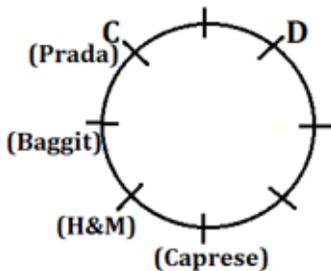


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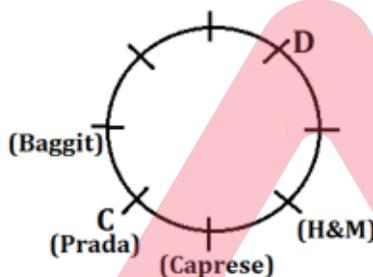
S1. Ans.(a)

Sol. D sits third to the right of the one who likes Caprese. There are only two persons sitting between D and the one who like the Baggit. C likes Prada and sits second to the left of the one who likes H&M. D does not like H&M. D is not an immediate neighbour of C. There are two possibilities-

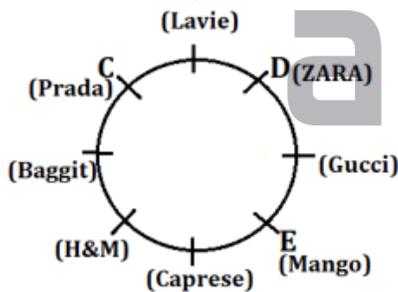
Case-1



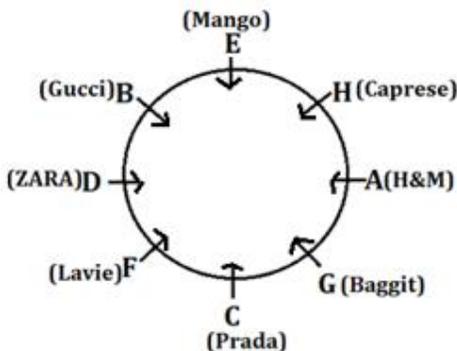
Case-2



The one who likes H&M sits second to the left of E. Here from this condition case-2 will be ruled out. There are only two persons sitting between the persons who like Mango and Lavie. The person who likes the Gucci is not sitting opposite to the one who likes H&M. The person who likes the ZARA is not an immediate neighbour of the one who likes the Mango. Hence D likes ZARA and E likes Mango.



F sits second to the left of G. Only A sits between G and H (when counted left of H). The final arrangement is-



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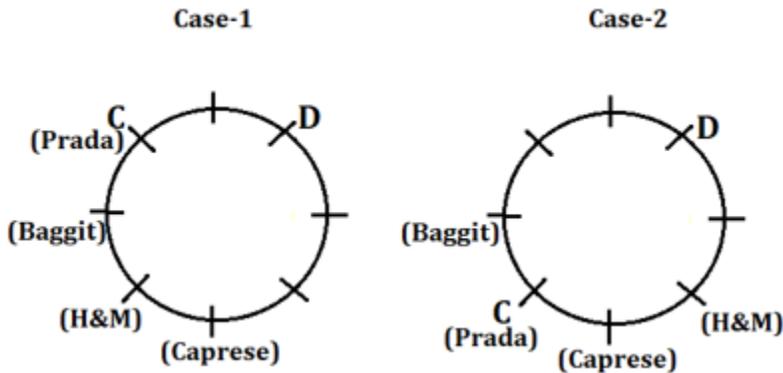
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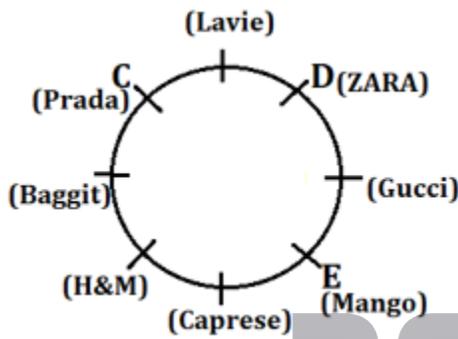
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S2. Ans.(b)

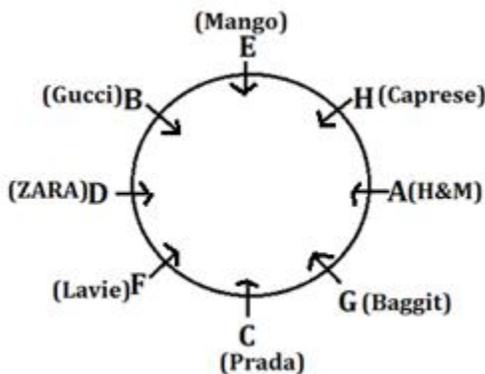
Sol. D sits third to the right of the one who likes Caprese. There are only two persons sitting between D and the one who like the Baggit. C likes Prada and sits second to the left of the one who likes H&M. D does not like H&M. D is not an immediate neighbour of C. There are two possibilities-



The one who likes H&M sits second to the left of E. Here from this condition case-2 will be ruled out. There are only two persons sitting between the persons who like Mango and Lavie. The person who likes the Gucci is not sitting opposite to the one who likes H&M. The person who likes the ZARA is not an immediate neighbour of the one who likes the Mango. Hence D likes ZARA and E likes Mango.



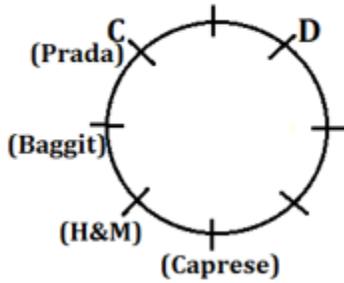
F sits second to the left of G. Only A sits between G and H (when counted left of H). The final arrangement is-



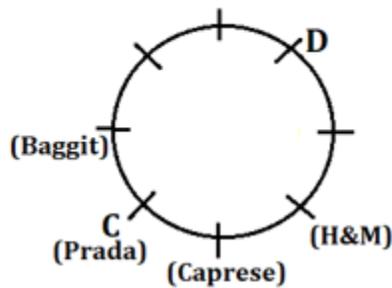
S3. Ans.(c)

Sol. D sits third to the right of the one who likes Caprese. There are only two persons sitting between D and the one who like the Baggit. C likes Prada and sits second to the left of the one who likes H&M. D does not like H&M. D is not an immediate neighbour of C. There are two possibilities-

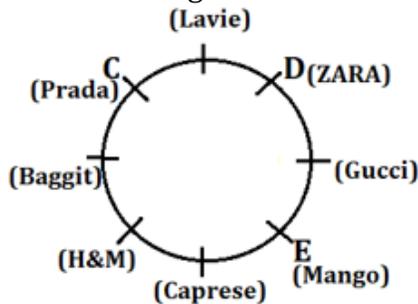
Case-1



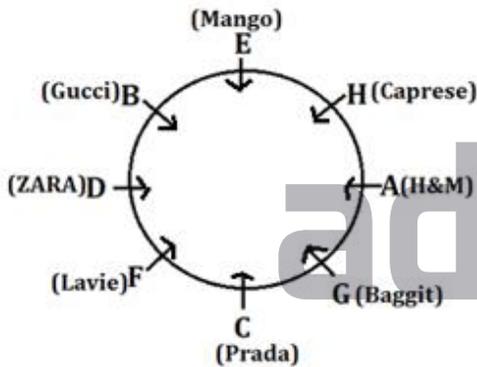
Case-2



The one who likes H&M sits second to the left of E. Here from this condition case-2 will be ruled out. There are only two persons sitting between the persons who like Mango and Lavie. The person who likes the Gucci is not sitting opposite to the one who likes H&M. The person who likes the ZARA is not an immediate neighbour of the one who likes the Mango. Hence D likes ZARA and E likes Mango.



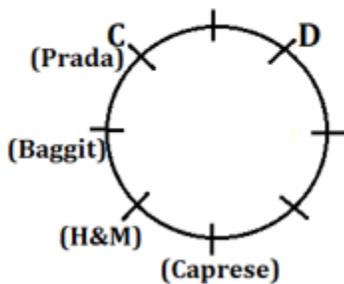
F sits second to the left of G. Only A sits between G and H (when counted left of H). The final arrangement is-



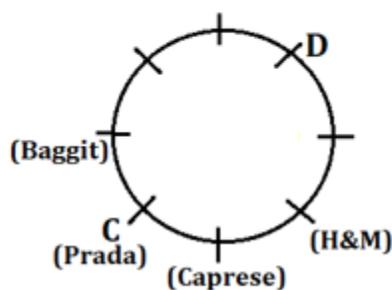
S4. Ans.(d)

Sol. D sits third to the right of the one who likes Caprese. There are only two persons sitting between D and the one who likes the Baggit. C likes Prada and sits second to the left of the one who likes H&M. D does not like H&M. D is not an immediate neighbour of C. There are two possibilities-

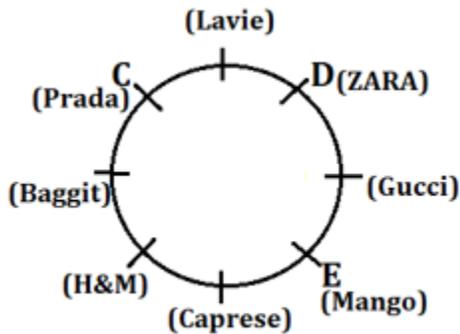
Case-1



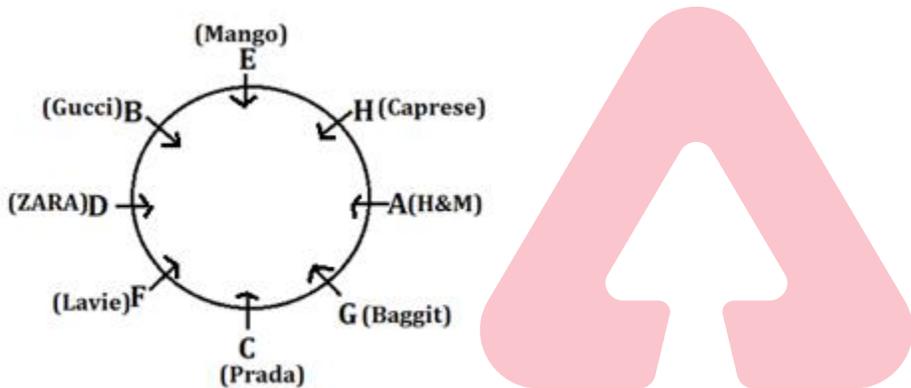
Case-2



The one who likes H&M sits second to the left of E. Here from this condition case-2 will be ruled out. There are only two persons sitting between the persons who like Mango and Lavie. The person who likes the Gucci is not sitting opposite to the one who likes H&M. The person who likes the ZARA is not an immediate neighbour of the one who likes the Mango. Hence D likes ZARA and E likes Mango.



F sits second to the left of G. Only A sits between G and H (when counted left of H). The final arrangement is-

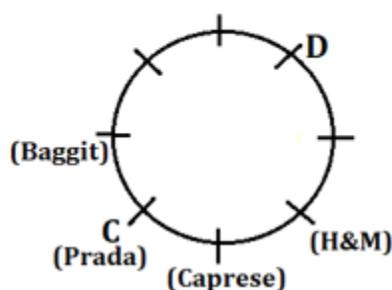
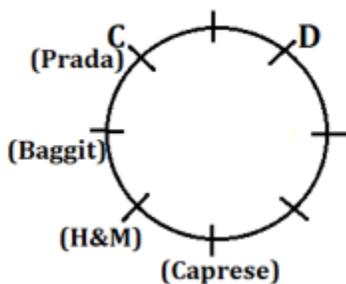


S5. Ans.(e)

Sol. D sits third to the right of the one who likes Caprese. There are only two persons sitting between D and the one who likes the Baggit. C likes Prada and sits second to the left of the one who likes H&M. D does not like H&M. D is not an immediate neighbour of C. There are two possibilities-

Case-1

Case-2



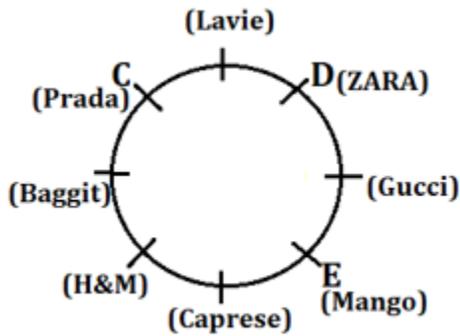
The one who likes H&M sits second to the left of E. Here from this condition case-2 will be ruled out. There are only two persons sitting between the persons who like Mango and Lavie. The person who likes the Gucci is not sitting opposite to the one who likes H&M. The person who likes the ZARA is not an immediate neighbour of the one who likes the Mango. Hence D likes ZARA and E likes Mango.

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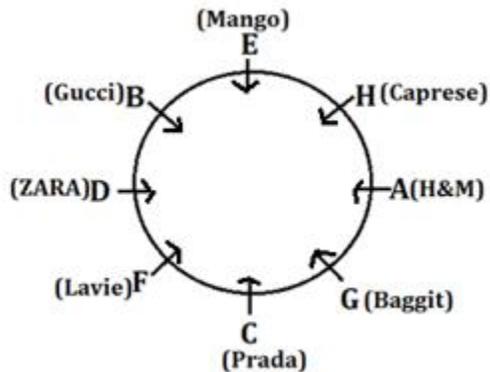


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F sits second to the left of G. Only A sits between G and H (when counted left of H). The final arrangement is-



S6. Ans.(b)

Sol.

- I. $M > R$ (false)
- II. $S > Q$ (true)

S7. Ans.(d)

Sol.

- I. $F \geq E$ (false)
- II. $E < F$ (false)

S8. Ans.(d)

Sol.

- I. $R > N$ (false)
- II. $N < S$ (false)

S9. Ans.(c)

Sol. From the given information Atul's rank is 21 from the top and 20 from the bottom. So, maximum number of students in the class is = $21 + 20 - 1 = 40$.

S10. Ans.(b)

Sol. From the given information, Arun's rank from bottom is 19 and total number of students is 40. Then Arun's rank from the top is = $40 - 19 + 1 = 22$.



adda247

S11. Ans.(d)

Sol. C's age is a perfect square. The difference of age between G and C is a perfect cube. There is only possibility G born in 1964 and C born in 1972. The addition of the age of G and A is a prime number. Hence A was born in 1981.

Year	Age	Persons
1949	72	
1956	65	
1964	57	G
1972	49	C
1981	40	A
1987	34	
1996	25	

The addition of the age of A and F is equal to age of E. Hence E was born in 1956. D is older than E. So, D is the oldest person. The difference of age between B and F is less than 10 year. The final arrangement is-

Year	Age	Persons
1949	72	D
1956	65	E
1964	57	G
1972	49	C
1981	40	A
1987	34	B
1996	25	F

S12. Ans.(a)

Sol. C's age is a perfect square. The difference of age between G and C is a perfect cube. There is only possibility G born in 1964 and C born in 1972. The addition of the age of G and A is a prime number. Hence A was born in 1981.

Year	Age	Persons
1949	72	
1956	65	
1964	57	G
1972	49	C
1981	40	A
1987	34	
1996	25	

The addition of the age of A and F is equal to age of E. Hence E was born in 1956. D is older than E. So, D is the oldest person. The difference of age between B and F is less than 10 year. The final arrangement is-

Year	Age	Persons
1949	72	D
1956	65	E
1964	57	G
1972	49	C
1981	40	A
1987	34	B
1996	25	F

S13. Ans.(c)

Sol. C's age is a perfect square. The difference of age between G and C is a perfect cube. There is only possibility G born in 1964 and C born in 1972. The addition of the age of G and A is a prime number. Hence A was born in 1981.

Year	Age	Persons
1949	72	
1956	65	
1964	57	G
1972	49	C
1981	40	A
1987	34	
1996	25	

The addition of the age of A and F is equal to age of E. Hence E was born in 1956. D is older than E. So, D is the oldest person. The difference of age between B and F is less than 10 year. The final arrangement is-

Year	Age	Persons
1949	72	D
1956	65	E
1964	57	G
1972	49	C
1981	40	A
1987	34	B
1996	25	F

S14. Ans.(b)

Sol. C's age is a perfect square. The difference of age between G and C is a perfect cube. There is only possibility G born in 1964 and C born in 1972. The addition of the age of G and A is a prime number. Hence A was born in 1981.

Year	Age	Persons
1949	72	
1956	65	
1964	57	G
1972	49	C
1981	40	A
1987	34	
1996	25	

The addition of the age of A and F is equal to age of E. Hence E was born in 1956. D is older than E. So, D is the oldest person. The difference of age between B and F is less than 10 year. The final arrangement is-

Year	Age	Persons
1949	72	D
1956	65	E
1964	57	G
1972	49	C
1981	40	A
1987	34	B
1996	25	F

S15. Ans.(d)

Sol. C's age is a perfect square. The difference of age between G and C is a perfect cube. There is only possibility G born in 1964 and C born in 1972. The addition of the age of G and A is a prime number. Hence A was born in 1981.

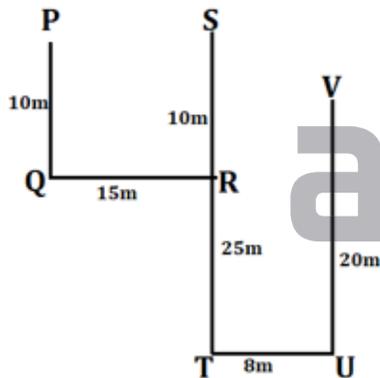
Year	Age	Persons
1949	72	
1956	65	
1964	57	G
1972	49	C
1981	40	A
1987	34	
1996	25	

The addition of the age of A and F is equal to age of E. Hence E was born in 1956. D is older than E. So, D is the oldest person. The difference of age between B and F is less than 10 year. The final arrangement is-

Year	Age	Persons
1949	72	D
1956	65	E
1964	57	G
1972	49	C
1981	40	A
1987	34	B
1996	25	F

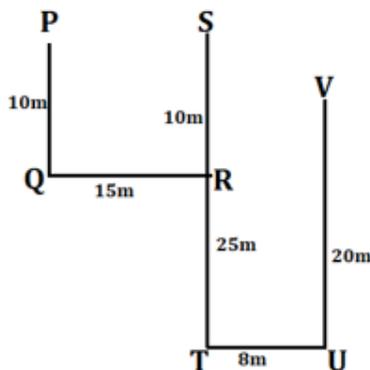
S16. Ans.(d)

Sol.



S17. Ans.(c)

Sol.



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S22. Ans.(b)

Sol. Same number of persons live above and below S. Two persons live between N and S. There are two possibilities. There are four floors between floor of N and R.

	Case-1	Case-2
Floors	Persons	Persons
9		
8		N
7	R	
6		
5	S	S
4		
3		R
2	N	
1		

P does not live on even numbered floor. Only one person lives between P and K. P lives above M and N. There are as many persons between O and Q as between O and L. Q live above L. Case 1 will be ruled out. The final arrangement is-

Floor	Persons
9	P
8	N
7	K
6	Q
5	S
4	O
3	R
2	L
1	M

**S23. Ans.(d)**

Sol. Same number of persons live above and below S. Two persons live between N and S. There are two possibilities. There are four floors between floor of N and R.

	Case-1	Case-2
Floors	Persons	Persons
9		
8		N
7	R	
6		
5	S	S
4		
3		R
2	N	
1		

P does not live on even numbered floor. Only one person lives between P and K. P lives above M and N. There are as many persons between O and Q as between O and L. Q live above L. Case 1 will be ruled out. The final arrangement is-

Floor	Persons
9	P
8	N
7	K
6	Q
5	S
4	O
3	R
2	L
1	M

S24. Ans.(e)

Sol. Same number of persons live above and below S. Two persons live between N and S. There are two possibilities. There are four floors between floor of N and R.

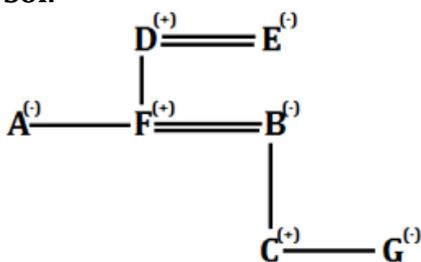
	Case-1	Case-2
Floors	Persons	Persons
9		
8		N
7	R	
6		
5	S	S
4		
3		R
2	N	
1		

P does not live on even numbered floor. Only one person lives between P and K. P lives above M and N. There are as many persons between O and Q as between O and L. Q live above L. Case 1 will be ruled out. The final arrangement is-

Floor	Persons
9	P
8	N
7	K
6	Q
5	S
4	O
3	R
2	L
1	M

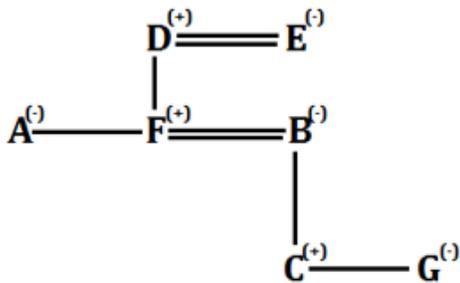
S25. Ans.(d)

Sol.



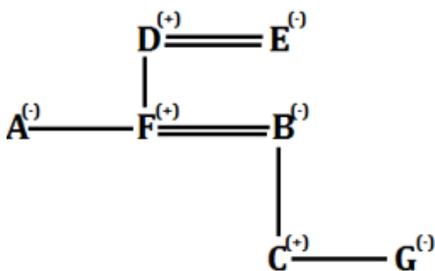
S26. Ans.(a)

Sol.



S27. Ans.(b)

Sol.



S28. Ans.(b)

Sol. Q is senior to R but immediate junior to N. More than three persons are junior to Q. M is COO. There are two possibilities.

	Case-1	Case-2
Designations	Persons	Persons
CMD	N	
MD	Q	N
CEO		Q
COO	M	M
AGM		
AM		
SE		
JE		

T is just senior to O but T is not AM. S is senior to T. Not more than one person is working between S and R. P is junior to R. M is senior to R. From these conditions case-2 will be eliminated and the final arrangement is-

Designations	Persons
CMD	N
MD	Q
CEO	S
COO	M
AGM	R
AM	P
SE	T
JE	O

S29. Ans.(d)

Sol. Q is senior to R but immediate junior to N. More than three persons are junior to Q. M is COO. There are two possibilities.

	Case-1	Case-2
Designations	Persons	Persons
CMD	N	
MD	Q	N
CEO		Q
COO	M	M
AGM		
AM		
SE		
JE		

T is just senior to O but T is not AM. S is senior to T. Not more than one person is working between S and R. P is junior to R. M is senior to R. From these conditions case-2 will be eliminated and the final arrangement is-

Designations	Persons
CMD	N
MD	Q
CEO	S
COO	M
AGM	R
AM	P
SE	T
JE	O

S30. Ans.(c)

Sol. Q is senior to R but immediate junior to N. More than three persons are junior to Q. M is COO. There are two possibilities.

	Case-1	Case-2
Designations	Persons	Persons
CMD	N	
MD	Q	N
CEO		Q
COO	M	M
AGM		
AM		
SE		
JE		

T is just senior to O but T is not AM. S is senior to T. Not more than one person is working between S and R. P is junior to R. M is senior to R. From these conditions case-2 will be eliminated and the final arrangement is-

Designations	Persons
CMD	N
MD	Q
CEO	S
COO	M
AGM	R
AM	P
SE	T
JE	O

S31. Ans.(e)

Sol. Q is senior to R but immediate junior to N. More than three persons are junior to Q. M is COO. There are two possibilities.

	Case-1	Case-2
Designations	Persons	Persons
CMD	N	
MD	Q	N
CEO		Q
COO	M	M
AGM		
AM		
SE		
JE		

T is just senior to O but T is not AM. S is senior to T. Not more than one person is working between S and R. P is junior to R. M is senior to R. From these conditions case-2 will be eliminated and the final arrangement is-

Designations	Persons
CMD	N
MD	Q
CEO	S
COO	M
AGM	R
AM	P
SE	T
JE	O



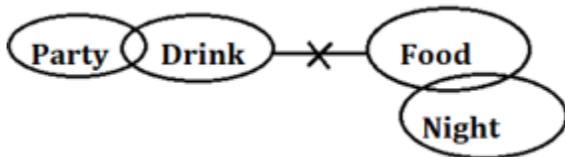
S32. Ans.(a)

Sol.



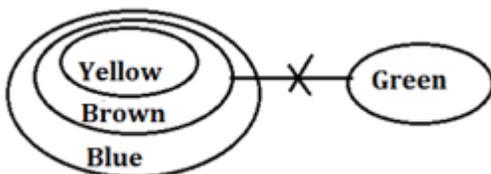
S33. Ans.(a)

Sol.



S34. Ans.(a)

Sol.



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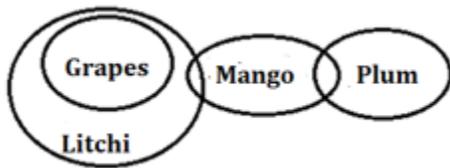
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S35. Ans.(e)

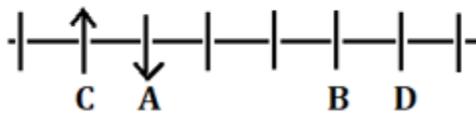
Sol.



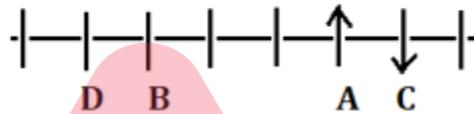
S36. Ans.(d)

Sol. D sits fifth to the right of C, none of them sits at an extreme end. B sits third to the left of A. A is not an immediate neighbor of D. Neither A nor B sits at extreme end. There are two possibilities-

Case-1

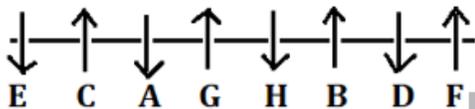


Case-2



G sits third to the right of D. G does not face south direction. A sits second to the left of E. F sits second to the right of B. H sits third to the left of F. Both the person sitting at extreme ends faces opposite direction to each other. H sits immediate left of B and both of them are facing opposite direction to each other. Not more than two persons sitting together face same direction.

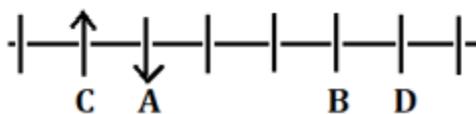
From this condition case-2 will be eliminated and the final arrangement is-



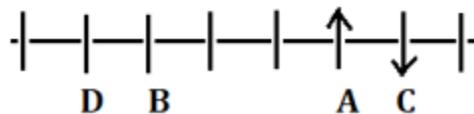
S37. Ans.(a)

Sol. D sits fifth to the right of C, none of them sits at an extreme end. B sits third to the left of A. A is not an immediate neighbor of D. Neither A nor B sits at extreme end. There are two possibilities-

Case-1

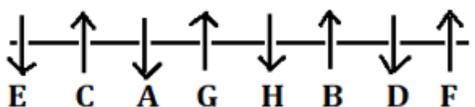


Case-2



G sits third to the right of D. G does not face south direction. A sits second to the left of E. F sits second to the right of B. H sits third to the left of F. Both the person sitting at extreme ends faces opposite direction to each other. H sits immediate left of B and both of them are facing opposite direction to each other. Not more than two persons sitting together face same direction.

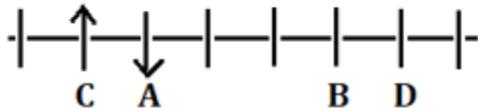
From this condition case-2 will be eliminated and the final arrangement is-



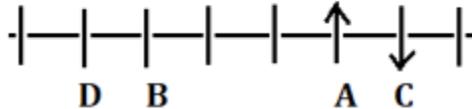
S38. Ans.(b)

Sol. D sits fifth to the right of C, none of them sits at an extreme end. B sits third to the left of A. A is not an immediate neighbor of D. Neither A nor B sits at extreme end. There are two possibilities-

Case-1

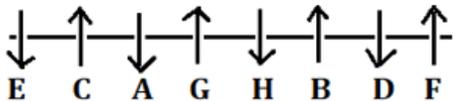


Case-2



G sits third to the right of D. G does not face south direction. A sits second to the left of E. F sits second to the right of B. H sits third to the left of F. Both the person sitting at extreme ends faces opposite direction to each other. H sits immediate left of B and both of them are facing opposite direction to each other. Not more than two persons sitting together face same direction.

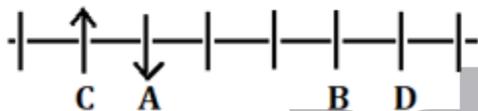
From this condition case-2 will be eliminated and the final arrangement is-



S39. Ans.(d)

Sol. D sits fifth to the right of C, none of them sits at an extreme end. B sits third to the left of A. A is not an immediate neighbor of D. Neither A nor B sits at extreme end. There are two possibilities-

Case-1

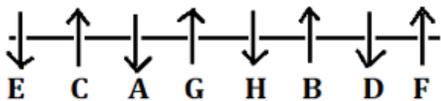


Case-2



G sits third to the right of D. G does not face south direction. A sits second to the left of E. F sits second to the right of B. H sits third to the left of F. Both the person sitting at extreme ends faces opposite direction to each other. H sits immediate left of B and both of them are facing opposite direction to each other. Not more than two persons sitting together face same direction.

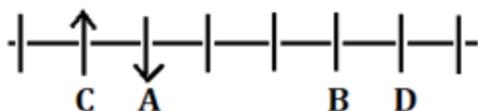
From this condition case-2 will be eliminated and the final arrangement is-



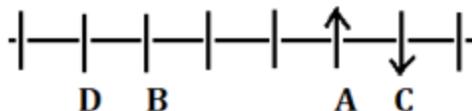
S40. Ans.(e)

Sol. D sits fifth to the right of C, none of them sits at an extreme end. B sits third to the left of A. A is not an immediate neighbor of D. Neither A nor B sits at extreme end. There are two possibilities-

Case-1

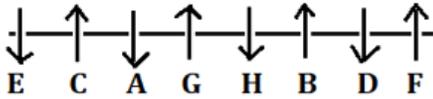


Case-2



G sits third to the right of D. G does not face south direction. A sits second to the left of E. F sits second to the right of B. H sits third to the left of F. Both the person sitting at extreme ends faces opposite direction to each other. H sits immediate left of B and both of them are facing opposite direction to each other. Not more than two persons sitting together face same direction.

From this condition case-2 will be eliminated and the final arrangement is-



S41. Ans.(a)

Sol.

Let total employee in C = 25x

So, total employee in A = $25x \times \frac{108}{100} = 27x$

And total employee in B = $27x \times \frac{2}{3} = 18x$

So, ratio of total employee in A, B and C respectively = 27 : 18 : 25

Total employee in A = $700 \times \frac{27}{70} = 270$

Total employee in B = $700 \times \frac{18}{70} = 180$

Total employee in C = $700 \times \frac{25}{70} = 250$

Let total male employee in A and B be 10n and 7n respectively

And let total female employee in B = 5m

So, total female employee in A = $5m \times \frac{160}{100} = 8m$

ATQ –

$10n + 8m = 270$ ----- (i)

also, $7n + 5m = 180$ ----- (ii)

From (i) and (ii) we get -----

$n = 15, m = 15$

Total male employee in C = $7 \times 15 \times \left(100 + \frac{300}{7}\right) \times \frac{1}{100} = 150$

	A	B	C
Male employee	150	105	150
Female employee	120	75	100

Required percentage = $\frac{150 - 100}{100} \times 100 = 50\%$

S42. Ans.(b)

Sol.

Let total employee in C = 25x

So, total employee in A = $25x \times \frac{108}{100} = 27x$

And total employee in B = $27x \times \frac{2}{3} = 18x$

So, ratio of total employee in A, B and C respectively = 27 : 18 : 25

Total employee in A = $700 \times \frac{27}{70} = 270$

Total employee in B = $700 \times \frac{18}{70} = 180$

Total employee in C = $700 \times \frac{25}{70} = 250$

Let total male employee in A and B be $10n$ and $7n$ respectively

And let total female employee in B = $5m$

So, total female employee in A = $5m \times \frac{160}{100} = 8m$

ATQ –

$10n + 8m = 270$ ----- (i)

also, $7n + 5m = 180$ ----- (ii)

From (i) and (ii) we get -----

$n = 15, m = 15$

Total male employee in C = $7 \times 15 \times \left(100 + \frac{300}{7}\right) \times \frac{1}{100} = 150$

	A	B	C
Male employee	150	105	150
Female employee	120	75	100

Required average = $\frac{120+100}{2} = 110$

S43. Ans.(a)

Sol.

Let total employee in C = $25x$

So, total employee in A = $25x \times \frac{108}{100} = 27x$

And total employee in B = $27x \times \frac{2}{3} = 18x$

So, ratio of total employee in A, B and C respectively = $27 : 18 : 25$

Total employee in A = $700 \times \frac{27}{70} = 270$

Total employee in B = $700 \times \frac{18}{70} = 180$

Total employee in C = $700 \times \frac{25}{70} = 250$

Let total male employee in A and B be $10n$ and $7n$ respectively

And let total female employee in B = $5m$

So, total female employee in A = $5m \times \frac{160}{100} = 8m$

ATQ –

$10n + 8m = 270$ ----- (i)

also, $7n + 5m = 180$ ----- (ii)

From (i) and (ii) we get -----

$n = 15, m = 15$

Total male employee in C = $7 \times 15 \times \left(100 + \frac{300}{7}\right) \times \frac{1}{100} = 150$

	A	B	C
Male employee	150	105	150
Female employee	120	75	100

Required sum = $(150 + 105 + 150) = 405$

S44. Ans.(e)**Sol.**

Let total employee in C = 25x

So, total employee in A = $25x \times \frac{108}{100} = 27x$ And total employee in B = $27x \times \frac{2}{3} = 18x$

So, ratio of total employee in A, B and C respectively = 27 : 18 : 25

Total employee in A = $700 \times \frac{27}{70} = 270$ Total employee in B = $700 \times \frac{18}{70} = 180$ Total employee in C = $700 \times \frac{25}{70} = 250$

Let total male employee in A and B be 10n and 7n respectively

And let total female employee in B = 5m

So, total female employee in A = $5m \times \frac{160}{100} = 8m$

ATQ –

$$10n + 8m = 270 \text{ ----- (i)}$$

$$\text{also, } 7n + 5m = 180 \text{ ----- (ii)}$$

From (i) and (ii) we get -----

$$n = 15, m = 15$$

$$\text{Total male employee in C} = 7 \times 15 \times \left(100 + \frac{300}{7}\right) \times \frac{1}{100} = 150$$

	A	B	C
Male employee	150	105	150
Female employee	120	75	100

$$\text{Required ratio} = \frac{105}{120} = 7 : 8$$

S45. Ans.(c)**Sol.**

Let total employee in C = 25x

So, total employee in A = $25x \times \frac{108}{100} = 27x$ And total employee in B = $27x \times \frac{2}{3} = 18x$

So, ratio of total employee in A, B and C respectively = 27 : 18 : 25

Total employee in A = $700 \times \frac{27}{70} = 270$ Total employee in B = $700 \times \frac{18}{70} = 180$ Total employee in C = $700 \times \frac{25}{70} = 250$

Let total male employee in A and B be 10n and 7n respectively

And let total female employee in B = 5m

So, total female employee in A = $5m \times \frac{160}{100} = 8m$

ATQ –

$$10n + 8m = 270 \text{ ----- (i)}$$

$$\text{also, } 7n + 5m = 180 \text{----- (ii)}$$

From (i) and (ii) we get -----

$$n = 15, m = 15$$

$$\text{Total male employee in C} = 7 \times 15 \times \left(100 + \frac{300}{7}\right) \times \frac{1}{100} = 150$$

	A	B	C
Male employee	150	105	150
Female employee	120	75	100

Required difference

$$= (150 + 105 + 150) - (120 + 75 + 100) = 110$$

S46. Ans.(e)

Sol.

$$25\% \text{ of } 1460 - ?\% \text{ of } 1120 \approx 29$$

$$\frac{25}{100} \times 1460 - \frac{?}{100} \times 1120 \approx 29$$

$$\frac{112}{10} \times ? \approx 365 - 29$$

$$? \approx \frac{3360}{112}$$

$$? \approx 30$$



S47. Ans.(a)

Sol.

$$24 + 14 - 2 \approx ?^2$$

$$?^2 \approx 36$$

$$? \approx 6$$



S48. Ans.(d)

Sol.

$$11\% \text{ of } 11\% \text{ of } 11000 \approx ?$$

$$\frac{11}{100} \times \frac{11}{100} \times 11000 \approx ?$$

$$? \approx \frac{1331}{10}$$

$$? \approx 133$$

S49. Ans.(a)

Sol.

$$21 \times \frac{1}{12} \times 16 \times \frac{1}{7} \approx ?$$

$$? \approx 4$$

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S50. Ans.(c)

Sol.

$$120 \div 15 \times 4 \approx ?$$

$$? \approx 8 \times 4$$

$$? \approx 32$$

S51. Ans.(b)

Sol.

Wrong number = 312

Pattern of series -

<u>124</u>	180,	225,	261,	290,	314,	335
+56	+45	+36	+29	+24	+21	
-11	-9	-7	-5	-3		

So, 314 should be come in the place of 312.

S52. Ans.(d)

Sol.

Wrong number = 187.5

Pattern of series -

$$91 + 144 = 235$$

$$235 - 72 = 163$$

$$163 + 36 = 199$$

$$199 - 18 = 181$$

$$181 + 9 = 190$$

$$190 - 4.5 = 185.5$$

So, 185.5 should be come in the place of 187.5

S53. Ans.(d)

Sol.

Pattern of series -

<u>380</u>	385,	393,	407,	433,	483,	581
+5	+8	+14	+26	+50	+98	
+3	+6	+12	+24	+48		

So, 483 should be come in the place of 486

S54. Ans.(a)

Sol.

Wrong number = 32

Pattern of series -

$$128 \times 0.5 = 64$$

$$64 \times 1.5 = 96$$

$$96 \times 2.5 = 240$$

$$240 \times 3.5 = 840$$

$$840 \times 4.5 = 3780$$

$$3780 \times 5.5 = 20790$$

So, 64 should be come in the place of 32.

S55. Ans.(c)

Sol.

Wrong number = 581

Pattern of series -

$$665 - (6^2 - 1) = 630$$

$$630 - (5^2 - 1) = 606$$

$$606 - (4^2 - 1) = 591$$

$$591 - (3^2 - 1) = 583$$

$$583 - (2^2 - 1) = 580$$

$$580 - (1^2 - 1) = 580$$

So, 583 should be in the place of 581

S56. Ans.(d)

Sol.

Let the length of train B be $100x$ meters.

So, length of train A = $100x \times \frac{5}{4} = 125x$ meters

ATQ -

$$\frac{125x}{12} = 90 \times \frac{5}{18}$$

$$x = 2.4$$

So, length of train B = 240 meters

And, length of train A = 300 meters

Let speed of train B = L m/sec

$$\text{Now, the speed of train B} = \frac{240+300}{25-1} = 36$$

$$= 10 \text{ m/sec}$$

$$\text{Required time} = \frac{240+400}{10} = 64 \text{ seconds}$$

S57. Ans.(c)

Sol.

ATQ

$$P : Q = 2 : 3$$

$$P : R = 5 : 7$$

$$\Rightarrow Q : P : R = 15 : 10 : 14$$

Let profit earned by Q be $15x$, by P be $10x$ and by R be $14x$.

ATQ,

$$4x = 76$$

$$x = 19$$

Profit earned by Q = $15x = 15 \times 19 = \text{Rs } 285$

S58. Ans.(d)**Sol.**

ATQ,

$$\text{Rita : Kapil} = 3 : 4$$

$$\text{And, Rita : Manish} = 3 : 5$$

$$\text{And, Manish : Rita : Kapil} = 5 : 3 : 4$$

Let Rita's present age be $3x$, Kapil's present age be $4x$ and Manish present age be $5x$.

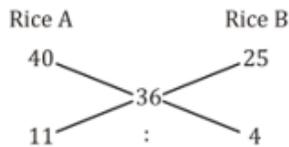
After 10 years, ratio of their ages,

$$\Rightarrow 5x+10 : 3x+10 : 4x+10 = 15 : 11 : 13.$$

$$\Rightarrow x = 4$$

So, Rita's present age = $3x = 12$ years.

5 years ago, Rita's age was = $(12 - 5) = 7$ years.

S59. Ans.(d)**Sol.**

Quantity(Rice A) : Quantity (Rice B)

$$\text{Required ratio} = \frac{11}{15}$$

S60. Ans.(d)**Sol.**

ATQ,

$$\text{Amount invested in scheme B} = P \left[1 + \frac{20}{100} \right]^2 = \frac{36P}{25}$$

Also,

$$\text{Simple interest gets from scheme B} = \frac{36P \times 25 \times 4}{25 \times 100} = \frac{36P}{25}$$

Now,

$$\frac{36P}{25} - P = 1650$$

$$\frac{11P}{25} = 1650$$

$$P \Rightarrow 150 \times 25$$

$$P = \text{Rs } 3750$$

S61. Ans.(b)**Sol.**

$$\text{I. } 2x^2 - 5x - 7 = 0$$

$$\Rightarrow 2x^2 - 7x + 2x - 7 = 0$$

$$\Rightarrow x(2x - 7) + 1(2x - 7) = 0$$

$$\Rightarrow (2x - 7)(x + 1) = 0$$

$$\Rightarrow x = 3.5, -1$$

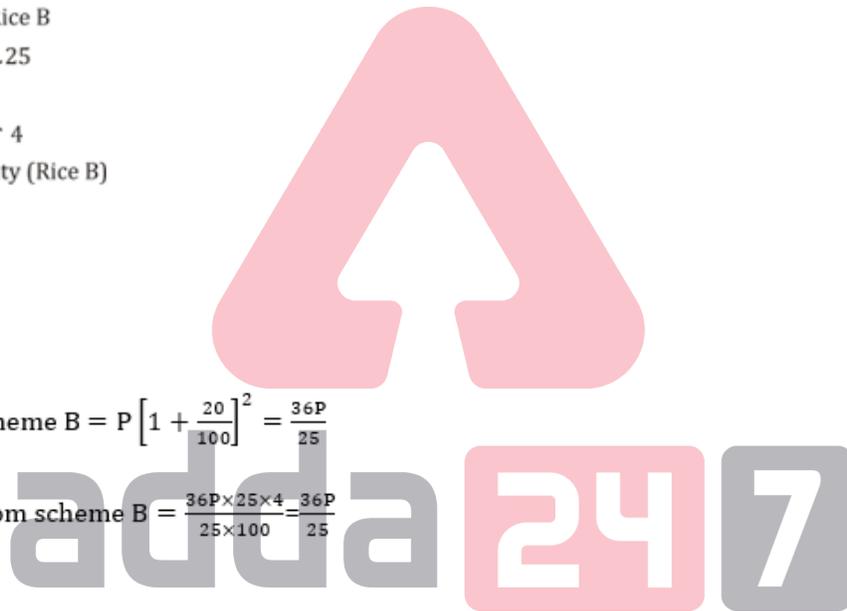
$$\text{II. } 2y^2 - 16y + 32 = 0$$

$$2y^2 - 8y - 8y + 32 = 0$$

$$\Rightarrow 2y(y - 4) - 8(y - 4) = 0$$

$$\Rightarrow y = 4$$

$$\Rightarrow y > x$$



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S62. Ans.(a)**Sol.**

$$\begin{aligned} \text{I. } 2x^2 - 9x + 10 &= 0 \\ \Rightarrow 2x^2 - 4x - 5x + 10 &= 0 \\ \Rightarrow (2x - 5)(x - 2) &= 0 \\ \Rightarrow x &= 2.5, 2 \\ \text{II. } 3y^2 - 7y + 4 &= 0 \\ \Rightarrow 3y^2 - 3y - 4y + 4 &= 0 \\ \Rightarrow (3y - 4)(y - 1) &= 0 \\ \Rightarrow y &= \frac{4}{3}, 1 \\ x &> y \end{aligned}$$

S63. Ans.(b)**Sol.**

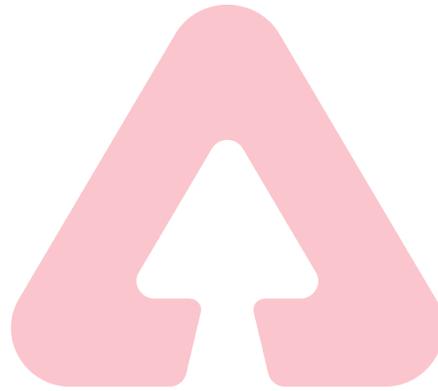
$$\begin{aligned} \text{I. } x^2 + 11x + 24 &= 0 \\ \Rightarrow x^2 + 8x + 3x + 24 &= 0 \\ \Rightarrow (x + 8)(x + 3) &= 0 \\ \Rightarrow x &= -8, -3 \\ \text{II. } 4y^2 + 13y + 10 &= 0 \\ \Rightarrow 4y^2 + 8y + 5y + 10 &= 0 \\ \Rightarrow (y + 2)(4y + 5) &= 0 \\ \Rightarrow y &= -2, -\frac{5}{4} \\ x &< y \end{aligned}$$

S64. Ans.(d)**Sol.**

$$\begin{aligned} \text{I. } 2x^2 + 13x + 21 &= 0 \\ \Rightarrow 2x^2 + 7x + 6x + 21 &= 0 \\ \Rightarrow x(2x + 7) + 3(2x + 7) &= 0 \\ \Rightarrow (x + 3)(2x + 7) &= 0 \\ \Rightarrow x &= -3, -\frac{7}{2} \\ \text{II. } y^2 + 6y + 9 &= 0 \\ \Rightarrow y^2 + 3y + 3y + 9 &= 0 \\ \Rightarrow y(y + 3) + 3(y + 3) &= 0 \\ \Rightarrow (y + 3)(y + 3) &= 0 \\ \Rightarrow y &= -3 \\ \therefore y &\geq x \end{aligned}$$

S65. Ans.(e)**Sol.**

$$\begin{aligned} \text{I. } 3x^2 - x - 2 &= 0 \\ 3x^2 - 3x + 2x - 2 &= 0 \\ \Rightarrow (x - 1)(3x + 2) &= 0 \\ \Rightarrow x &= 1, -\frac{2}{3} \\ \text{II. } 4y^2 - 2y - 2 &= 0 \\ \Rightarrow 4y^2 - 4y + 2y - 2 &= 0 \\ \Rightarrow (y - 1)(4y + 2) &= 0 \\ \Rightarrow y &= 1, -\frac{1}{2} \\ \text{No relation} \end{aligned}$$



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S66. Ans.(a)

Sol.

Total number of females visit P and Q

$$= 2400 \times \frac{(100-40)}{100} + 2000 \times \frac{(100-45)}{100} = 2540$$

Total number of children visit R and S

$$= 4500 \times \frac{15}{100} + 6000 \times \frac{20}{100} = 1875$$

Required ratio = 2540 : 1875 = 508 : 375

S67. Ans.(c)

Sol.

$$\begin{aligned} \text{Req. average} &= \frac{6000 \times \frac{45}{100} + 2400 \times \frac{80}{100}}{2} \\ &= \frac{2700 + 720}{2} = 1710 \end{aligned}$$

S68. Ans.(e)

Sol.

$$\text{Total number of females visit S} = 6000 \times \frac{(100-65)}{100} = 2100$$

$$\text{Total number male visit Q} = 2000 \times \frac{40}{100} = 800$$

$$\text{Required \%} = \frac{2100}{800} \times 100 = 262.5\%$$

S69. Ans.(c)

Sol.

Total number of children visit P and S

$$\begin{aligned} &= 2400 \times \frac{10}{100} + 6000 \times \frac{20}{100} \\ &= 240 + 1200 = 1440 \end{aligned}$$

Total number female visits Q and R

$$\begin{aligned} &= 2000 \times \frac{(100-45)}{100} + 4500 \times \frac{(100-65)}{100} \\ &= 1100 + 1575 = 2675 \end{aligned}$$

Required difference = 2675 - 1440 = 1235

S70. Ans.(b)

Sol.

Req. sum

$$\begin{aligned} &= 4500 \times \frac{(100-65)}{100} + 2000 \times \frac{(100-45)}{100} + 6000 \times \frac{(100-65)}{100} \\ &= 1575 + 1100 + 2100 = 4775 \end{aligned}$$

S71. Ans.(d)

Sol.

In the mixture

$$\text{Milk : water} = 150 : (30+y)$$

According to question

$$\text{Quantity of Milk} = 150 - \frac{150}{y+180} \times 35 + 35 = 160$$

$$y = 30\text{ltr}$$

S72. Ans.(b)**Sol.**Let speed of fan is $100x$ revolutions per min.

So,

Overall change of speed with successive rates

$$= 100x \times \frac{90}{100} \times \frac{85}{100} = 76.5\%.$$

Overall change of speed with new successive rates

$$100x \times \frac{80}{100} \times \left(1 - \frac{z}{100}\right) = 76.5x$$

$$y = 4.375\%$$

S73. Ans.(e)**Sol.**Let marked price and selling price of the article be $50x$ and $41x$ respectively and profit earned is Rs. y .

Discount = $y + 4$

ATQ,

$$y + 4 = 50x - 41x$$

$$9x = y + 4$$

$$y = 9x - 4$$

$$CP = 41x - (9x - 4)$$

$$100 = 32x + 4$$

$$x = 3$$

$$\text{Discount offered} = 9 \times 3 = 27$$

S74. Ans.(e)**Sol.**∵ a, b, c and d are four consecutive numbers and $a + c = 124$

$$\therefore a + c = 124 = 61 + 63$$

$$\therefore b = 62 \text{ and } d = 64$$

$$\therefore b \times d = 62 \times 64 = 3968$$

S75. Ans.(a)**Sol.**

Side of square

$$= \frac{\text{Diagonal}}{\sqrt{2}} = \frac{9\sqrt{2}}{\sqrt{2}}$$

$$= 9 \text{ meter}$$

$$\therefore \text{height of triangle} = 4 \times 9 = 36 \text{ meter}$$

Again, side of second square

$$= \sqrt{784} = 28 \text{ metre}$$

$$\therefore \text{base of triangle} = 28 \text{ meter}$$

∴ Area of triangle

$$= \frac{1}{2} \times \text{Base} \times \text{height}$$

$$= \frac{1}{2} \times 28 \times 36 = 504 \text{ sq. metre.}$$

S76. Ans.(b)

Sol.

$$\text{required answer} = (500+400+450) - (300 + 250 + 200) = 600$$

S77. Ans.(d)

Sol.

$$\text{required \%} = \frac{100}{200} \times 100 = 50\%$$

S78. Ans.(a)

Sol.

$$\text{required ratio} = 400: (450 - 200) = 8 : 5$$

S79. Ans.(e)

Sol.

total patients who have visited on Friday = 600

Total patients referred on Friday = 120

Required difference = 250 - 120 = 130

S80. Ans.(c)

Sol.

$$\% \text{ of referred on Monday} = \frac{300}{500} \times 100 = 60\%$$

$$\% \text{ of referred on Tuesday} = \frac{250}{400} \times 100 = 62.5\%$$

$$\% \text{ of referred on Wednesday} = \frac{200}{450} \times 100 = 44.44\%$$

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