German = $2x/0.25 = 8x$
 People who speak only Hindi & German = People who speak only German & Spanish = $3x/2 = 1.5x$



1. **Ans. (D)**
 Required % = $2x/(2x + 1.5x + 1.5x) \times 100 = 2x/5x \times 100 = 40\%$
 2. **Ans. (B)**
 People who speak only Hindi = $128/8 \times 1.5 = 24$
 3. **Ans. (C)**
 $x = 36$
 People present in Auditorium = $12x + 1.5x + 2x + 2x + x = 18.5 \times 36 = 666$
 4. **Ans. (C)**
 $(1.5x + 2x + 8x) - (2x + 1.5x + 1.5x) = 650$
 $11.5x - 5x = 650$
 $6.5x = 650$
 $x = 100$
 People who speak German = $12x = 12 \times 100 = 1200$
 5. **Ans. (D)**
 Ratio = $(8x + 1.5x) : (1.5x + 2x + 2x + x) = 9.5x : 6.5x = 19 : 13$
 (6 - 10)
 In Group A, Member participated in Repairing = $(143 + 13)/2 = 156/2 = 78$
 Member participated in Cleaning = $78 - 13 = 65$
 $6p = 78$
 $p = 13$
 $p + 27 + 35 + (p + q) = 100$
 $2 \times 13 + 62 + q = 100$
 $q = 100 - 62 - 26 = 100 - 88 = 12$

Group →	A	B	C	D	Total
Member participated in Repairing	78	100	150	80	408
Member participated in Cleaning	65	135	175	125	500
Total Member	143	235	325	205	908

6. **Ans. (A)**
 Required % = $(80 - 78)/80 \times 100 = 2.5\%$
 7. **Ans. (D)**
 Difference = $500 - 408 = 92$
 8. **Ans. (B)**
 Ratio = $(175 + 125) : (100 + 150) = 300 : 250 = 6 : 5$
 9. **Ans. (B)**
 Number of members in Group A & C = $143 + 325 = 468$
 Number of members in Group B & D = $235 + 205 = 440$
 Difference = $468 - 440 = 28$
 10. **Ans. (C)**
 Members in group E is more than Members in group C by
 $= 3 \times 13 + 5 = 39 + 4 = 44\%$
 Members in group E = $325 \times 1.44 = 468$
 (11 - 15)
 1. Required percentage = $\frac{762-592}{762} \times 100 = 22.3\%$
 2. Required percentage = $\frac{342-250}{250} \times 100 = 36.8\%$
 3. Required average = $\frac{1528}{5} = 305.6$
 4. Required CP = 346.66 (None of the above)
 5. Required difference = $400 - 250 = 150$

{16 - 17}
 Solution
 Ratio of profit share of Ajay : Ranu : Jeevan
 $\Rightarrow (x * 12) : [15000 * 6 + (15000 + 5y) * 6] : [(x + 1000) * 12]$
 Ajay : Ranu = $12x : 6 * (30000 + 5y) = 8 : 7$
 $7x = 20y + 120000 \dots \dots \dots (i)$
 Ratio of profit share of Ajay : Ranu : Jeevan
 $\Rightarrow [x * 12] : [15000 * 6 + (15000 + 6y) * 6] : [(x + 1000) * 6 + (x + 1000 + 6y) * 6]$
 $\Rightarrow 12x : 6(30000 + 6y) : 6(2x + 2000 + 6y)$
 Ranu : Jeevan = $[6 * (30000 + 6y)] : [6 * (2000 + 2x + 6y)]$
 $(30000 + 6y) : (2000 + 2x + 6y) = 3 : 4$
 $40000 + 8y = 2000 + 2x + 6y$
 $38000 + 2y = 2x$
 $x = y + 19000 \dots \dots \dots (ii)$
 From (i) and (ii) we get,
 $x = 20000$

and $y = 1000$

16. c

Amount invested by Ajay = Rs. 20000

17. e

From statement I:

Amount invested by Jeevan = $20000 + 1000 = \text{Rs. } 21000$

Amount invested by Atul = $21000 \times 115/100 = \text{Rs. } 24150$

From statement II:

Time for which Shraavan invested the amount = 12 months

Time for which Atul invested the amount = 18 months

But from both statement I and II together we cannot find amount invested by Shraavan.

{18 – 22}

18. Answer: D

Number of Managers in Bank P = 4680

So, the total number of Managers is = $4680 \times 100/26 = 18,000$

Then, the total number of Assistant Managers is = $(18,000/9) \times 7 = 14,000$

Number of Managers in Bank T = $18,000 \times 16/100 = 2880$

Number of Assistant Managers in Bank S = $14,000 \times 12/100 = 1680$

So, the required average is = $(4680 + 2880 + 1680)/3$

= $9240/3 = 3080$

19. Answer: B

Let the total number of Managers is = x

And the total number of Assistant Managers is = y

Then, according to the question,

$$= \left[\frac{18 \times y}{100} \right] \times \left[\frac{100}{20 \times x} \right] = \frac{81}{100}$$

$$\frac{9y}{10x} = \frac{81}{100}$$

$$\frac{y}{x} = \frac{9}{10}$$

So,

Number of Managers and Assistant Managers = $10a$ and $9a$

So, number of Managers in Bank R = $(23 \times 10a)/100 = 2.3a$

And, number of Assistant Managers in Bank T = $(16 \times 9a)/100 = 1.44a$

So, the required percentage is = $(2.3a - 1.44a)/1.44a \times 100$

= $0.86a/1.44a \times 100 \approx 60\%$ more

20. Answer: E

Let the number of Assistant Managers in Bank Q = $100y$

So, number of Managers in Bank Q = $125y$

Total number of Managers = $(125y/20) \times 100 = 625y$

Total number of Assistant Managers = $(100y/18) \times 100 = 5000y/9$

Then, according to the question,

$$= \frac{5000y}{9 \times 625y} = \frac{x^3}{(x+1)^2}$$

$$= \frac{8}{9} = \frac{x^3}{(x+1)^2}$$

So, the value of x is = 2

21. Answer: D

Total number of Managers and Assistant Managers is = $17,000 \times 2 = 34,000$

Now, let total number of Managers is = x

And the total number of Assistant Managers is = y

Then, according to the question,

= $(16 \times x)/100 - (16 \times y)/100 = 480$

= $16x - 16y = 480 \times 100$

= $x - y = 3000$ (i)

= $x + y = 34,000$ (ii)

= $2x = 37,000$

= $x = 18,500$

And $y = 15,500$

So, the number of Assistant Managers in Bank P is = $15,500 \times 24/100 = 3720$

And the number of Managers in Bank S is = $18,500 \times 15/100 = 2775$

So, the required sum is = $3720 + 2775 = 6495$

22. Answer: E

As we don't have any information regarding the number of Managers and Assistant Managers in any of the given Banks.

So, we cannot find the solution to this question,

{23 – 26}

Solution

Let total orders booked from all cities together = $100a$

Orders booked from R = $36\% \times 100a = 36a$

Ordered booked from S = $36a/1.5 \times 100 = 24a$

Orders booked from city P = 200

so, $(36a - 60\% \times 200) = 1.4 \times \text{order booked from city Q}$

$5/7 \times (36a - 120) = \text{ordered booked from city Q}$

Now,

$5/7 \times (36a - 120) + 200 = 100a - 36a - 24a = 40a$

$36a - 120 + 280 = 56a$

$20a = 160$

Value of $a = 8$

So, total number of orders booked = 800

Orders booked from city P = 200

Orders booked from city Q = $5/7 \times (36 \times 8 - 120) = 120$

Orders booked from city R = $36 \times 8 = 288$

Orders booked from city S = $288 \times 2/3 = 192$

Now,

Orders booked on Ebay from city Q are less than that of city P.

Number of orders booked on E bay from city Q = $1/3 \times 120 = 40$

So, number of orders booked on E bay from city P > 40
 If Y = 2, Z = 3 (not possible, because Z is composite number)
 If Y = 3, Z = 4
 So, ratio of orders booked on E bay and Myntra from city P = 2:4 = 1:2
 So, number of orders booked on E bay from city P = $\frac{1}{3} \times 200 = 66.66$ (not possible)
 If Y = 5, Z = 6
 So, ratio of orders booked on E bay and Myntra from city P = 2:6 = 1:3
 So, number of orders booked on E bay from city P = $\frac{1}{4} \times 200 = 50$ (possible)
 Next possible values of Z = 8,
 So, number of ordered booked on E bay from city P = $\frac{2}{10} \times 200 = 40$ (not possible)
 So, we further increase the value of Z, share of E bay orders from city P will be less than 40, which is not possible.

Now, we can calculate all the possible values

City	Total orders booked	Orders booked on E bay	Orders booked on Myntra
P	200	50	150
Q	120	40	80
R	288	180	108
S	192	64	128
Total	800	334	466

23. Answer: C

According to question,

For city P

Number of orders booked on flip kart = $50 \times 1.5 = 75$

So, number of orders booked on (E bay + Flipkart + Myntra) = $(K + 200)$

$200 + 75 = K + 200$

So, value of K = 75

I. Z and K are co primes

Value of K = 75

Value of Z = 6

HCF of (Z, K) = 3

This statement is false

II. K is five less than number of orders booked on Myntra from city Q.

Number of orders booked on Myntra from city Q = 80

Value of K = 75

Required difference = $80 - 75 = 5$

III. On dividing $(K - Z)$ by 7 remainder is 6

$(75 - 6)/7 = 69/7 = 7 \times 9 + 6$

This statement is true

So, II and III are true

Hence answer is option C

24. Answer: B

For S

Total number of orders booked on E bay = 64

Number of orders not delivered on E bay = $64 \times \frac{1}{4} = 16$

Total number of orders booked on Myntra = 128

Number of orders not delivered on Myntra = $128 \times \frac{1}{8} = 16$

Required sum = $16 + 16 = 32$

Hence answer is option B

25. Answer: A

Required central angle = $15\% \times 360 = 54$

Hence answer is option A

26. Answer: D

For city T

Number of orders booked = $150 + 10 = 160$

Number of orders booked on E bay = $(108 + 128)/2 = 118$

So, number of orders booked on Myntra = $160 - 118 = 42$

Hence answer is option D