

## MBA PIONEER 2024

## Data Interpretation &amp; Logical Reasoning

DPP:03

## Missing Data

**Directions (1-5) Read the following passage and answer the given questions.**

The following table shows the marks obtained by four students Amal, Bimal, Chandan, and Deepak in English and Hindi.

	English	Hindi
Amal	45	
Bimal		50
Chandan	44	
Deepak		46

It is also known that :

- (1) The ratio of the marks obtained by Amal in English and Hindi are in the ratio of 9: 11 respectively.
- (2) The ratio of the marks obtained by Bimal in English and Hindi are in the ratio of 4: 5 respectively.
- (3) The ratio of the marks obtained by Chandan in English and Hindi are in the ratio of 11: 13 respectively.
- (4) The ratio of the marks obtained by Deepak in English and Hindi is 22: 23 respectively.

**Q1** What is the total score of Amal in English and Hindi?

**Q2** What is the difference of marks obtained by Chandan and Amal in Hindi?

**Q3** What is the difference of marks obtained by Bimal and Deepak in English?

**Q4** What is the sum of the marks scored by Bimal and Deepak in English?

**Q5** What is the average of the marks obtained by all students in Hindi?  
 (A) 51.25 (B) 49.50  
 (C) 50.75 (D) 51.75

**Directions (6-10) Read the following passage and answer the given questions.**

The table shows the number of different chocolates in four different shops.

Shops	Dairy Milk	5 Star	Kit-Kat
A	20		15
B		25	
C	45		20
D		15	25

**Q6** If the average number of Kit-kat chocolate in these four shops is 25, the number of Dairy milk in shop B is equal to number of Kit-kat chocolates in shop B and the ratio of number of Dairy milk chocolates in shop B to D is 8 : 7 then the number of Dairy milk chocolates in shop D.  
 (A) 30 (B) 40  
 (C) 35 (D) 45



- Q7** If the average number of Kitkat chocolate in these four shops is 25, the number of Dairy milk in shop B is equal to number of Kitkat chocolates in shop B, and the ratio of number of Dairy milk chocolates in shop B to D is 8 : 7 then find the average number of Dairy milk chocolates at these four shops
- (A) 30 (B) 35  
(C) 40 (D) 45

- Q8** If the total number of 5 star chocolates at all four shops is 85 and the ratio of 5 star chocolates at shops A and C is 5 : 4. Find the average number of 5 star chocolates at shop A, C, D.
- (A) 15 (B) 20  
(C) 25 (D) 30

- Q9** If the number of 5 star chocolates at shop A lies between  $15 \leq (5 \text{ star})_A \leq 28$ . What could be the max possible value of 5 star chocolate at C if total 5 star chocolates is 98 and 5 star chocolates at C lies between  $26 \leq (5 \text{ star})_C \leq 32$ .
- (A) 31 (B) 32  
(C) 33 (D) 34

- Q10** If the total number of chocolates at shop B is 78 then what could be the possible ratio of Dairy milk chocolate and Kitkat chocolate at shop B.
- (A) 32 : 21  
(B) 24 : 29  
(C) Both (a) and (b)  
(D) None of these

**Directions (11-15) Read the following passage and answer the given questions.**

In the following table data about the amount invested by a person, rate of interest time, and amount is given.

Persons	Time (in years)	Rate of Interest	Principal
Anjali	6		14000
Barsha	4		18000
Charu		14%	25500
Divya	2	15%	
Ekta	9	12%	

Note : One has to calculate SI until and unless one is directed to calculate the CI.

- Q11** If the ratio of the rate of interest received by Barsha and Charu is 3 : 7 and the ratio of time between Barsha and Charu is 2 : 3 then the difference in the amount received by Charu and Barsha will be.
- Q12** If the principal amount invested by Divya and Ekta is same then the ratio of amount received by them will be :
- (A) 5 : 8 (B) 5 : 7  
(C) 8 : 7 (D) 8 : 11
- Q13** If the rate of interest received by Anjali and Barsha is same then the ratio of the amount received by them respectively will be :
- (A) 5 : 8  
(B) 7 : 6  
(C) 2 : 5  
(D) Can't be determined
- Q14** What is the interest earned by Divya if the principal amount invested by her is 50% less than Charu.
- (A) 3800 (B) 3700  
(C) 3825 (D) 3870
- Q15** If the interest earned by Anjali and Barsha is same then the possible ratio of the rate of interest received by them will be?
- (A) 6 : 7 (B) 6 : 11  
(C) 6 : 13 (D) 6 : 17

**Directions (16-20) Read the following passage and answer the given questions.**



The given table shows the number of students in four different departments in four different subjects.

Department	Marketing				Total
	Services	Digital	Luxury	Analytics	
P	-	110	-	150	-
Q	120	-	70	-	400
R	-	130	110	-	480
S	90	140	-	100	-
Total	500	-	-	500	

- Q16** If the ratio of the number of students of services marketing from P to R is 18 : 11, find the number of Marketing Analytics from R?
- Q17** Total number of Digital marketing students from all the colleges together is 470, then what is the number of Marketing Analytic students from department Q?
- Q18** If the ratio of the number of Marketing Analytics students from Q to R is 12 : 13, what is the number of Services Marketing students from R?
- Q19** If the ratio of the total number of students from department A and the total number of Marketing Analytics students from all the departments together is 26 : 25. The number of Luxury Marketing from department R is approximately what percent of the total number of students from department A all the subjects together? (only numerical value)
- Q20** The number of student in Luxury Marketing from department P is two-third of the students from department S in Luxury Marketing. The total number of students in Luxury Marketing form all departments is 380. Find the number of

students in Luxury Marketing form department P?

**Directions (21-25)** Read the following passage and answer the given questions.

Below table shows the number of three different furniture items (table, chair and Almirah) manufactured by a company in five weeks.

	Total number of furniture items manufactured	Percentage of tables manufactured out of total items	Percentage of chairs manufactured out of total items	Percentage of Almirah manufactured out of total items
Week 1	300	...	10	60
Week 2	400	60	-	20
Week 3	-	30	20	-
Week 4	200	-	30	40
Week 5	-	50	-	20

**Note:** Some of the data in the above table is missing (shown as blanks).

- Q21** If the number of almirahs manufactured in week 3 is 20 more than that of in week 2, what is the respective ratio of the number of tables manufactured in week 3 and week 4 to the number of chairs manufactured in week 1 and week 2?  
(A) 12 : 13 (B) 13 : 12  
(C) 11 : 13 (D) 12 : 11
- Q22** The number of chairs manufactured in week 4 is 20 less than that of in week 3. The number of almirah manufactured in week 2 and week 4 together is what percentage of the number of tables manufactured in week 1 and week 3 together?  
(A) 76.19% (B) 37.49%  
(C) 38.39% (D) 95.38%
- Q23** If the number of almirahs manufactured in week 5 is 60. What is the difference between the total number of chairs manufactured in week 4 and week 5 together and the total number of tables manufactured in week 2 and week 4 together?



- (A) 120 (B) 130  
(C) 140 (D) 150

**Q24** If the number of tables manufactured in week 5 is 25. The number of almirah manufactured in week 5 is what percentage more or less than the number of chairs manufactured in week 2?

- (A) 84.3% (B) 67.2%  
(C) 87.5% (D) 73.5%

**Q25** What is the average number of tables manufactured by the company in week 1, week 2, and week 4 together?

- (A) 120 (B) 130  
(C) 140 (D) 150

**Directions (26–30) Read the following passage and answer the given questions.**

Ankit, Bishno, Chaman, Damodar, Ethan, Finn, and Gaurav are seven people in a city. Any pair of them could either be unfamiliar, also called strangers or they can be friends, or they can be acquaintances. Every relationship is mutual. For instance, if Ankit is friends with Bishno, then Bishno is also friends with Ankit. Similarly, if Ankit is unfamiliar or a stranger to Bishno, then Bishno is unfamiliar or a stranger to Ankit. The table below provides partial information about each of these people's number of friends, acquaintances, and strangers.

	No. of Friends	No. of Acquaintances	No. of Strangers
Ankit		1	4
Bishno			
Chaman		1	
Damodar			2
Ethan			1
Finn	1		
Gaurav		3	2

The following additional facts are also known.

1. Ankit, Bishno, and Chaman are mutual strangers.
2. Ankit, Damodar, and Finn are Ethan's friends.
3. Chaman and Gaurav are friends.
3. Every friend of Ankit is an acquaintance of Bishno, and every acquaintance of Bishno is a friend of Ankit.
4. Every friend of Bishno is an acquaintance of Ankit, and every acquaintance of Ankit is a friend of Bishno.

**Q26** Who are Gaurav's acquaintances?

- (A) Ankit, Bishno and Finn  
(B) Damodar, Ethan and Finn  
(C) Ankit, Damodar and Finn  
(D) Bishno, Damodar and Ethan

**Q27** Which of these pairs share the same type of relationship?

- (A) (Bishno, Chaman) and (Damodar, Ethan)  
(B) (Chaman, Ethan) and (Damodar, Gaurav)  
(C) (Ankit, Gaurav) and (Ethan, Finn)  
(D) (Bishno, Ethan) and (Finn, Gaurav)

**Q28** Who is an acquaintance of Ankit?

- (A) Damodar (B) Finn  
(C) Ethan (D) Gaurav

**Q29** Who is an acquaintance of Chaman?

- (A) Ethan (B) Bishno  
(C) Finn (D) Damodar

**Q30** How many friends does Ethan have?



## Answer Key

Q1 100  
Q2 3  
Q3 4  
Q4 84  
Q5 (C)  
Q6 (C)  
Q7 (B)  
Q8 (B)  
Q9 (B)  
Q10 (C)  
Q11 24600  
Q12 (A)  
Q13 (D)  
Q14 (C)  
Q15 (A)

Q16 130  
Q17 120  
Q18 110  
Q19 21  
Q20 80  
Q21 (D)  
Q22 (A)  
Q23 (D)  
Q24 (C)  
Q25 (B)  
Q26 (B)  
Q27 (D)  
Q28 (A)  
Q29 (C)  
Q30 3



## Hints & Solutions

### Q1. Text Solution:

#### Topic: Tables

The ratio of marks obtained by Amal in English and Hindi is 9 : 11. So,  $9x = 45$

$$x = 5$$

$$11x = 11 \times 5 = 55 \text{ Marks (Hindi)}$$

The ratio of marks obtained by Bimal in English and Hindi is 4 : 5

$$\text{So, } 5y = 50$$

$$y = 10$$

$$4y = 40$$

For Chandan:

$$\text{English : Hindi} = 11 : 13$$

$$11z = 44$$

$$z = 4$$

$$13z = 52$$

For Deepak:

$$\text{English : Hindi} = 22 : 23$$

$$23a = 46$$

$$a = 2$$

$$22a = 44$$

	English	Hindi
Amal	45	55
Bimal	40	50
Chandan	44	52

	English	Hindi
Deepak	44	46

$$\text{Total sum} = 45 + 55 = 100$$

100 is the correct answer.

### Q2. Text Solution:

#### Topic: Tables

	English	Hindi
Amal	45	55
Bimal	40	50
Chandan	44	52
Deepak	44	46

$$\text{Required difference} = 55 - 52 = 3$$

3 is the correct answer.

### Q3. Text Solution:

#### Topic: Tables

	English	Hindi
Amal	45	55
Bimal	40	50



al		
C		
h		
a	4	52
n	4	
d		
a		
n		
D		
e		
e	4	46
p	4	
a		
k		

Required difference =  $44 - 40 = 4$

4 is the correct answer.

**Q4. Text Solution:**

**Topic: Tables**

	E	Hi
	n	nd
	gl	i
	is	
	h	
A	4	55
m	5	
al		
Bi	4	50
m	0	
al		
C		
h		
a	4	52
n	4	
d		
a		
n		
D		
e		
e	4	46
p	4	
a		
k		

Required sum =  $40 + 44 = 84$

84 is the correct answer.

**Q5. Text Solution:**

**Topic: Tables**

	E	Hi
	n	nd
	gl	i
	is	
	h	
A	4	55
m	5	
al		
Bi	4	50
m	0	
al		
C		
h		
a	4	52
n	4	
d		
a		
n		
D		
e		
e	4	46
p	4	
a		
k		

Required average =  $\frac{55+50+52+46}{4} = 50.75$

The answer is option C.

**Q6. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**

(Dairy Milk)<sub>B</sub>, This can be read as number of Dairy milk chocolates at shop B.

Average number of Kitkat chocolates in all four shops = 25

$$15 + a + 20 + 25 = 25 \times 4$$

$$a + 60 = 100$$

$$a = 40$$

$$(\text{Dairy Milk})_B = (\text{Kit-kat})_B = 40$$

$$(\text{Dairy Milk})_B : (\text{Dairy milk})_D$$



$$\frac{8}{7} = \frac{40}{x}$$

$$x = 35$$

Shop D has 35 Dairy milk chocolates.

The answer is option C.

**Q7. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**

Dairy milk chocolates at shop B.

Average number of Kitkat chocolates in all four shops = 25

$$15 + a + 20 + 25 = 25 \times 4$$

$$a + 60 = 100$$

$$a = 40$$

$$(\text{Dairy Milk})_B = (\text{Kit-kat})_B = 40$$

$$(\text{Dairy Milk})_B : (\text{Dairy milk})_D$$

$$\frac{8}{7} = \frac{40}{x}$$

$$x = 35$$

Shop D has 35 Dairy milk chocolates.

$$\text{Required Average} = \frac{20 + 40 + 45 + 35}{4}$$

$$= 35$$

The answer is option B.

**Q8. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**

Let the number of 5-star chocolates at A and C is  $5x$  and  $4x$ .

$$5x + 4x + 25 + 15 = 85$$

$$9x + 40 = 85$$

$$9x = 45$$

$$x = 5$$

$$A = 5x = 5 \times 5 = 25$$

$$C = 4x = 4 \times 5 = 20$$

$$\text{Average} = \frac{A + C + D}{3} = \frac{25 + 20 + 15}{3}$$

$$= 20$$

The answer is option B.

**Q9. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**

Let 5 star at shop A and C is 'a' and 'c' respectively.

$$a + 25 + c + 15 = 98$$

$$a + c = 58$$

Max value of c is 32. So, a will be

$$a + 32 = 58$$

$$\Rightarrow a = 58 - 32 = 26$$

The answer is option B.

**Q10. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**

Let the number of Dairy milk and KitKat chocolate at shop B is x and y.

$$x + 25 + y = 78$$

$$\Rightarrow x + y = 78 - 25$$

$$\Rightarrow x + y = 53$$

Both (a) and (b) are possible because their sum is equal to 53.

The answer is option C.

**Q11. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**

Time for Charu =  $4 \times \frac{3}{2} = 6$  years

Rate of interest for Barsha =  $\frac{3}{7} \times 14 = 6\%$

Amount received by Barsha

$$= \frac{18000 \times 4 \times 6}{100} + 18000 = 22320 \text{ Rs.}$$

Amount received by Charu =

$$25500 + \frac{25500 \times 14 \times 6}{100}$$

= Rs. 46920

Required difference = 46920 - 22320

= 24600 Rs.

**Q12. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**

Let the principal be x.





$$\begin{aligned}\text{Required ratio} &= \frac{x + \frac{x \times 2 \times 15}{100}}{x + \frac{x \times 9 \times 12}{100}} \\ &\Rightarrow \frac{\frac{130x}{100}}{\frac{208}{100}} \Rightarrow \frac{130}{208} = \frac{65}{104} \\ &\Rightarrow 5 : 8\end{aligned}$$

The answer is option A.

**Q13. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**

Let the rate be  $r\%$

$$\begin{aligned}\text{Required ratio} &= \frac{14000 + \frac{14000 \times r \times 6}{100}}{18000 + \frac{18000 \times r \times 4}{100}} \\ &\Rightarrow \frac{14000 + 840r}{18000 + 720r}\end{aligned}$$

at different value of  $r$  we have different ratios.

So, it cannot be uniquely determined.

The answer is option D.

**Q14. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**

Principal amount invested by Divya

$$\begin{aligned}&\Rightarrow 50\% \text{ of } 25500 \\ &\Rightarrow 12750\end{aligned}$$

$$\begin{aligned}\text{Interest earned} &= 12750 \times \frac{15 \times 2}{100} \\ &\Rightarrow 3825\end{aligned}$$

The answer is option C.

**Q15. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**

Interest earned by them are equal.

$$\begin{aligned}\frac{6 \times R_1 \times 14000}{100} &= \frac{4 \times R_2 \times 18000}{100} \\ &\Rightarrow \frac{R_1}{R_2} \Rightarrow \frac{18000 \times 4}{14000 \times 6} \\ &\Rightarrow \frac{R_1}{R_2} = \frac{9}{7} \times \frac{2}{3} = \frac{6}{7}\end{aligned}$$

The answer is option A.

**Q16. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**

Total number of students in services marketing = 500

Number of students from P and R =  $500 - (120 + 90)$

$$= 500 - 210$$

$$= 290$$

Number of students in services marketing from

$$\text{department R} = \frac{11}{29} \times 2960 = 110$$

Number of students in marketing analytics from

$$\text{department R} = 480 - (110 + 130 + 110)$$

$$= 480 - 350$$

$$= 130$$

**Q17. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**

Number of students in Digital marketing from Q

$$= 470 - (110 + 130 + 140)$$

$$= 470 - 380$$

$$= 90$$

Number of marketing analytics students from

$$\text{department Q} = 400 - (120 + 90 + 70)$$

$$= 400 - 280$$

$$= 120$$

**Q18. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**

Number of marketing analytics students from Q

$$\text{and R} = 500 - (150 + 100)$$

$$= 500 - 250 = 250$$

Number of students in marketing analytics from

$$\text{R} = \frac{13}{25} \times 250 = 130$$

Number of services marketing students from R =

$$480 - (130 + 110 + 130)$$

$$= 480 - 370$$

$$= 110$$

**Q19. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**



Total number of students from the department

$$A = \frac{26}{25} = \frac{x}{500}$$

$$x = 520$$

$$\begin{aligned}\text{Required percentage} &= \frac{110}{520} \times 100 \\ &= 21.15\% = 21\% \text{ (approx.)}\end{aligned}$$

**Q20. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**

Number of students in Luxury marketing from departments P and S =  $380 - (70 + 110)$

$$= 380 - 180$$

$$= 200$$

According to the question,

$$\frac{(\text{Student in luxury marketing})_P}{(\text{Student in luxury marketing})_S} = \frac{2}{3}$$

$$2x + 3x = 200$$

$$5x = 200$$

$$x = 40$$

$$2x = 2 \times 40$$

$$= 80$$

**Q21. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**

From the given table:

The number of almira manufactured in week 3

$$= 20 + \frac{20}{100} \times 400 = 100$$

The number of tables manufactured in week 3 and week 4

$$= 100 \times \frac{30\%}{50\%} + 200 \times \frac{30}{100} = 120$$

The number of chairs manufactured in week 1 and week 2

$$= 300 \times \frac{10}{100} + 400 \times \frac{20}{100} = 110$$

So, required ratio =  $120 : 110$

$$= 12 : 11$$

The answer is option D.

**Q22. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**

From the given table:

The number of chairs manufactured in week 3

$$= 20 + 200 \times \frac{30}{100} = 80$$

The number of almira manufactured in week 2 and week 4 together

$$= 400 \times \frac{20}{100} + 200 \times \frac{40}{100} = 160$$

The number of tables manufactured in week 1 and week 3 together

$$= 300 \times \frac{30}{100} + 80 \times \frac{30\%}{20\%} = 210$$

$$\begin{aligned}\text{So, required percentage} \\ &= \frac{160}{210} \times 100 = 76.19\%\end{aligned}$$

The answer is option A.

**Q23. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**

The number of chairs manufactured in week 4 and week 5 together

$$= 200 \times \frac{30}{100} + 60 \times \frac{30\%}{20\%} = 150$$

The number of tables manufactured in week 2 and week 4 together

$$= 400 \times \frac{60}{100} + 200 \times \frac{30}{100} = 300$$

$$\text{Required difference} = 300 - 150 = 150.$$

The answer is option D.

**Q24. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**

From the given table:

The number of almira manufactured in week 5

$$= 25 \times \frac{20}{50} = 10$$



The number of chairs manufactured in week 2

$$= 400 \times \frac{20}{100} = 80$$

$$\text{So, required \%} = \frac{80-10}{80} \times 100 = 87.5\%$$

The answer is option C.

**Q25. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**

The number of tables manufactured by the company in week 1

$$= 300 \times \frac{30}{100} = 90$$

The number of tables manufactured by the company in week 2

$$= 400 \times \frac{60}{100} = 240$$

The number of tables manufactured by the company in week 4

$$= 200 \times \frac{30}{100} = 60$$

$$\text{Required average} = \frac{90+240+60}{3} = 130$$

The answer is option B.

**Q26. Text Solution:**

**Topic: Tables**

**Sub Topic: Tables with Missing Values**

Let us represent them by their first alphabet in short terms as A, B, C, D, E, F and G to make it easy while filling the table.

Since A, B, and C are mutual strangers, (B, C) are strangers for A, (A, C) are strangers for B, and (A, B) are strangers for C.

Since the total number of strangers + acquaintances + friends for any among the 7 is 6.

The number of friends Ankit has is 1, and the number of friends for Gaurav is 1.

Using statement 3: Chaman and Gaurav are friends.

Using statement 2: Ankit, Damodar, and Finn are Ethan's friends. Similarly, Ethan is a friend of Ankit, Damodar, and Finn.

Using statement 4 Every friend of Bishno is an acquaintance of Ankit, and every acquaintance of Ankit is a friend of Bishno, Hence the number of acquaintances of Bishno is equal to the number of friends of Ankit.

Using statement 5 Every friend of Ankit is an acquaintance of Bishno, and every acquaintance of Bishno is a friend of Ankit, Hence the number of acquaintances of Ankit is equal to the number of friends of Bishno.

Hence Bishno has one friend, 1 Acquaintance, and 4 strangers.

For Ankit we are yet to find a relationship with Damodar, Finn, and Gaurav. Any among the three can be a stranger to Ankit, considering the three different cases.

**Case 1:**

Considering Finn as an acquaintance of Ankit, then Damodar and Gaurav are strangers to Ankit.

Every acquaintance of Ankit is a friend of Bishno and since the friend and acquaintance of Bishno are known the strangers are found for Bishno.

Finn is an acquaintance of Ankit, hence Ankit is an Acquaintance of Finn, Finn is a friend of Bishno and hence Bishno is a friend of Finn. But Finn has only one friend and Ethan is already a friend of Finn.

Thus this case fails.

	No. of Friends	No. of Acquaintances	No. of Strangers
Ankit	1(E)	1(F)	4(B,C,D,G)
Bishno	1(F)	1(E)	4(A,C,D,G)
Chaman	G	1	(A,B)
Damodar	E		2
Ethan	A,D,F		1
Finn	1(E)		
Gaurav	1(C)	3	2



**Case 2:**

Considering Gaurav as an acquaintance of Ankit, then Damodar and Finn are strangers to Ankit.

Every acquaintance of Ankit is a friend of Bishno and since the friend and acquaintance of Bishno are known the strangers are found for Bishno. Since Gaurav is a friend of Bishno, Bishno must be a friend of Gaurav. But Gaurav can only have one friend and it is already mentioned that Chaman is a friend of Gaurav and hence this case fails.

	No. of Friends	No. of Acquaintances	No. of Strangers
Ankit	1(E)	1(G)	4(B,C,D,F)
Bishno	1(G)	1(E)	4(A,C,D,F)
Chaman	G	1	(A,B)
Damodar	E		2
Ethan	A,D,F		1
Finn	1(E)		
Gaurav	1(C)	3	2

**Case 3:**

Considering Damodar as an acquaintance of Ankit, then Finn and Gaurav are strangers to Ankit.

Every acquaintance of Ankit is a friend of Bishno and since the friend and acquaintance of Bishno are known the strangers are found for Bishno.

Since Finn, Gaurav is a stranger to Ankit, Bishno. Ankit and Bishno are strangers to Finn and Gaurav.

The 2 strangers to Gaurav and his only friend are known. Hence his three acquaintances are (Damodar, Ethan, and Finn).

Hence Gaurav is an acquaintance of Damodar, Ethan, and Finn.

Damodar is an acquaintance of Ankit and hence Ankit must be an acquaintance of Damodar.

Damodar is a friend of Bishno and hence Bishno is a friend of Damodar.

	No. of Friends	No. of Acquaintances	No. of Strangers
Ankit	1(E)	1(D)	4(B,C,F,G)
Bishno	1(D)	1(E)	4(A,C,F,G)
Chaman	G	1	(A,B)
Damodar	E,B	G,A	2
Ethan	A,D,F	G	1
Finn	1(E)	G	A,B
Gaurav	1(C)	3(D,E,F)	2(A,B)

Ethan is an acquaintance of Bishno and hence Bishno is an acquaintance of Ethan. The only stranger to Ethan who is left is Chaman. Hence Ethan is a stranger to Chaman.

The two strangers to Damodar who are left are Chaman and Finn. Chaman is a stranger to Damodar and hence Damodar is a stranger to Chaman.

The only acquaintance of Chaman who is left is Finn.

The remaining relationships with Finn are between Damodar and Chaman. Damodar is a stranger to Finn and Chaman is an acquaintance of Finn.

	No. of Friends	No. of Acquaintances	No. of Strangers
Ankit	1(E)	1(D)	4(B,C,F,G)
Bishno	1(D)	1(E)	4(A,C,F,G)
Chaman	1(G)	1(F)	4(A,B,E,D)
Damodar	2(E,B)	2(G,A)	2(C,F)
Ethan	3(A,D,F)	2(G,B)	1(C)
Finn	1(E)	2(G,C)	A3(A,B,D)
Gaurav	1(C)	3(D,E,F)	2(A,B)

Hence, from the above table

Gaurav's acquaintances are Damodar, Bishno, and Finn.

**Q27. Text Solution:**

**Topic: Tables**



**Sub Topic: Tables with Missing Values**

	No. of Friends	No. of Acquaintances	No. of Strangers
Ankit	1(E)	1(D)	4(B,C,F,G)
Bishno	1(D)	1(E)	4(A,C,F,G)
Chaman	1(G)	1(F)	4(A,B,E,D)
Damodar	2(E,B)	2(G,A)	2(C,F)
Ethan	3(A,D,F)	2(G,B)	1(C)
Finn	1(E)	2(G,C)	A3(A,B,D)
Gaurav	1(C)	3(D,E,F)	2(A,B)

Bishno and Ethan are acquaintances, Finn and Gaurav are acquaintances.

**Q28. Text Solution:****Topic: Tables****Sub Topic: Tables with Missing Values**

	No. of Friends	No. of Acquaintances	No. of Strangers
Ankit	1(E)	1(D)	4(B,C,F,G)
Bishno	1(D)	1(E)	4(A,C,F,G)
Chaman	1(G)	1(F)	4(A,B,E,D)
Damodar	2(E,B)	2(G,A)	2(C,F)
Ethan	3(A,D,F)	2(G,B)	1(C)
Finn	1(E)	2(G,C)	A3(A,B,D)
Gaurav	1(C)	3(D,E,F)	2(A,B)

Acquaintance of Ankit is Damodar.

**Q29. Text Solution:****Topic: Tables****Sub Topic: Tables with Missing Values**

	No. of Friends	No. of Acquaintances	No. of Strangers
Ankit	1(E)	1(D)	4(B,C,F,G)
Bishno	1(D)	1(E)	4(A,C,F,G)
Chaman	1(G)	1(F)	4(A,B,E,D)
Damodar	2(E,B)	2(G,A)	2(C,F)
Ethan	3(A,D,F)	2(G,B)	1(C)
Finn	1(E)	2(G,C)	A3(A,B,D)
Gaurav	1(C)	3(D,E,F)	2(A,B)

Finn is an acquaintance of Chaman.

**Q30. Text Solution:****Topic: Tables****Sub Topic: Tables with Missing Values**

	No. of Friends	No. of Acquaintances	No. of Strangers
Ankit	1(E)	1(D)	4(B,C,F,G)
Bishno	1(D)	1(E)	4(A,C,F,G)
Chaman	1(G)	1(F)	4(A,B,E,D)
Damodar	2(E,B)	2(G,A)	2(C,F)
Ethan	3(A,D,F)	2(G,B)	1(C)
Finn	1(E)	2(G,C)	A3(A,B,D)
Gaurav	1(C)	3(D,E,F)	2(A,B)

Ethan has a total of 3 friends.

