All India Maha Mock: IBPS RRB PO Prelims 2021 (Solutions)

S1. Ans.(b)

Sol. From the given statements, More than three persons were born before Karn. Number of persons born between Bhim and Karn is same as number of persons born between Krishna and Bhim. Krishna was born after Karn . So we have two possible cases i.e. case-1 and case-2:

Months	Case-1	Case-2
March		
April		
May		
July		
August	Karn	
September	Bhim	Karn
November	Krishna	Bhim
December		Krishna

Only three persons were born between Krishna and Arjun . Nakul was born just after Sahdev. Abhimanyu was born after Arjun and before Balram. So case-2 is eliminated. Hence the final arrangement is:

Months	Persons
March	Sahdev
April	Nakul
May	Arjun
July	Abhimanyu
August	Karn
September	Bhim
November	Krishna
December	Balram

S2. Ans.(d)

Sol. From the given statements, More than three persons were born before Karn. Number of persons born between Bhim and Karn is same as number of persons born between Krishna and Bhim. Krishna was born after Karn . So we have two possible cases i.e. case-1 and case-2:

Months	Case-1	Case-2
March		
April		
May		
July		
August	Karn	
September	Bhim	Karn
November	Krishna	Bhim
December		Krishna

Only three persons were born between Krishna and Arjun . Nakul was born just after Sahdev. Abhimanyu was born after Arjun and before Balram. So case-2 is eliminated. Hence the final arrangement is:

Months	Persons
March	Sahdev
April	Nakul
May	Arjun
July	Abhimanyu
August	Karn
September	Bhim
November	Krishna
December	Balram

S3. Ans.(b)

Sol. From the given statements, More than three persons were born before Karn. Number of persons born between Bhim and Karn is same as number of persons born between Krishna and Bhim. Krishna was born after Karn . So we have two possible cases i.e. case-1 and case-2:

Months	Case-1	Case-2
March		
April		
May		
July		
August	Karn	
September	Bhim	Karn
November	Krishna	Bhim
December		Krishna

Only three persons were born between Krishna and Arjun . Nakul was born just after Sahdev. Abhimanyu was born after Arjun and before Balram. So case-2 is eliminated. Hence the final arrangement is:

Months	Persons
March	Sahdev
April	Nakul
May	Arjun
July	Abhimanyu
August	Karn
September	Bhim
November	Krishna
December	Balram

S4. Ans.(e)

Sol. From the given statements, More than three persons were born before Karn. Number of persons born between Bhim and Karn is same as number of persons born between Krishna and Bhim. Krishna was born after Karn . So we have two possible cases i.e. case-1 and case-2:

Months	Case-1	Case-2
March		
April		
May		
July		
August	Karn	
September	Bhim	Karn
November	Krishna	Bhim
December		Krishna

Only three persons were born between Krishna and Arjun . Nakul was born just after Sahdev. Abhimanyu was born after Arjun and before Balram. So case-2 is eliminated. Hence the final arrangement is:

Months	Persons
March	Sahdev
April	Nakul
May	Arjun
July	Abhimanyu
August	Karn
September	Bhim
November	Krishna
December	Balram

S5. Ans.(a)

Sol. From the given statements, More than three persons were born before Karn. Number of persons born between Bhim and Karn is same as number of persons born between Krishna and Bhim. Krishna was born after Karn . So we have two possible cases i.e. case-1 and case-2:

Months	Case-1	Case-2
March		
April		
May		
July		
August	Karn	
September	Bhim	Karn
November	Krishna	Bhim
December		Krishna

Only three persons were born between Krishna and Arjun . Nakul was born just after Sahdev. Abhimanyu was born after Arjun and before Balram. So case-2 is eliminated. Hence the final arrangement is:

Months	Persons
March	Sahdev
April	Nakul
May	Arjun
July	Abhimanyu
August	Karn
September	Bhim
November	Krishna
December	Balram

S6. Ans.(e)

Sol. From both I and II we get that Q is the second tallest persons

U > Q > S > R > V > W/P > W/P

S7. Ans.(d)

Sol. From both I and II we cannot get who sits immediate left of G.

S8. Ans.(c)

Sol. From either I or II we get that code for land is 'wa'

Words	Codes
Land	Wa
Trouble	lo/er
Economy	lo/er
India	Uy
Network	oh/ki
Power	oh/ki
Price	Eq

S9. Ans.(a)

Sol. From the given statements, Q belongs to the zone which has highest number of cases means Q belongs to red zone. Not less than three persons belong to a particular zone means each zone has three persons. P and T belong to the same zone. P does not belong to green zone. R and V belong to the same zone but not red zone. U and X belongs to the same zone but not orange zone so we have two possible cases i.e. case-1 and case-2:

Case-1			Case-2		
Red zone	Orange zone	Green zone	Red zone	Orange zone	Green zone
P	R	U	U	P	R
T	V	X	X	T	V
Q			Q		

W does not belong to the same zone as X and P. S does not belong to the same zone as R and T so case-2 is eliminated. Hence the final arrangement is:

Red zone	Orange zone	Green zone
P	R	U
T	V	X
Q	W	S

S10. Ans.(d)

Sol. From the given statements, Q belongs to the zone which has highest number of cases means Q belongs to red zone. Not less than three persons belong to a particular zone means each zone has three persons. P and T belong to the same zone. P does not belong to green zone. R and V belong to the same zone but not red zone. U and X belongs to the same zone but not orange zone so we have two possible cases i.e. case-1 and case-2:

Case-1			Case-2		
Red zone	Orange zone	Green zone	Red zone	Orange zone	Green zone
P	R	U	U	P	R
T	V	X	X	T	V
Q			Q		

W does not belong to the same zone as X and P. S does not belong to the same zone as R and T so case-2 is eliminated. Hence the final arrangement is:

Red zone	Orange zone	Green zone
P	R	U
T	V	X
Q	W	S

S11. Ans.(e)

Sol. From the given statements, Q belongs to the zone which has highest number of cases means Q belongs to red zone. Not less than three persons belong to a particular zone means each zone has three persons. P and T belong to the same zone. P does not belong to green zone. R and V belong to the same zone but not red zone. U and X belongs to the same zone but not orange zone so we have two possible cases i.e. case-1 and case-2:

Case-1			Case-2		
Red zone	**Orange zone**	**Green zone**	**Red zone**	**Orange zone**	**Green zone**
P	R	U	U	P	R
T	V	X	X	T	V
Q			Q		

W does not belong to the same zone as X and P. S does not belong to the same zone as R and T so case-2 is eliminated. Hence the final arrangement is:

Red zone	Orange zone	Green zone
P	R	U
T	V	X
Q	W	S

S12. Ans.(d)

Sol. From the given statements, Q belongs to the zone which has highest number of cases means Q belongs to red zone. Not less than three persons belong to a particular zone means each zone has three persons. P and T belong to the same zone. P does not belong to green zone. R and V belong to the same zone but not red zone. U and X belongs to the same zone but not orange zone so we have two possible cases i.e. case-1 and case-2:

Case-1			Case-2		
Red zone	**Orange zone**	**Green zone**	**Red zone**	**Orange zone**	**Green zone**
P	R	U	U	P	R
T	V	X	X	T	V
Q			Q		

W does not belong to the same zone as X and P. S does not belong to the same zone as R and T so case-2 is eliminated. Hence the final arrangement is:

Red zone	Orange zone	Green zone
P	R	U
T	V	X
Q	W	S

S13. Ans.(b)

Sol. From the given statements, Q belongs to the zone which has highest number of cases means Q belongs to red zone. Not less than three persons belong to a particular zone means each zone has three persons. P and T belong to the same zone. P does not belong to green zone. R and V belong to the same zone but not red zone. U and X belongs to the same zone but not orange zone so we have two possible cases i.e. case-1 and case-2:

Case-1			Case-2		
Red zone	**Orange zone**	**Green zone**	**Red zone**	**Orange zone**	**Green zone**
P	R	U	U	P	R
T	V	X	X	T	V
Q			Q		

W does not belong to the same zone as X and P. S does not belong to the same zone as R and T so case-2 is eliminated. Hence the final arrangement is:

Red zone	Orange zone	Green zone
P	R	U
T	V	X
Q	W	S

S14. Ans.(b)
Sol. O B J E C T I V E
P A I F B S J U F
F is repeated.

S15. Ans.(a)
Sol. TOY SAT PLY FUN DIM XEN
OTY AST LPY FNU DIM ENX
DIM remains the same

S16. Ans.(b)
Sol. Vowels between **M and P is 'O'**

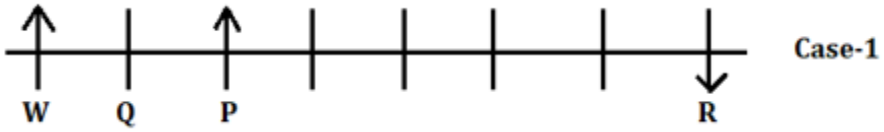
S17. Ans.(b)
Sol. DIM FUN PLY SAT TOY XEN

S18. Ans.(d)
Sol. YOT TAS YLP NUF MID NEX
NUF, MID, NEX start with a letter that comes before R i.e. N and M.

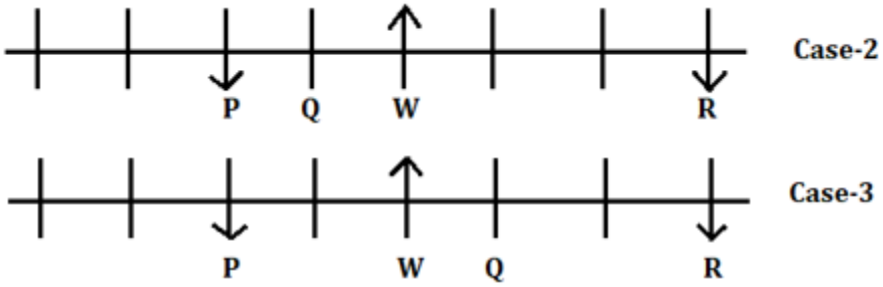
S19. Ans.(d)
Sol. consonants between **T and Y are 'V, W, X' i.e. three**

S20. Ans.(b)
Sol. 7 6 5 3 9 8 6 2 6
6 7 4 2 8 9 7 3 7
7 is repeated.

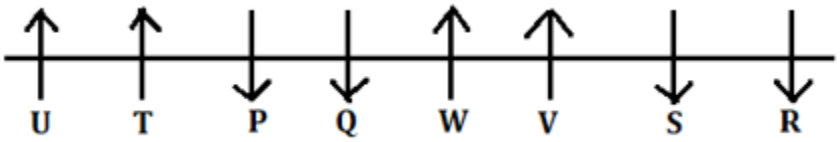
S21. Ans.(d)
Sol. From the given statements, P sits fifth to the right of R, who sits at the extreme end of the row. W sits second to the left of P and faces north. Q is an immediate neighbor of W. R faces opposite direction of W. Here we get three possibilities Case-1, Case-2 and Case-3.



Case-1

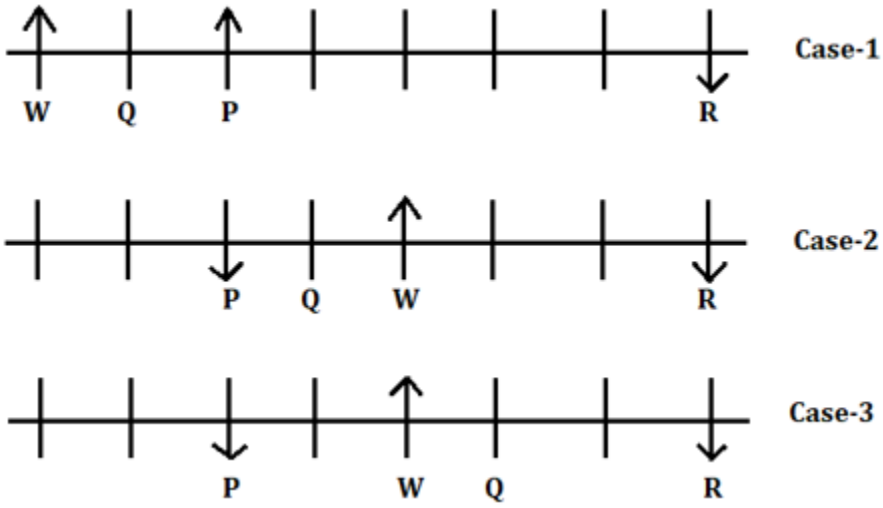


Now, Three persons sit between T and V. here case-1 and case-3 ruled out. U sits third to the right of Q. S does not sit at extreme end of row and does not face north. S sits to the immediate right of V. T and V face same direction as U. So the final arrangement will be:

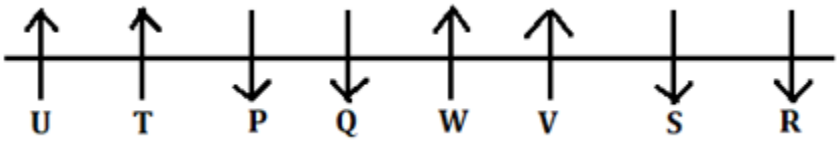


S22. Ans.(e)

Sol. From the given statements, P sits fifth to the right of R, who sits at the extreme end of the row. W sits second to the left of P and faces north. Q is an immediate neighbor of W. R faces opposite direction of W. Here we get three possibilities Case-1, Case-2 and Case-3.

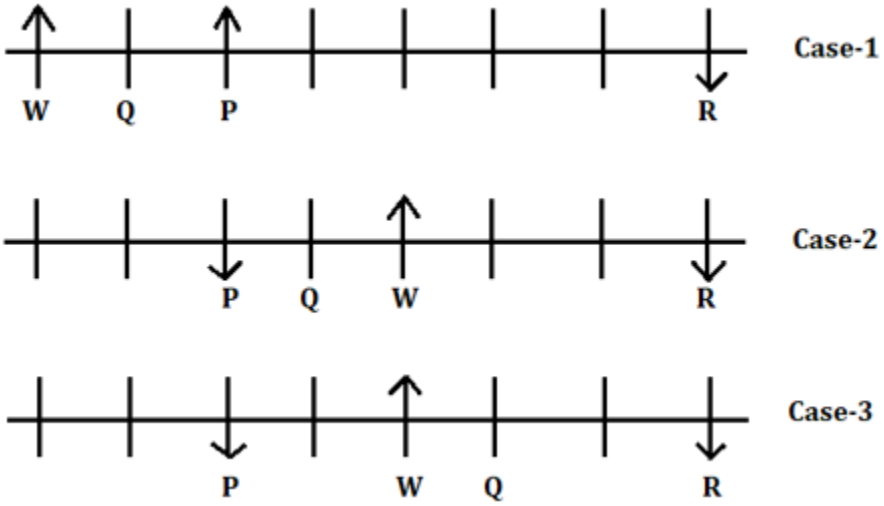


Now, Three persons sit between T and V. here case-1 and case-3 ruled out. U sits third to the right of Q. S does not sit at extreme end of row and does not face north. S sits to the immediate right of V. T and V face same direction as U. So the final arrangement will be:

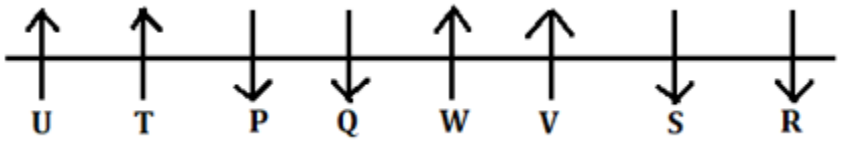


S23. Ans.(e)

Sol. From the given statements, P sits fifth to the right of R, who sits at the extreme end of the row. W sits second to the left of P and faces north. Q is an immediate neighbor of W. R faces opposite direction of W. Here we get three possibilities Case-1, Case-2 and Case-3.

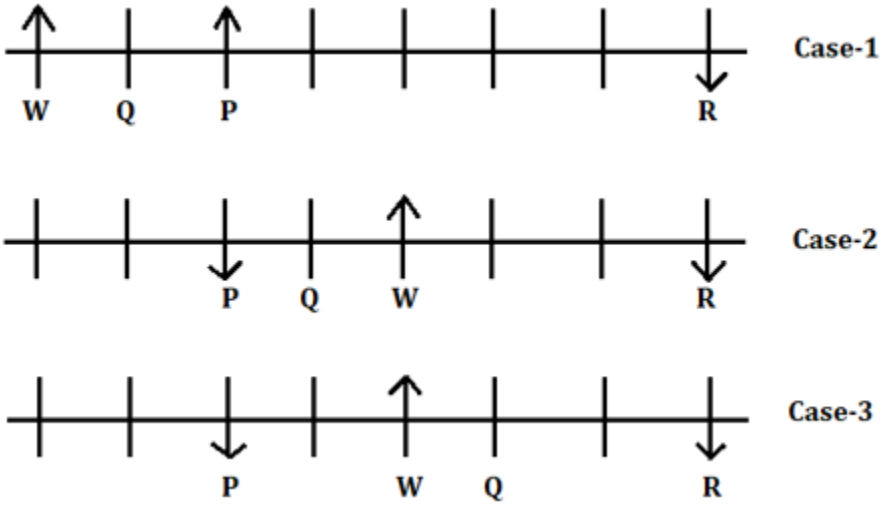


Now, Three persons sit between T and V. here case-1 and case-3 ruled out. U sits third to the right of Q. S does not sit at extreme end of row and does not face north. S sits to the immediate right of V. T and V face same direction as U. So the final arrangement will be:

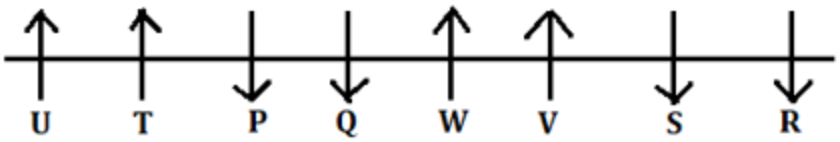


S24. Ans.(d)

Sol. From the given statements, P sits fifth to the right of R, who sits at the extreme end of the row. W sits second to the left of P and faces north. Q is an immediate neighbor of W. R faces opposite direction of W. Here we get three possibilities Case-1, Case-2 and Case-3.

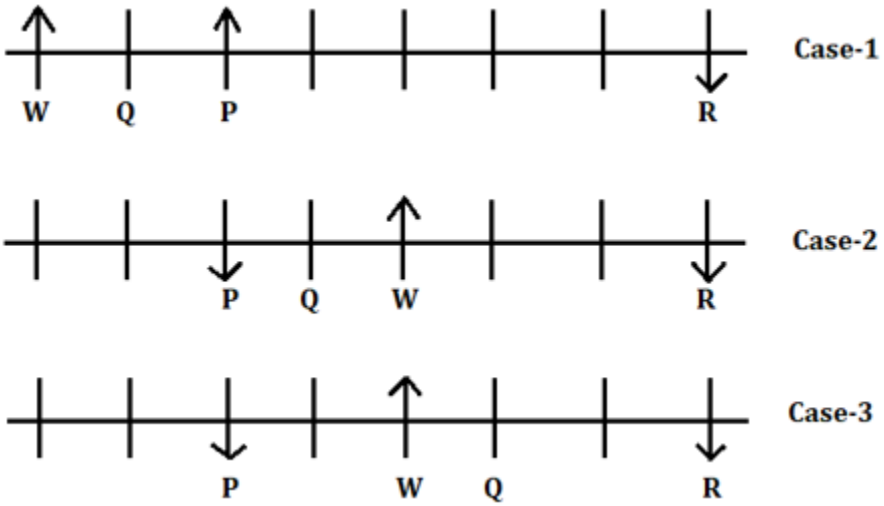


Now, Three persons sit between T and V. here case-1 and case-3 ruled out. U sits third to the right of Q. S does not sit at extreme end of row and does not face north. S sits to the immediate right of V. T and V face same direction as U. So the final arrangement will be:

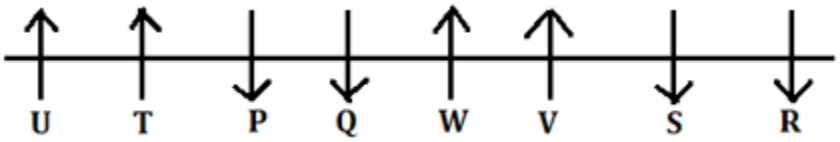


S25. Ans.(a)

Sol. From the given statements, P sits fifth to the right of R, who sits at the extreme end of the row. W sits second to the left of P and faces north. Q is an immediate neighbor of W. R faces opposite direction of W. Here we get three possibilities Case-1, Case-2 and Case-3.

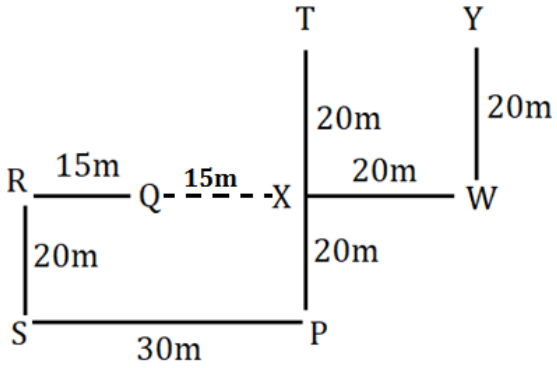


Now, Three persons sit between T and V. here case-1 and case-3 ruled out. U sits third to the right of Q. S does not sit at extreme end of row and does not face north. S sits to the immediate right of V. T and V face same direction as U. So the final arrangement will be:



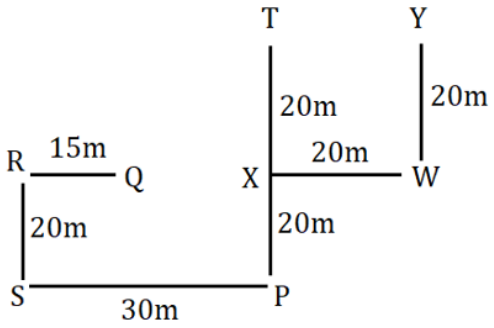
S26. Ans.(e)

Sol.



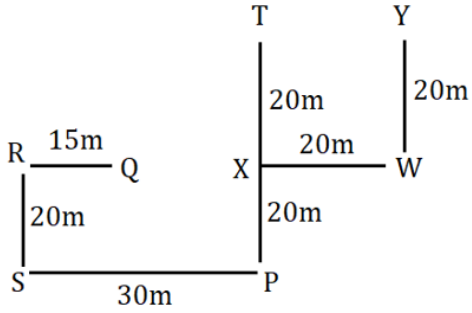
S27. Ans.(b)

Sol.



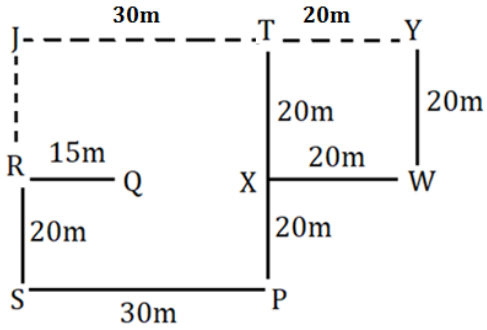
S28. Ans.(c)

Sol.



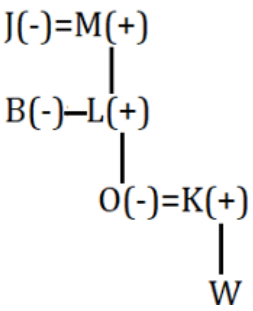
S29. Ans.(b)

Sol.

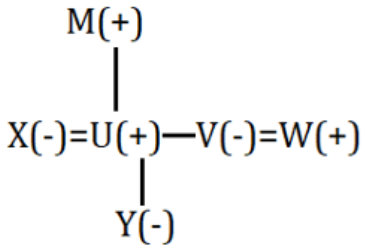


S30. Ans.(e)

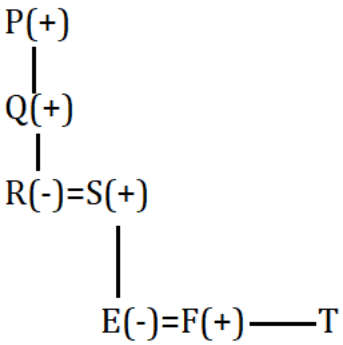
Sol.



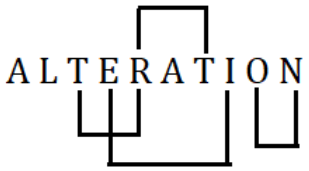
S31. Ans.(b)
Sol.



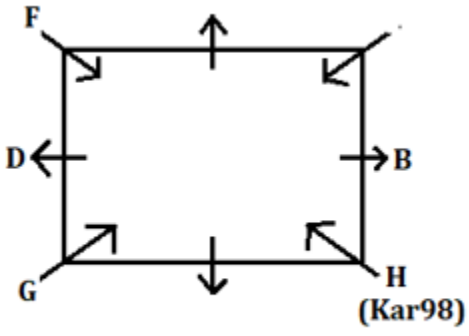
S32. Ans.(c)
Sol.



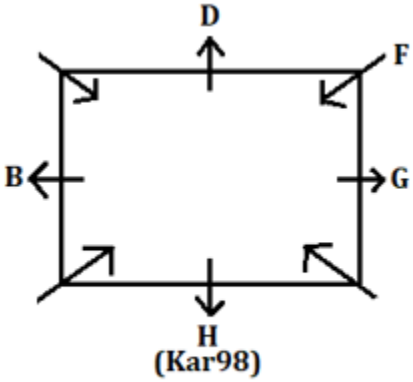
S33. Ans.(d)
Sol.



S34. Ans.(a)
Sol. From the given statements, G sits second to the left of H, who has kar98. Here we get two possibilities i.e. case-1 and case-2. D sits to the immediate right of F and does not sit at the corner of the table. B is not an immediate neighbor of G. Two persons sit between F and B.

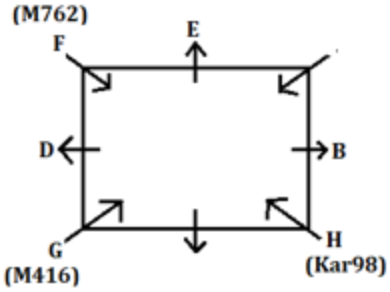


Case-1

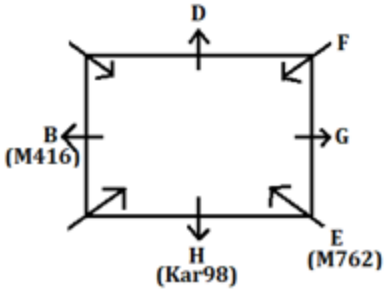


Case-2

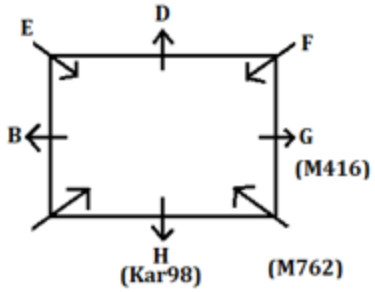
Now, the one who has M762 sits third to the left of B. E sits third to the left of the one who has M416. The one who has M416 is not an immediate neighbor of the one who has Kar98 and B. D does not have any gun. Here we get one more possibility i.e. case-2A.



Case-1

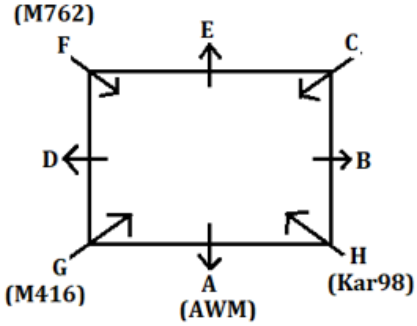


Case-2



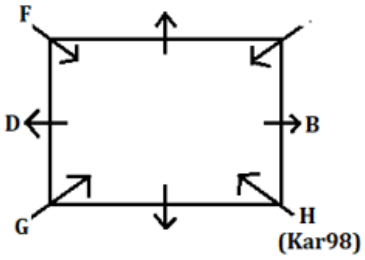
Case-2A

Now, A has AWM and is not an immediate neighbor of B. Here case-2 and Case-2A is ruled out. So, the final arrangement will be:

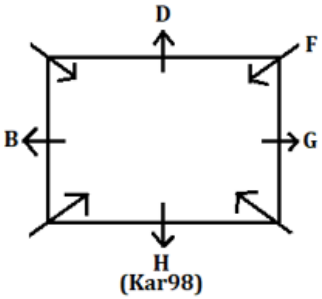


S35. Ans.(d)

Sol. From the given statements, G sits second to the left of H, who has kar98. Here we get two possibilities i.e. case-1 and case-2. D sits to the immediate right of F and does not sit at the corner of the table. B is not an immediate neighbor of G. Two persons sit between F and B.

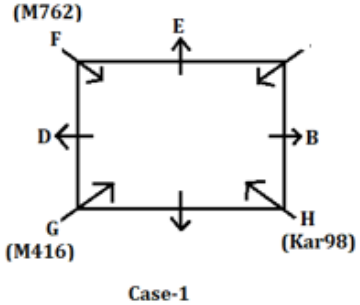


Case-1

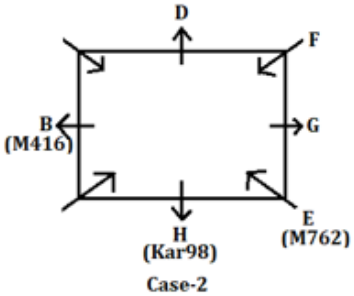


Case-2

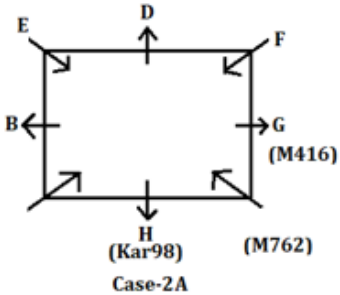
Now, the one who has M762 sits third to the left of B. E sits third to the left of the one who has M416. The one who has M416 is not an immediate neighbor of the one who has Kar98 and B. D does not have any gun. Here we get one more possibility i.e. case-2A.



Case-1

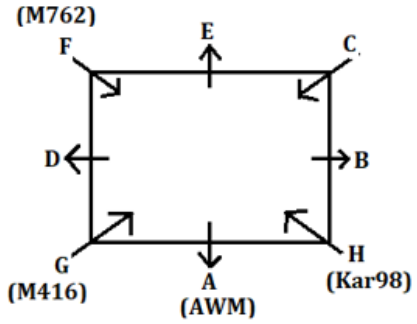


Case-2



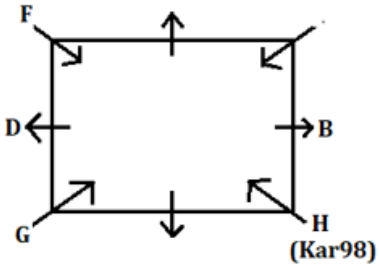
Case-2A

Now, A has AWM and is not an immediate neighbor of B. Here case-2 and Case-2A is ruled out. So, the final arrangement will be:

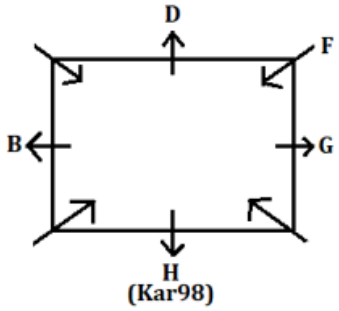


S36. Ans.(b)

Sol. From the given statements, G sits second to the left of H, who has kar98. Here we get two possibilities i.e. case-1 and case-2. D sits to the immediate right of F and does not sit at the corner of the table. B is not an immediate neighbor of G. Two persons sit between F and B.

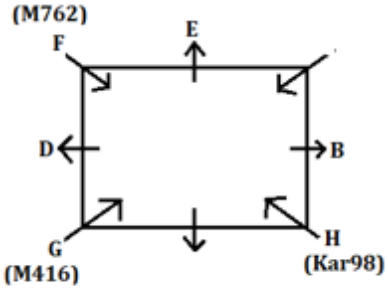


Case-1

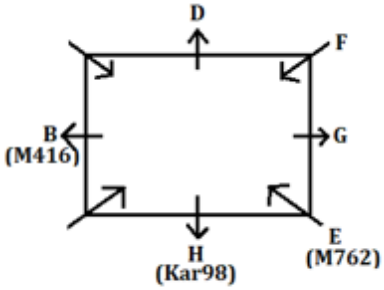


Case-2

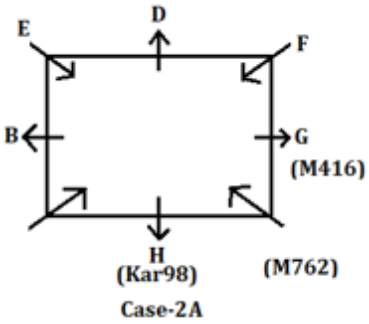
Now, the one who has M762 sits third to the left of B. E sits third to the left of the one who has M416. The one who has M416 is not an immediate neighbor of the one who has Kar98 and B. D does not have any gun. Here we get one more possibility i.e. case-2A.



Case-1



Case-2



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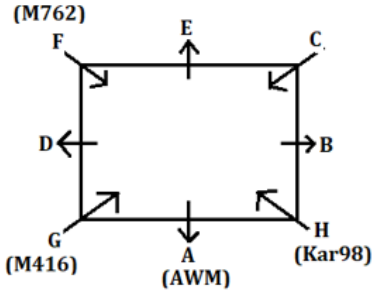
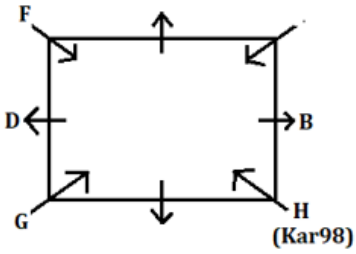
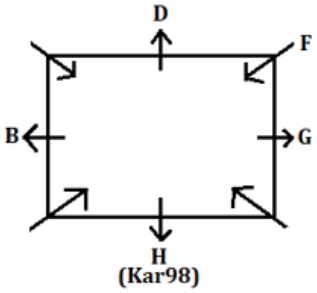


S37. Ans.(b)

Sol. From the given statements, G sits second to the left of H, who has kar98. Here we get two possibilities i.e. case-1 and case-2. D sits to the immediate right of F and does not sit at the corner of the table. B is not an immediate neighbor of G. Two persons sit between F and B.

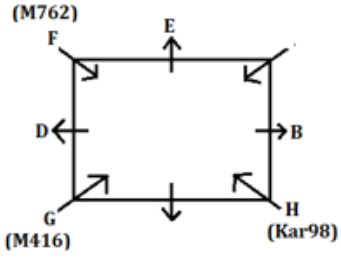


Case-1

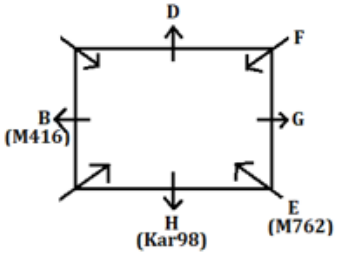


Case-2

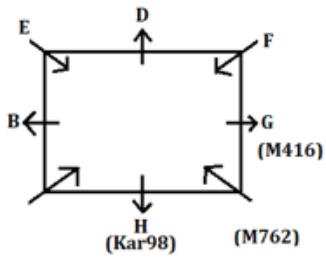
Now, the one who has M762 sits third to the left of B. E sits third to the left of the one who has M416. The one who has M416 is not an immediate neighbor of the one who has Kar98 and B. D does not have any gun. Here we get one more possibility i.e. case-2A.



Case-1



Case-2



Case-2A

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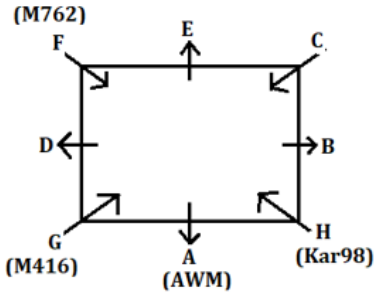
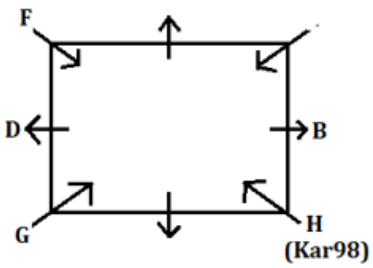
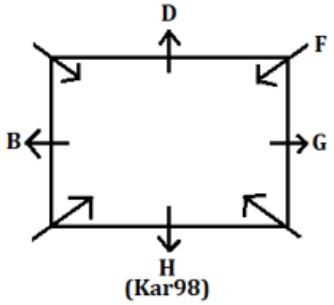


S38. Ans.(d)

Sol. From the given statements, G sits second to the left of H, who has kar98. Here we get two possibilities i.e. case-1 and case-2. D sits to the immediate right of F and does not sit at the corner of the table. B is not an immediate neighbor of G. Two persons sit between F and B.



Case-1



Case-2

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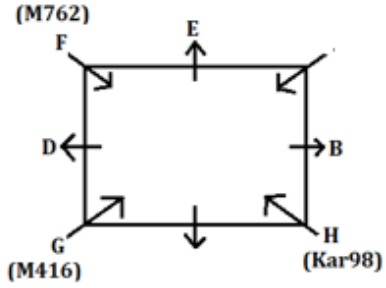
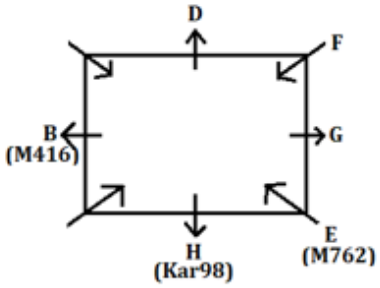
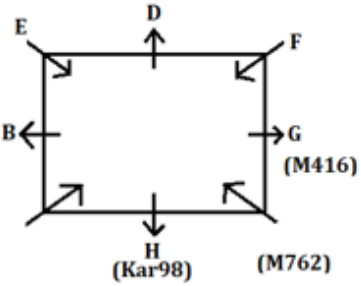


Case-1



Case-2



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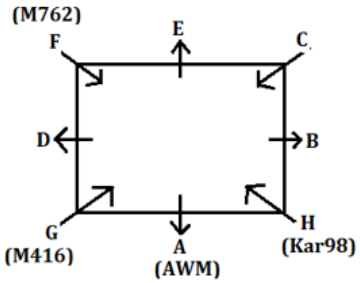

S39. Ans.(c)
Sol. I: A%E (false) **II:** F*H (false)

S40. Ans.(b)
Sol. I: W*Z (false) **II:** V@T (true)

S41. Ans.(c)
Sol.

$$\text{Required percentage} = \frac{(120+240)}{(160+240)} \times 100$$
$$= \frac{360}{400} \times 100 = 90\%$$

S42. Ans.(e)
Sol.

$$\text{Average number of girls attend in 2014, 2015 \& 2016} = \frac{240+360+300}{3} = 300$$

$$\text{Average number of boys attend in 2011, 2014 and 2016} = \frac{80+160+360}{3} = 200$$

$$\text{Required difference} = 300 - 200 = 100$$

S43. Ans.(b)
Sol.

$$\text{Total boys attend annual sports day in 2017} = 280 \times \frac{115}{100} = 322$$

$$\text{Total girls attend annual sports day in 2017} = 240 \times \frac{60}{100} = 144$$

So, total number of students attend annual sport day in 2017 = 322 + 144 = 466

S44. Ans.(d)
Sol.

$$\text{Required ratio} = \frac{(120+180)+(240+120)}{(280+360)+(360+300)}$$

$$= \frac{660}{1300} = 33:65$$

S45. Ans.(a)
Sol.
Total boys attend in all the given six years = (80 + 120 + 240 + 160 + 280 + 360) = 1240
Total girls attend in all the given six years = (260 + 180 + 120 + 240 + 360 + 300) = 1460
Required difference = 1460 – 1240 = 220

S46. Ans.(d)
Sol.
Wrong number = 1900
Pattern of series –
32 ×1.5=48
48 ×2.5=120
120 ×3.5=420
420 ×4.5=**1890**
1890 ×5.5=10395

S47. Ans.(a)
Sol.
Wrong number = 32
Pattern of series –
12 + (2.1 ×1)= 14.1
14.1 + (2.1 ×2)=18.3
18.3 + (2.1 ×3)=24.6
24.6 ×(2.1 ×4)=**33**
33 + (2.1 ×5)=43.5

S48. Ans.(a)
Sol.
Wrong number = 5680
Pattern of series –
46 ×5+5=235
235 ×4+5=945
945 ×3+5=2840
2840 ×2+5=**5685**
5685×1+5=5690

S49. Ans.(b)

Sol.

Wrong number = 300

Pattern of series –

$121 + 13^2 = \mathbf{290}$

$290 + 11^2 = 411$

$411 + 9^2 = 492$

$492 + 7^2 = 541$

$541 + 5^2 = 566$

S50. Ans.(e)

Sol.

Wrong number = 716

Pattern of series –

$10 \times 0.5 + 1 = 6$

$6 \times 1 + 2 = 8$

$8 \times 2 + 4 = 20$

$20 \times 4 + 8 = 88$

$88 \times 8 + 16 = \mathbf{720}$

S51. Ans.(d)

Sol.

Let present age of Veer and Ayush be 16n years and 7n years respectively

ATQ –

$\frac{16n+12}{7n+12} = \frac{20}{11}$

$36n = 108$

$n = 3$ years

Present age of Shivam $= 35 \times 3 - [(16 \times 3) + (7 \times 3)]$

$= 105 - (48 + 21) = 36$ years

S52. Ans.(c)

Sol.

Amount invested by Ankit in scheme P $= \frac{3900 \times 100}{2 \times 15} = 13000$ Rs.

Amount invested by Ankit in scheme Q = (13000 + X) Rs.

ATQ –

$(13000 + X)\{(1 + \frac{10}{100})^2 - 1\} = 3360$

$(13000 + X) = 16000$

$X = 3000$

S53. Ans.(a)

Sol.

Total weight of class = $(60 + 30) \times \frac{146}{3} = 4380\ kg$

Total weight of boys = $30 \times 56 = 1680$ kg

So, weight of one girl = $\frac{(4380-1680)}{60} = 45$ kg

Required difference = 56 – 45 = 11 kg

S54. Ans.(d)

Sol.

Let mark price of table = 100a

Cost price of table for Gaurav = $100a \times \frac{80}{100} = 80a$

Cost price of table for Rahul = $80a \times \frac{90}{100} = 72a$

Cost price of table for Ankit = $72a \times \frac{120}{100} = 86.4a$

ATQ –

86.4a = 1296

a = 15 Rs.

So, cost price of table for Rahul = $72a = 72 \times 15 = 1080\ Rs.$

S55. Ans.(e)

Sol.

Happy can complete the work alone = $40 \times \frac{4}{5} = 32\ days$

Let us assume Shivam can complete the work in 'd' days

ATQ –

$\frac{12}{32} + \frac{30}{d} = 1$

$\frac{30}{d} = \frac{5}{8}$

d = $\frac{30 \times 8}{5}$ = 48 days

S56. Ans.(c)

Sol.

I. $x^2 + 6x + 3x + 18 = 0$

$x(x + 6) + 3(x + 6) = 0$

$(x + 6)(x + 3) = 0$

$x = -6, -3$

II. $12y^2 + 10y + 6y + 5 = 0$

$2y(6y + 5) + 1(6y + 5) = 0$

$(6y + 5)(2y + 1) = 0$

$y = -\frac{5}{6}, -\frac{1}{2}$

So, x<y

S57. Ans.(e)
Sol.

I. $x^2 = 16$

$x = \pm 4$

II. $y^2 - 6y - 4y + 24 = 0$

$y(y - 6) - 4(y - 6) = 0$

$(y - 6)(y - 4) = 0$

$y = 6$ and 4

So, $x \leq y$

S58. Ans.(a)
Sol.

I. $12x^2 - 8x - 3x + 2 = 0$

$4x(3x - 2) - 1(3x - 2) = 0$

$(4x-1)(3x-2) = 0$

$x = \frac{1}{4}, \frac{2}{3}$

II. $6y^2 - 3y - 2y + 1 = 0$

$3y(2y - 1) - 1(2y - 1) = 0$

$(3y - 1)(2y - 1) = 0$

$y = \frac{1}{3}, \frac{1}{2}$

So, no relation can be established between x & y.

S59. Ans.(a)
Sol.

I. $6x^2 + 6x + 5x + 5 = 0$

$6x(x + 1) + 5(x + 1) = 0$

$(6x + 5)(x + 1) = 0$

$x = -\frac{5}{6}, -1$

II. $7y^2 + 7y + 4y + 4 = 0$

$7y(y + 1) + 4(y + 1) = 0$

$(7y + 4)(y + 1) = 0$

$y = -\frac{4}{7}, -1$

So, no relation can be established between x & y.

S60. Ans.(e)
Sol.

I. $6x^2 + 6x + 4x + 4 = 0$

$6x(x + 1) + 4(x + 1) = 0$

$(6x+4)(x+1) = 0$

$x = -1, -\frac{2}{3}$

II. $6y^2 + 3y + 4y + 2 = 0$

$3y(2y + 1) + 2(2y + 1) = 0$

$(2y+1)(3y+2) = 0$

$y = -\frac{1}{2}, -\frac{2}{3}$

So, $x \leq y$

S61. Ans.(a)

Sol.

Total number of books sold by store P = $(4000 + 3000) \times \frac{20}{100} = 1400$

Total number of 'Horror books' sold by store P = $4000 \times \frac{30}{100} = 1200$

So, total 'Love story books' sold by store P = 1400 – 1200 = 200

Total books sold by store Q = $(6000 + 4000) \times \frac{40}{100} = 4000$

Total number of 'Horror books' sold by store Q = $6000 \times \frac{40}{100} = 2400$

So, total 'Love story books' sold by store Q = 4000 – 2400 = 1600

Required sum = 200 + 1600 = 1800

S62. Ans.(e)

Sol.

Total number of books sold by store Q and store R together = $(6000 + 4000) \times \frac{40}{100} + (5000 + 4000) \times \frac{30}{100}$

= 4000 + 2700 = 6700

Total unsold books by store P = $(4000 + 3000) \times \frac{80}{100} = 5600$

Required number = $5600 - \frac{6700}{2} = 2250$

S63. Ans.(d)

Sol.

Total 'Horror books' sold by store R = $(5000 + 4000) \times \frac{30}{100} \times \frac{5}{9} = 1500$

Total 'Horror books' sold by store Q = $(6000 + 4000) \times \frac{40}{100} \times \frac{3}{5} = 2400$

Required sum = 1500 + 2400 = 3900

S64. Ans.(e)

Sol.

Unsold books by store P = $(4000 + 3000) \times \frac{80}{100} = 5600$

Total unsold book by store Q & R = $(6000 + 4000) \times \frac{60}{100} + (5000 + 4000) \times \frac{70}{100}$

= 6000 + 6300 = 12300

Required percentage = $\frac{5600}{12300} \times 100 = 45.52 \approx 45\%$

S65. Ans.(c)

Sol.

Total number of books sold by all three stores P, Q & R together

= $(4000 + 3000) \times \frac{20}{100} + (6000 + 4000) \times \frac{40}{100} + (5000 + 4000) \times \frac{30}{100}$

= 1400 + 4000 + 2700

= 8100

S66. Ans.(d)

Sol.

Let distance between point A to point B and point B to point C be 'm' and 'n' respectively

$37.5 = \frac{100}{\frac{m}{45}+\frac{n}{80}}$

$30m + 45n = 100 \times 45 \times 30 \times \frac{1}{37.5}$

$2m + 3n = 240$ ----- (i)

Given, $m + n = 100$ ------ (ii)

From (i) and (ii) we get

$n = 40$ km

and $m = 60$ km

So, distance between point A to B = 60 km

S67. Ans.(b)

Sol.

Ratio of milk and water in initial mixture = 100% : 20% = 5 : 1

And, ratio of milk and water in resulting mixture = 100% : 40% = 5 : 2

ATQ –

Let milk and water in initial mixture be 5x and x respectively

$\frac{5x}{x+10} = \frac{5}{2}$

$10x - 5x = 50$

$x = 10$ liters

Required difference = $5x - x = 4x = 40$ liters

S68. Ans.(b)

Sol.

Let investment of A = 8x

So, investment of B = $8x \times \left(1 - \frac{37.5}{100}\right) = 5x$

Investment of $C = 5x \times \frac{6}{5} = 6x$

Profit ratio of A, B & C = $(8x \times 4) : (5x \times 8) : (6x \times 6)$

$= 8 : 10 : 9$

ATQ –

(10 + 9) units = 17100

1 unit = 900 Rs.

Profit share of A = $8 \times 900 = 7200$ Rs.

S69. Ans.(d)

Sol.

Let radius of circle A & B be 3r and 4r respectively

$2 \times \frac{22}{7} \times 3r + 2 \times 4r = 188$ cm

$r = 7$ cm

Side of square = $\frac{8}{7} \times (3 \times 7 + 4 \times 7) = 56\ cm$

Perimeter of square = $56 \times 4 = 224\ cm$

S70. Ans.(a)

Sol.

Ways of select four chocolates out of 16 chocolates = ${}^{16}C_4$

Ways of selecting one dairy milk = ${}^{5}C_1$

Ways of selecting two munches = ${}^{6}C_2$

Ways of selecting one Kit Kat = ${}^{5}C_1$

Required probability = $\frac{{}^{6}C_2 \times {}^{5}C_1 \times {}^{5}C_1}{{}^{16}C_4}$

$= \frac{75}{364}$

S71. Ans.(e)

Sol. Let boys and girls who purchased simple royal pass be 13n and 7n respectively

So, Boys who purchased elite royal pass = 7n + 1440

And, girls who purchased elite royal pass = 9000 – 13n – 7n – 7n – 1440 = (7560 – 27n)

ATQ –

(7n + 1440 + 13n) – (7n + 7560 – 27n) = 3480

40n – 6120 = 3480

40n = 9600

n = 240

Total number of boys who purchased simple royal pass = 13n = 13 ×240=3120

Total number of girls who purchased simple royal pass = 7n =7×240=1680

Total number of boys who purchased elite royal pass = 7n + 1440 = 7 ×720+1440=3120

Total number of girls who purchased elite royal pass = 9000 – (3120 + 1680 + 3120) = 1080

Required percentage = $\frac{3120}{3120} \times 100 = 100\%$

S72. Ans.(a)

Sol. Let boys and girls who purchased simple royal pass be 13n and 7n respectively

So, Boys who purchased elite royal pass = 7n + 1440

And, girls who purchased elite royal pass = 9000 – 13n – 7n – 7n – 1440 = (7560 – 27n)

ATQ –

(7n + 1440 + 13n) – (7n + 7560 – 27n) = 3480

40n – 6120 = 3480

40n = 9600

n = 240

Total number of boys who purchased simple royal pass = 13n = 13 ×240=3120

Total number of girls who purchased simple royal pass = 7n =7×240=1680

Total number of boys who purchased elite royal pass = 7n + 1440 = 7 ×720+1440=3120

Total number of girls who purchased elite royal pass = 9000 – (3120 + 1680 + 3120) = 1080

Required ratio = $\frac{(3120+1680)}{(3120+1080)}$

$= \frac{4800}{4200} = 8 : 7$

S73. Ans.(b)
Sol. Let boys and girls who purchased simple royal pass be 13n and 7n respectively
So, Boys who purchased elite royal pass = 7n + 1440
And, girls who purchased elite royal pass = 9000 – 13n – 7n – 7n – 1440 = (7560 – 27n)
ATQ –
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Total number of boys who purchased elite royal pass = 7n + 1440 = 7 ×720+1440=3120
Total number of girls who purchased elite royal pass = 9000 – (3120 + 1680 + 3120) = 1080
Required difference = 1680 – 1080 = 600

S74. Ans.(c)
Sol. Let boys and girls who purchased simple royal pass be 13n and 7n respectively
So, Boys who purchased elite royal pass = 7n + 1440
And, girls who purchased elite royal pass = 9000 – 13n – 7n – 7n – 1440 = (7560 – 27n)
ATQ –
(7n + 1440 + 13n) – (7n + 7560 – 27n) = 3480
40n – 6120 = 3480
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n = 240
Total number of boys who purchased simple royal pass = 13n = 13 ×240=3120
Total number of girls who purchased simple royal pass = 7n =7×240=1680
Total number of boys who purchased elite royal pass = 7n + 1440 = 7 ×720+1440=3120
Total number of girls who purchased elite royal pass = 9000 – (3120 + 1680 + 3120) = 1080
$\text{Required number} = 3120 \times \frac{(100-25)}{100} = 2340$

S75. Ans.(a)
Sol. Let boys and girls who purchased simple royal pass be 13n and 7n respectively
So, Boys who purchased elite royal pass = 7n + 1440
And, girls who purchased elite royal pass = 9000 – 13n – 7n – 7n – 1440 = (7560 – 27n)
ATQ –
(7n + 1440 + 13n) – (7n + 7560 – 27n) = 3480
40n – 6120 = 3480
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n = 240
Total number of boys who purchased simple royal pass = 13n = 13 ×240=3120
Total number of girls who purchased simple royal pass = 7n =7×240=1680
Total number of boys who purchased elite royal pass = 7n + 1440 = 7 ×720+1440=3120
Total number of girls who purchased elite royal pass = 9000 – (3120 + 1680 + 3120) = 1080
Total number of boys who purchased simple royal pass and total number of girls who purchased elite royal in season $12 = 3120 \times \frac{5}{4} + 1080 \times \frac{11}{6}$
= 3900 + 1980 = 5880

S76. Ans.(b)

Sol.

$\frac{25}{100} \times (144 + ?^2) + 460 = 512$

$?^2 = 4 \times (512 - 460 - 36)$

$?^2 = 64$

$? = 8$

S77. Ans.(b)

Sol.

$\frac{?}{100} \times 480 + \frac{20}{100} \times 360 = 240$

$4.8 \times ? = 240 - 72$

$? = \frac{168}{4.8}$

$? = 35$

S78. Ans.(c)

Sol.

$\frac{28}{100} \times ? + 900 = 1225 + 25$

$\frac{28}{100} \times ? = 1250 - 900$

$? = 350 \times \frac{100}{28}$

$? = 1250$

S79. Ans.(a)

Sol.

$? + \frac{125}{100} \times 240 - 216 = 144$

$? = 144 - 84$

$? = 60$

S80. Ans.(b)

Sol.

$\frac{840}{?} = \frac{70}{100} \times 800 - 512$

$\frac{840}{?} = 560 - 512$

$? = \frac{840}{48}$

$? = 17.5$

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