

Sec 1

Directions for questions 25 to 28: Answer the questions on the basis of the information given below.

The healthy foods start-up that started in 2019 is to present its business model in Shark Tank India Season 2. This start-up has opened online outlets in 3 states: Delhi, Maharashtra and Karnataka. The products are categorized under three main domains - Frozen Food (FRO), Snacks (SK) and Ready2Eat (R2E). An accountant has been asked to prepare a summary of sales amounts for 2019, 2020 and 2021 for presentation purposes. He has collected partial information and prepared the following table.

Product Domain	Sales Amount (In Rs. Lakh)								
	Delhi			Maharashtra			Karnataka		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
Frozen Foods (FRO)					108				96
Snacks (SK)	102	90	98	78	82	100	70	80	64
Ready2Eat (R2E)		100		80			54		72

- (i) The sales amounts in the R2E domain were the same for Delhi and Maharashtra in 2021.
- (ii) The sales amounts in the R2E domain were the same for Maharashtra and Karnataka in 2020.
The sales amounts in the R2E domain from 2019 to 2021 for Delhi and Maharashtra each followed the Arithmetic Progression.
- (iii) The sum of the sales amounts of SK domain in three states increased by the same amount as the sum of the sales amounts of R2E domain from 2020 to 2021.
- (iv) The sales amounts in the FRO domain of Delhi and Maharashtra increased by the same amount in 2020 from 2019 as total sales amounts of Delhi in SK domain in 2021 from 2020.
- (v) The total sales amounts of the three states in FRO domain increased by Rs. 70 lakhs from 2019 to 2020 and further decreased by Rs. 167 lakhs from 2020 to 2021.
- (vi) The sales amounts in the FRO domain was the same for Delhi and Maharashtra in 2021.
This sales amount matched the sales amount in the FRO domain for Karnataka in 2019.
- (vii) In one of the years, in FRO domain, Maharashtra had the sales amount of Rs.90 lakhs.

Q.1 [11831809]

What was the sales amount (in Rs. lakhs) of Delhi in FRO domain in 2020?

Solution:

Correct Answer : 191

 Answer key/Solution

Step 1:

From condition (i), Let 'a' be the sales amount in R2E domain in Delhi and Maharashtra in 2021.

From condition (ii), Let 'b' be the sales amount in R2E domain in Maharashtra and Karnataka in 2020.

From condition (iii), $(a + a + 72) - (100 + b + b) = (98 + 100 + 64) - (90 + 82 + 80)$

$$\Rightarrow 2a - 2b - 28 = 10$$

$$\Rightarrow a - b = 19$$

This means $a > b$.

$$\text{Also, } b - 80 = a - b = 19$$

$$\Rightarrow b = 99 \text{ and } a = 118$$

Step 2:

From condition (iv), Let the sales amounts in the FRO domain in Delhi be 'x'.

Then, its value in Delhi in 2020 will be $x + 8$.

From condition (v), $(x + 8 + 108 + y) - (x + 100 + 90) = 70$

$$\Rightarrow y = 144$$

$$\text{Also, } (x + 8 + 108 + 144) - (90 + 90 + 96) = 167$$

$$\Rightarrow x = 183$$

Also, from conditions (vi) and (vii), the final table can be shown as:

Product Domain	Sales Amount (In Rs. Lakh)								
	Delhi			Maharashtra			Karnataka		
	2019	2020	2021	2019	2020	2021	2019	2020	2021
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Ready2Eat (R2E)	82	100	$a = 118$	80	$b = 99$	$a = 118$	54	$b = 99$	72

The sales amounts of Delhi in FRO domain in 2020 was Rs. 191 lakhs.

Bookmark

FeedBack

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This sales amount matched the sales amount in the FRO domain for Karnataka in 2019.
(vii) In one of the years, in FRO domain, Maharashtra had the sales amount of Rs.90 lakhs.

Q.2 [11831809]

In which states were the total sales amounts the highest in 2020 and 2021, respectively, across all domains?

1 ☐ Delhi and Karnataka

2 ☐ Delhi and Delhi

3 ☐ Maharashtra and Delhi

4 ☐ Delhi and Maharashtra

Solution:

Correct Answer : 4

 Answer key/Solution

Step 1:

From condition (i), Let 'a' be the sales amount in R2E domain in Delhi and Maharashtra in 2021.

From condition (ii), Let 'b' be the sales amount in R2E domain in Maharashtra and Karnataka in 2020.

From condition (iii), $(a + a + 72) - (100 + b + b) = (98 + 100 + 64) - (90 + 82 + 80)$

$$\Rightarrow 2a - 2b - 28 = 10$$

$$\Rightarrow a - b = 19$$

This means $a > b$.

$$\text{Also, } b - 80 = a - b = 19$$

$$\Rightarrow b = 99 \text{ and } a = 118$$

Step 2:

From condition (iv), Let the sales amounts in the FRO domain in Delhi be 'x'.

Then, its value in Delhi in 2020 will be $x + 8$.

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The highest total sales amounts in 2020 and 2021 across all domains were in Delhi (i.e., Rs. 381 lakhs) and Maharashtra (i.e., Rs. 308 lakhs) respectively.

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- (vii) In one of the years, in FRO domain, Maharashtra had the sales amount of Rs.90 lakhs.

Q.3 [11831809]

What was the increase in total sales amount (in Rs. lakhs) in the R2E domain from 2020 to 2021, across all states?

Solution:

Correct Answer : 10

 Answer key/Solution

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Ready2Eat (R2E)	82	100	$a = 118$	80	$b = 99$	$a = 118$	54	$b = 99$	72

The required sales amount increased = $(118 + 118 + 72) - (100 + 99 + 99) = \text{Rs.10 lakhs.}$

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(vii) In one of the years, in FRO domain, Maharashtra had the sales amount of Rs.90 lakhs.

Q.4 [11831809]

Among all the 9 domains (i.e., the 3 domains in each of the 3 cities), what was the maximum percentage increase (to the nearest integer) in sales amount from 2019 to 2021?

1 ☐ 28

2 ☐ 44

3 ☐ 48

4 ☐ 33

Solution:

Correct Answer : 3

[Answer key/Solution](#)

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The required maximum percentage increase in R2E domain in Maharashtra = $\frac{(118 - 80)}{80} \times 100 = 47.5 \approx 48\%$ (to the nearest integer).

Bookmark

FeedBack

Directions for questions 29 to 32: Answer the questions on the basis of the information given below.

In an 8×8 chessboard a queen placed anywhere can attack another piece if the piece is present in the same row, or in the same column or in any diagonal position in any possible 4 directions, provided there is no other piece in between in the path from the queen to that piece. Similarly, a bishop placed anywhere can attack another piece in any diagonal position in the possible 4 directions and a rook placed anywhere can attack another piece placed in the same row or column, provided there is no piece placed in its path. The columns are labeled A to H (from left to right) and the rows are numbered 1 to 8 (from top to bottom). The position of a piece is given by the combination of column and row labels. For example, position B3 means that the piece is in the Bth column and 3rd row.

Q.5 [11831809]

If the queen is placed at B5, a rook at A8 and a bishop is placed at F4, then in how many positions on the chess board can the opponent's piece be placed such that it is safe from the attack from these three?

2 ☐ 25

3 ☐ 22

4 ☐ 21

Solution:

Correct Answer : 4

[Answer key/Solution](#)

	A	B	C	D	E	F	G	H
1	X	X	X			X		
2	X	X		X	X			X
3	X	X		X	X		X	
4	X	X	X			Bishop		
5	X	Queen	X	X	X	X	X	X
6	X	X	X	X				X
7	X	X	X	X				
8	Rook	X	X	X	X	X	X	X

We can see that there are 21 positions that are safe on the chess board.

Bookmark

FeedBack

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Q.6 [11831809]

If the queen is placed at G4, a bishop is placed at B6 and a rook at D2, then the opponent's pawn is definitely unsafe in which of the following positions?

1 ☐ F8

2 ☐ H5

3 ☐ E7

4 ☐ B3

Solution:

Correct Answer : 2

 Answer key/Solution

	A	B	C	D	E	F	G	H
1				X			X	
2	X	X	X	Rook	X	X	X	X
3		B3		X	X	X	X	X
4	X	X	X	X	X	X	Queen	X
5	X		X	X		X	X	X H5
6		Bishop		X	X		X	
7	X		X	X	E7		X	
8			X	X		F8	X	

We can see from the above board that the opponent's piece is definitely unsafe in H5. The remaining options are safe.

Bookmark

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Q.7 [11831809]

If the queen, rook and bishop are placed at adjacent positions in the same row on the board, then what is the maximum percentage (approximately) of the board that can be covered?

1 ☐ 52%

2 ☐ 61%

3 ☐ 66%

4 ☐ 64%

Solution:

Correct Answer : 3

 Answer key/Solution

	A	B	C	D	E	F	G	H
1	X	X		X		X	X	X
2		X	X	X		X	X	
3			X	X	X	X		
4	X	X	X	Queen	Bishop	Rook	X	X
5			X	X	X	X		
6		X	X	X		X	X	
7	X	X		X		X	X	X
8	X			X		X		X

Note that the maximum number of squares will be covered if the pieces are in one of the middle rows.

Hence, required percentage = $\frac{42}{64} \times 100 = 65.625\% \approx 66\%$.

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In an 8×8 chessboard a queen placed anywhere can attack another piece if the piece is present in the same row, or in the same column or in any diagonal position in any possible 4 directions, provided there is no other piece in between in the path from the queen to that piece. Similarly, a bishop placed anywhere can attack another piece in any diagonal position in the possible 4 directions and a rook placed anywhere can attack another piece placed in the same row or column, provided there is no piece placed in its path. The columns are labeled A to H (from left to right) and the rows are numbered 1 to 8 (from top to bottom). The position of a piece is given by the combination of column and row labels. For example, position B3 means that the piece is in the Bth column and 3rd row.

Q.8 [11831809]

If the queen, bishop and rook are placed as far away from each other as possible and make a right triangle, then in which of the following positions are the opponent's pieces safe?

1 ☐ F3, B6, H1

2 ☐ G6, C2, F4

3 ☐ D5, E3, A7

4 ☐ H8, D7, A3

Solution:

Correct Answer : 2

 Answer key/Solution

	A	B	C	D	E	F	G	H
1	Queen	X	X	X	X	X	X	X
2	X	X					X	X
3	X		X			X		X
4	X			X	X			X
5	X			X	X			X
6	X		X			X		X
7	X	X					X	X
8	Bishop	X	X	X	X	X	X	Rook

The farthest that any piece can be from any other piece on the chess board is 8 places away.
Hence, we can see that the pieces placed in G6, C2 and H4 are only safe.

Bookmark

FeedBack

Directions for questions 33 to 36: Answer the questions on the basis of the information given below.

Five passengers — Jatin, Kamal, Lalit, Mohit and Niraj — are traveling by Sky Air flight from Chennai to Mumbai. Each one has opted for at least one of the three available add ons - in-flight food, window seat and extra leg-space. None of the passengers has any add-on that is not one of these three.

It is also known that:

- (i) Jatin has opted for a window seat and extra leg-space.
- (ii) Jatin and Kamal have no add-ons in common.
- (iii) Jatin and Lalit have at least one add-on in common.
- (iv) Lalit has opted for a greater number of add-ons than Kamal.
- (v) Lalit and Niraj have no add-ons in common.
- (vi) Mohit has opted for more add-ons than Jatin.

Q.9 [11831809]

If Lalit has a combination of add-ons different from any of the other passengers, then which one of the following statements must be true?

- 1 ☐ Lalit has opted for in-flight food.
- 2 ☐ Lalit has opted for extra leg-space.
- 3 ☐ Kamal and Niraj have opted for exactly the same add-ons.
- 4 ☐ Mohit and Niraj have opted for exactly the same add-ons.

Solution:

Correct Answer : 1

 Answer key/Solution

According to the information given we get 3 cases.

The differences in choices are only for Lalit and Niraj.

The remaining three passengers' choices remain the same.

Case 1:

Name	In-flight food	Window seat	Extra-leg space
Jatin	×	✓	✓
Kamal	✓	×	×
Lalit	✓	✓	×
Mohit	✓	✓	✓
Niraj	×	×	✓

Case 2:

Name	In-flight food	Window seat	Extra-leg space
Jatin	×	✓	✓
Kamal	✓	×	×
Lalit	×	✓	✓
Mohit	✓	✓	✓
Niraj	✓	×	×

Case 3:

Name	In-flight food	Window seat	Extra-leg space
Jatin	×	✓	✓
Kamal	✓	×	×
Lalit	✓	×	✓
Mohit	✓	✓	✓
Niraj	×	✓	×

Lalit's choice of add-ons are not exactly the same as any other passenger. Lalit has two add-ons and so does Jatin, but according to the question they cannot be the same for both.

Jatin has opted for a window seat and extra leg-space.

Condition (iii), tells us that Lalit shares at least (and in this question, exactly) one add-on with Jatin. So Lalit's other add-on must be in-flight food. Hence, option (1) is the correct.

Bookmark

FeedBack

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Five passengers — Jatin, Kamal, Lalit, Mohit and Niraj — are traveling by Sky Air flight from Chennai to Mumbai. Each one has opted for at least one of the three available add ons - in-flight food, window seat and extra leg-space. None of the passengers has any add-on that is not one of these three.

It is also known that:

- (i) Jatin has opted for a window seat and extra leg-space.
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- (iv) Lalit has opted for a greater number of add-ons than Kamal.
- (v) Lalit and Niraj have no add-ons in common.
- (vi) Mohit has opted for more add-ons than Jatin.

Q.10 [11831809]

The passengers in which one of the following pairs must have exactly one add-on in common?

1 ☐ Jatin and Lalit

2 ☐ Jatin and Niraj

3 ☐ Kamal and Lalit

4 ☐ Mohit and Niraj

Solution:

Correct Answer : 4

 Answer key/Solution

According to the information given we get 3 cases.

The differences in choices are only for Lalit and Niraj.

The remaining three passengers' choices remain the same.

Case 1:

Name	In-flight food	Window seat	Extra-leg space
Jatin	×	✓	✓
Kamal	✓	×	×
Lalit	✓	✓	×
Mohit	✓	✓	✓
Niraj	×	×	✓

Case 2:

Name	In-flight food	Window seat	Extra-leg space
Jatin	×	✓	✓
Kamal	✓	×	×
Lalit	×	✓	✓
Mohit	✓	✓	✓
Niraj	✓	×	×

Case 3:

Name	In-flight food	Window seat	Extra-leg space
Jatin	×	✓	✓
Kamal	✓	×	×
Lalit	✓	×	✓
Mohit	✓	✓	✓
Niraj	×	✓	×

The question asks for exactly one add-on in common. Jatin and Lalit may have one or more add-ons in common. Jatin and Niraj may or may not have add-ons in common. Kamal and Lalit may or may not have add-ons in common, but Mohit has opted for all the three add-ons, so either Kamal or Niraj, with exactly one add-on would be in common. We can see that option (4), Mohit and Niraj, is the correct answer.

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- (ii) Jatin and Kamal have no add-ons in common.
- (iii) Jatin and Lalit have at least one add-on in common.
- (iv) Lalit has opted for a greater number of add-ons than Kamal.
- (v) Lalit and Niraj have no add-ons in common.
- (vi) Mohit has opted for more add-ons than Jatin.

Q.11 [11831809]

If another passenger, Rohit has opted for exactly two of the three add-ons, then he cannot have all of the add-ons of

1 ☐ Both Jatin and Kamal

2 ☐ Both Lalit and Niraj

3 ☐ Both (1) and (2)

4 ☐ Both Kamal and Lalit

Solution:

Correct Answer : 3

 Answer key/Solution

According to the information given we get 3 cases.

The differences in choices are only for Lalit and Niraj.

The remaining three passengers' choices remain the same.

Case 1:

Name	In-flight food	Window seat	Extra-leg space
Jatin	×	✓	✓
Kamal	✓	×	×
Lalit	✓	✓	×
Mohit	✓	✓	✓
Niraj	×	×	✓

Case 2:

Name	In-flight food	Window seat	Extra-leg space
Jatin	×	✓	✓
Kamal	✓	×	×
Lalit	×	✓	✓
Mohit	✓	✓	✓
Niraj	✓	×	×

Case 3:

Name	In-flight food	Window seat	Extra-leg space
Jatin	×	✓	✓
Kamal	✓	×	×
Lalit	✓	×	✓
Mohit	✓	✓	✓
Niraj	×	✓	×

Jatin and Kamal have opted for all the add-ons between them. Lalit and Niraj also have all three add-ons between them, since Lalit has chosen two add-ons, Niraj has chosen one add-on and they have none in common. So Rohit, who has chosen exactly two add-ons, cannot have all the add-ons of Jatin and Kamal or all add-ons of Lalit and Niraj. Hence, option (3) is the correct answer.

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Directions for questions 33 to 36: Answer the questions on the basis of the information given below.

Five passengers — Jatin, Kamal, Lalit, Mohit and Niraj — are traveling by Sky Air flight from Chennai to Mumbai. Each one has opted for at least one of the three available add ons - in-flight food, window seat and extra leg-space. None of the passengers has any add-on that is not one of these three.

It is also known that:

- (i) Jatin has opted for a window seat and extra leg-space.
- (ii) Jatin and Kamal have no add-ons in common.
- (iii) Jatin and Lalit have at least one add-on in common.
- (iv) Lalit has opted for a greater number of add-ons than Kamal.
- (v) Lalit and Niraj have no add-ons in common.
- (vi) Mohit has opted for more add-ons than Jatin.

Q.12 [11831809]

If the costs of in-flight food, window seat and extra leg-space are Rs.450, Rs.350 and Rs.250 respectively, then which of the following statements is **definitely** false?

1 ☐ Lalit pays Rs.100 less than the amount paid by Kamal and Niraj together.

2 ☐ The ratio of the amounts paid by Jatin and Lalit is 1 : 1.

3 ☐ Lalit pays double the amount that Niraj pays.

4 ☐ Jatin pays exactly double the amount paid by Niraj.

Solution:

Correct Answer : 4

 Answer key/Solution

According to the information given we get 3 cases.

The differences in choices are only for Lalit and Niraj.

The remaining three passengers' choices remain the same.

Case 1:

Name	In-flight food	Window seat	Extra-leg space
Jatin	×	✓	✓
Kamal	✓	×	×
Lalit	✓	✓	×
Mohit	✓	✓	✓
Niraj	×	×	✓

Case 2:

Name	In-flight food	Window seat	Extra-leg space
Jatin	×	✓	✓
Kamal	✓	×	×
Lalit	×	✓	✓
Mohit	✓	✓	✓
Niraj	✓	×	×

Case 3:

Name	In-flight food	Window seat	Extra-leg space
Jatin	×	✓	✓
Kamal	✓	×	×
Lalit	✓	×	✓
Mohit	✓	✓	✓
Niraj	×	✓	×

In the case when Lalit opts for in-flight food and extra leg-space, then Kamal opts for a window seat. Lalit pays $(450 + 250) = \text{Rs.}700$ and Kamal and Niraj together pay $(450 + 350) = \text{Rs.}800$. So option (1) can be true.

Jatin pays $(350 + 250) = \text{Rs.}600$, for his choice of add-ons. Lalit also pays the same amount in the case when he opts for window seat and extra leg-space. In this case the ratio is 1 : 1. So option (2) can be true.

In the case when Lalit opts for in-flight food and extra leg-space, he pays Rs.700 whereas in this case Niraj opts for window seat and pays Rs.350. So option (3) can be true.

Niraj chooses exactly one of the three add-ons in any case so he pays either Rs.450 or Rs.350 or Rs.250 whereas Jatin pays $(350 + 250) = \text{Rs.}600$. In none of the three cases does Jatin pay double the amount paid by Niraj.

So option (4) is definitely false.

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Directions for questions 37 to 40: Answer the questions on the basis of the information given below.

Recently 5 released Bollywood movies have most of their gross collection from 5 states of India mainly from Bihar, Madhya Pradesh, Maharashtra, Rajasthan and Utter Pradesh. The five movies released in the month are Benshah, Khuj, Koochi, Roofan and Timi. The total collection of these movies in the five states is Rs. 500 crores. Table-1 given below shows the state wise percentage collection and Table-2 given below shows the percentage collection from different movies in the states.

Table - 1

State	Bihar	Madhya Pradesh	Maharashtra	Rajasthan	Utter Pradesh
Percentage collection	16%	20%	19%	25%	20%

Table - 2

State	Movie				
	Benshah	Khuj	Koochi	Roofan	Timi
Bihar	10%	25%	19%	21%	25%
Madhya Pradesh	30%	25%	12%	17%	16%
Maharashtra	10%	20%	16%	18%	36%
Rajasthan	18%	13%	30%	6%	33%
Utter Pradesh	25%	20%	12%	21%	22%

Q.13 [11831809]

The highest grossing movie from Rajasthan is how much (in Rs. crores) more than the highest grossing movie from Bihar?

Solution:

Correct Answer : 21.25

 Answer key/Solution

The given information can be shown in the following table.

State	Collection (in Rs. Crore)	Collection (in Rs. crore)				
		Benshah	Khuj	Koochi	Roofan	Timi
Bihar	80	8	20	15.2	16.8	20
Madhya Pradesh	100	30	25	12	17	16
Maharashtra	95	9.5	19	15.2	17.1	34.2
Rajasthan	125	22.5	16.25	37.5	7.5	41.25
Utter Pradesh	100	25	20	12	21	22
Total	500	95	100.25	91.9	79.4	133.45

Required difference = $41.25 - 20 = \text{Rs. } 21.25$ crores.

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Directions for questions 37 to 40: Answer the questions on the basis of the information given below.

Recently 5 released Bollywood movies have most of their gross collection from 5 states of India mainly from Bihar, Madhya Pradesh, Maharashtra, Rajasthan and Utter Pradesh. The five movies released in the month are Benshah, Khuj, Koochi, Roofan and Timi. The total collection of these movies in the five states is Rs. 500 crores. Table-1 given below shows the state wise percentage collection and Table-2 given below shows the percentage collection from different movies in the states.

Table - 1

State	Bihar	Madhya Pradesh	Maharashtra	Rajasthan	Utter Pradesh
Percentage collection	16%	20%	19%	25%	20%

Table - 2

State	Movie				
	Benshah	Khuj	Koochi	Roofan	Timi
Bihar	10%	25%	19%	21%	25%
Madhya Pradesh	30%	25%	12%	17%	16%
Maharashtra	10%	20%	16%	18%	36%
Rajasthan	18%	13%	30%	6%	33%
Utter Pradesh	25%	20%	12%	21%	22%

Q.14 [11831809]

A movie is said to be Hit if its collection is more than Rs.100 crores from all the five states. How many movies will be definitely Hit of the given movies?

Solution:

Correct Answer : 2

The given information can be shown in the following table.

State	Collection (in Rs. Crore)	Collection (in Rs. crore)				
		Benshah	Khuj	Koochi	Roofan	Timi
Bihar	80	8	20	15.2	16.8	20
Madhya Pradesh	100	30	25	12	17	16
Maharashtra	95	9.5	19	15.2	17.1	34.2
Rajasthan	125	22.5	16.25	37.5	7.5	41.25
Utter Pradesh	100	25	20	12	21	22
Total	500	95	100.25	91.9	79.4	133.45

Two movies (Khuj, Timi) will be definitely Hit.

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 Answer key/Solution

Directions for questions 37 to 40: Answer the questions on the basis of the information given below.

Recently 5 released Bollywood movies have most of their gross collection from 5 states of India mainly from Bihar, Madhya Pradesh, Maharashtra, Rajasthan and Utter Pradesh. The five movies released in the month are Benshah, Khuj, Koochi, Roofan and Timi. The total collection of these movies in the five states is Rs. 500 crores. Table-1 given below shows the state wise percentage collection and Table-2 given below shows the percentage collection from different movies in the states.

Table - 1

State	Bihar	Madhya Pradesh	Maharashtra	Rajasthan	Utter Pradesh
Percentage collection	16%	20%	19%	25%	20%

Table - 2

State	Movie				
	Benshah	Khuj	Koochi	Roofan	Timi
Bihar	10%	25%	19%	21%	25%
Madhya Pradesh	30%	25%	12%	17%	16%
Maharashtra	10%	20%	16%	18%	36%
Rajasthan	18%	13%	30%	6%	33%
Utter Pradesh	25%	20%	12%	21%	22%

Q.15 [11831809]

If occupancy rate is 50% across all the states and number of Cinema hall seats in Bihar, Madhya Pradesh, Maharashtra, Rajasthan and Utter Pradesh are in ratio 1 : 1 : 2 : 3 : 3 respectively, then which state has the highest average ticket price? (Assume the movies collection is for same period and all movies were screened equally in a day.)

1 ☐ Madhya Pradesh

2 ☐ Maharashtra

3 ☐ Bihar

4 ☐ Uttar Pradesh

Solution:

Correct Answer : 1

 Answer key/Solution

The given information can be shown in the following table.

State	Collection (in Rs. Crore)	Collection (in Rs. crore)				
		Benshah	Khuj	Koohi	Roofan	Timi
Bihar	80	8	20	15.2	16.8	20
Madhya Pradesh	100	30	25	12	17	16
Maharashtra	95	9.5	19	15.2	17.1	34.2
Rajasthan	125	22.5	16.25	37.5	7.5	41.25
Utter Pradesh	100	25	20	12	21	22
Total	500	95	100.25	91.9	79.4	133.45

Let the number of Cinema hall seats in Bihar, Madhya Pradesh, Maharashtra, Rajasthan and Utter Pradesh be x , x , $2x$, $3x$ and $3x$ respectively.

Since occupancy rate is 50% across all the states.

So the average ticket price for:

$$\text{Bihar} = \frac{80}{\left(\frac{x}{2}\right)} = \frac{160}{x}, \text{ Madhya Pradesh} = \frac{100}{\left(\frac{x}{2}\right)} = \frac{200}{x}, \text{ Maharashtra} = \frac{95}{\left(\frac{2x}{2}\right)} = \frac{95}{x},$$

$$\text{Rajasthan} = \frac{125}{\left(\frac{3x}{2}\right)} = \frac{250}{3x} \text{ and } \text{Uttar Pradesh} = \frac{100}{\left(\frac{3x}{2}\right)} = \frac{200}{3x}$$

Hence, the highest average ticket price is for Madhya Pradesh.

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Directions for questions 37 to 40: Answer the questions on the basis of the information given below.

Recently 5 released Bollywood movies have most of their gross collection from 5 states of India mainly from Bihar, Madhya Pradesh, Maharashtra, Rajasthan and Utter Pradesh. The five movies released in the month are Benshah, Khuj, Koochi, Roofan and Timi. The total collection of these movies in the five states is Rs. 500 crores. Table-1 given below shows the state wise percentage collection and Table-2 given below shows the percentage collection from different movies in the states.

Table - 1

State	Bihar	Madhya Pradesh	Maharashtra	Rajasthan	Utter Pradesh
Percentage collection	16%	20%	19%	25%	20%

Table - 2

State	Movie				
	Benshah	Khuj	Koochi	Roofan	Timi
Bihar	10%	25%	19%	21%	25%
Madhya Pradesh	30%	25%	12%	17%	16%
Maharashtra	10%	20%	16%	18%	36%
Rajasthan	18%	13%	30%	6%	33%
Utter Pradesh	25%	20%	12%	21%	22%

Q.16 [11831809]

If the ratio of ticket prices for the movies Benshah, Khuj, Koochi, Roofan and Timi are 3 : 2 : 5 : 3 : 6 respectively, then for which movie has the lowest number of movie goers?

1 ☐ Timi

2 ☐ Roofan

3 ☐ Koochi

4 ☐ Benshah

Solution:

Correct Answer : 3

 Answer key/Solution

The given information can be shown in the following table.

State	Collection (in Rs. Crore)	Collection (in Rs. crore)				
		Benshah	Khuj	Koohi	Roofan	Timi
Bihar	80	8	20	15.2	16.8	20
Madhya Pradesh	100	30	25	12	17	16
Maharashtra	95	9.5	19	15.2	17.1	34.2
Rajasthan	125	22.5	16.25	37.5	7.5	41.25
Utter Pradesh	100	25	20	12	21	22
Total	500	95	100.25	91.9	79.4	133.45

Let ticket price of the movies Benshah, Khuj, Koohi, Roofan and Timi be $3x$, $2x$, $5x$, $3x$ and $6x$ respectively.
Then, number of goers for movie:

$$\text{Benshah} = \frac{95}{3x} = \frac{31.66}{x}; \text{Khuj} = \frac{100.25}{2x} = \frac{50.125}{x}; \text{Koohi} = \frac{91.9}{5x} = \frac{18.38}{x};$$

$$\text{Roofan} = \frac{79.4}{3x} = \frac{26.46}{x} \text{ and } \text{Timi} = \frac{133.45}{6x} = \frac{22.24}{x}$$

Hence, Koohi has the lowest movie goers.

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Directions for questions 41 to 44: Answer the questions on the basis of the information given below.

During a year, seven friends – Anuj, Babli, Charan, Deepak, Eric, Fatah and Geeta visited 7 different Indian cities – Agra, Bhopal, Chennai, Delhi, Jaipur, Kolkata and Mumbai in 7 different months – January, February, March, July, September, November and December.

Following is the additional information given about their visits:

- (i) Anuj, who visited Bhopal, did not visit in March.
- (ii) Geeta, who visited in September, did not visit Chennai.
- (iii) Charan, who visited in December, visited either Jaipur or Mumbai.
- (iv) The person who visited Agra, visited in January while the person who visited in November, did not visit Chennai.
- (v) Babli, who visited Delhi, visited neither in March nor in February.
- (vi) Deepak, who visited in November, did not visit Kolkata.

Q.17 [11831809]

Who visited in the month of February?

1 ☐ Babli

2 ☐ Anuj

3 ☐ Fatah

4 ○ Either (1) or (2)

Solution:

Correct Answer : 2

 Answer key/Solution

From the given information, we get the following table:

Friend	City	Month
Anuj	Bhopal	March X
Babli	Delhi	March/February X
Charan	Jaipur/Mumbai	December
Deepak	Chennai/Kolkata X	November
Eric/Fatah	Agra	January
Fatah/Eric	Chennai	March
Geeta	Chennai X	September

Now, from the table it can be clearly seen that the only month left for Babli is July and hence, the only month left for Anuj is February.

Further, the only cities left for each of Deepak and Charan are Jaipur and Mumbai. Hence, the only city left for Geeta is Kolkata.

Friend	City	Month
Anuj	Bhopal	February
Babli	Delhi	July
Charan	Jaipur/Mumbai	December
Deepak	Mumbai/Jaipur	November
Eric/Fatah	Agra	January
Fatah/Eric	Chennai	March
Geeta	Kolkata	September

Anuj visited in the month of February.

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Directions for questions 41 to 44: Answer the questions on the basis of the information given below.

During a year, seven friends – Anuj, Babli, Charan, Deepak, Eric, Fatah and Geeta visited 7 different Indian cities – Agra, Bhopal, Chennai, Delhi, Jaipur, Kolkata and Mumbai in 7 different months – January, February, March, July, September, November and December.

Following is the additional information given about their visits:

- (i) Anuj, who visited Bhopal, did not visit in March.
- (ii) Geeta, who visited in September, did not visit Chennai.
- (iii) Charan, who visited in December, visited either Jaipur or Mumbai.
- (iv) The person who visited Agra, visited in January while the person who visited in November, did not visit Chennai.
- (v) Babli, who visited Delhi, visited neither in March nor in February.
- (vi) Deepak, who visited in November, did not visit Kolkata.

Q.18 [11831809]

Which city did Deepak visit?

1 ☐ Chennai

2 ☐ Mumbai

3 ☐ Jaipur

4 ☐ Either (2) or (3)

Solution:

Correct Answer : 4

 Answer key/Solution

From the given information, we get the following table:

Friend	City	Month
Anuj	Bhopal	March X
Babli	Delhi	March/February X
Charan	Jaipur/Mumbai	December
Deepak	Chennai/Kolkata X	November
Eric/Fatah	Agra	January
Fatah/Eric	Chennai	March
Geeta	Chennai X	September

Now, from the table it can be clearly seen that the only month left for Babli is July and hence, the only month left for Anuj is February.

Further, the only cities left for each of Deepak and Charan are Jaipur and Mumbai. Hence, the only city left for Geeta is Kolkata.

Friend	City	Month
Anuj	Bhopal	February
Babli	Delhi	July
Charan	Jaipur/Mumbai	December
Deepak	Mumbai/Jaipur	November
Eric/Fatah	Agra	January
Fatah/Eric	Chennai	March
Geeta	Kolkata	September

Deepak visits either Mumbai or Jaipur.

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Directions for questions 41 to 44: Answer the questions on the basis of the information given below.

During a year, seven friends – Anuj, Babli, Charan, Deepak, Eric, Fatah and Geeta visited 7 different Indian cities – Agra, Bhopal, Chennai, Delhi, Jaipur, Kolkata and Mumbai in 7 different months – January, February, March, July, September, November and December.

Following is the additional information given about their visits:

- (i) Anuj, who visited Bhopal, did not visit in March.
- (ii) Geeta, who visited in September, did not visit Chennai.
- (iii) Charan, who visited in December, visited either Jaipur or Mumbai.
- (iv) The person who visited Agra, visited in January while the person who visited in November, did not visit Chennai.
- (v) Babli, who visited Delhi, visited neither in March nor in February.
- (vi) Deepak, who visited in November, did not visit Kolkata.

Q.19 [11831809]

For how many persons is it possible to uniquely determine the city they visited?

Solution:

Correct Answer : 3

 Answer key/Solution

From the given information, we get the following table:

Friend	City	Month
Anuj	Bhopal	March X
Babli	Delhi	March/February X
Charan	Jaipur/Mumbai	December
Deepak	Chennai/Kolkata X	November
Eric/Fatah	Agra	January
Fatah/Eric	Chennai	March
Geeta	Chennai X	September

Now, from the table it can be clearly seen that the only month left for Babli is July and hence, the only month left for Anuj is February.

Further, the only cities left for each of Deepak and Charan are Jaipur and Mumbai. Hence, the only city left for Geeta is Kolkata.

Friend	City	Month
Anuj	Bhopal	February
Babli	Delhi	July
Charan	Jaipur/Mumbai	December
Deepak	Mumbai/Jaipur	November
Eric/Fatah	Agra	January
Fatah/Eric	Chennai	March
Geeta	Kolkata	September

For 3 persons is it possible to uniquely determine the city they visited.

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Directions for questions 41 to 44: Answer the questions on the basis of the information given below.

During a year, seven friends – Anuj, Babli, Charan, Deepak, Eric, Fatah and Geeta visited 7 different Indian cities – Agra, Bhopal, Chennai, Delhi, Jaipur, Kolkata and Mumbai in 7 different months – January, February, March, July, September, November and December.

Following is the additional information given about their visits:

- (i) Anuj, who visited Bhopal, did not visit in March.
- (ii) Geeta, who visited in September, did not visit Chennai.
- (iii) Charan, who visited in December, visited either Jaipur or Mumbai.
- (iv) The person who visited Agra, visited in January while the person who visited in November, did not visit Chennai.
- (v) Babli, who visited Delhi, visited neither in March nor in February.
- (vi) Deepak, who visited in November, did not visit Kolkata.

Q.20 [11831809]

Which of the following persons visited Agra?

1 ☐ Fatah

2 ☐ Either Eric or Fatah

3 ☐ Eric

4 ☐ Geeta

Solution:

Correct Answer : 2

[Answer key/Solution](#)

From the given information, we get the following table:

Friend	City	Month
Anuj	Bhopal	March X
Babli	Delhi	March/February X
Charan	Jaipur/Mumbai	December
Deepak	Chennai/Kolkata X	November
Eric/Fatah	Agra	January
Fatah/Eric	Chennai	March
Geeta	Chennai X	September

Now, from the table it can be clearly seen that the only month left for Babli is July and hence, the only month left for Anuj is February.

Further, the only cities left for each of Deepak and Charan are Jaipur and Mumbai. Hence, the only city left for Geeta is Kolkata.

Friend	City	Month
Anuj	Bhopal	February
Babli	Delhi	July
Charan	Jaipur/Mumbai	December
Deepak	Mumbai/Jaipur	November
Eric/Fatah	Agra	January
Fatah/Eric	Chennai	March
Geeta	Kolkata	September

Either Eric or Fatah visited Agra.

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