Missing DI Tricks & Tips

Now days, Missing Data Interpretation questions is asked frequently in exams. These involve tabular DI questions where certain fields are missing data. Students are required to either find out what these missing blanks stand for, or try to work around them and answer questions. But most students consider these the toughest questions precisely because they don't know which approach to take.
Remember that DI questions will give you easy marks. This fear of Missing Data Interpretation questions is only a mental fear. All we have to do is do one extra calculation only to find the missing data.

Let us understand it with an example.

Example of Missing Data Interpretation Questions

Directions: Some data is missing in the table given. Calculate the missing data and solve the questions based on the table.
The table given below shows the total revenue (in Rs. Millions) generated by six different super stores and the percentage contribution of different categories of products – Packed Food, Health Care, Cosmetics, Electronics, Stationery and Garments – in the respective total revenue generated by the six super stores.
Total Revenue generated by all the six super stores = Rs. 125 millions

Super Store	Total Revenue Generated (in Rs. Millions)	Percentage contribution in Total Revenue generated					
		Packed Food	Health Care	Cosmetics	Electronics	Stationery	Garments
Small Bazar	45	10	....	35	10	5	15
Hypomart	10	.....	30	25	15	5	10
Toughday	5	25	30	5	10	....	20
Less4More	20	30	20	....	10	10	5
Kubhiksha	....	10	20	15	....	10	10
Alliance	20	20	10	5	15	25	.....

Q1. What is the percentage contribution of stationery products in the Total Revenue generated by the six super stores together?
(a) 10.75% (b) 10.8% (c) 10.5% (d) 10% (e) 10.2%
Ans: (e)
Solution:
Here we can see that, some data are missing. But the trick is that it only looks like data is missing. In reality, all the data are already there; they are just hidden.
For example, in the table, how much revenue Kubhiksha generated is not given. But they have given total revenue and revenue of all other stores, so we can easily find the revenue generated by Kubhiksha by subtracting all the other stores' revenues from total revenue.
Similarly, this is the case for Percentage Contributions also.
Since, total revenue generated for every company is 100%, so we can easily fill in the missing data. All we need to take care of is whether we have to calculate vertically or horizontally.
We can do this by entering an extra column and extra row at the right and bottom respectively. The bottom row will tell us the total revenue generated by all the stores. The column on the right tells us at the total percentage contributions of every segment add up to 100% for each store.

Super Store	Total Revenue Generated (in Rs. Millions)	Percentage contribution in Total Revenue generated						
		Packed Food	Health Care	Cosmetics	Electronics	Stationery	Garments	**TOTAL**
Small Bazar	45	10	....	35	10	5	15	**100**
Hypomart	10	....	30	25	15	5	10	**100**
Toughday	5	25	30	5	10	....	20	**100**
Less4More	20	30	20	....	10	10	5	**100**
Kubhiksha	....	10	20	15	....	10	10	**100**
Alliance	20	20	10	5	15	25	....	**100**
TOTAL	**125**	**X**	**X**	**X**	**X**	**X**	**X**	**X**

Note: Do not waste time adding up quantities that are not related. Since we are talking about percentage contribution, each segment will not add up for different stores. That is, it is meaningless if you add up the Packed Food percentage contributions for different stores.

Filling in the missing data from the given information

Super Store	Total Revenue Generated (in Rs. Millions)	Percentage contribution in Total Revenue generated						
		Packed Food	Health Care	Cosmetics	Electronics	Stationery	Garments	TOTAL
Small Bazar	45	10	25	35	10	5	15	**100**
Hypomart	10	15	30	25	15	5	10	**100**
Toughday	5	25	30	5	10	10	20	**100**
Less4More	20	30	20	25	10	10	5	**100**
Kubhiksha	25	10	20	15	35	10	10	**100**
Alliance	20	20	10	5	15	25	25	**100**
TOTAL	**125**	**X**	**X**	**X**	**X**	**X**	**X**	**X**

Now the table has become fully filled, like you want. See how easy it was? These questions are just like the other simple tabulation problems with some extra calculations added.

Now, Let us solve a problem.

General formula:

$$Generated\ Revenue\ (Sector) = \frac{Contribution\ \%}{100} \times Total\ Revenue\ Generated$$

Super Store	Total Revenue Generated (in Rs. Millions)	Contribution in Total Revenue generated (in Rs Millions)					
		Packed Food	Health Care	Cosmetics	Electronics	Stationery	Garments
Small Bazar	45	4.5	11.25	15.75	4.5	2.25	6.75
Hypomart	10	1.5	3	2.5	1.5	0.5	1
Toughday	5	1.25	1.5	0.25	0.5	0.5	1
Less4More	20	6	4	5	2	2	1
Kubhiksha	25	2.5	5	3.75	8.75	2.5	2.5
Alliance	20	4	2	1	3	5	5
Total	125	19.75	26.75	28.25	20.25	12.75	17.25

First we must individually calculate the contributions of different sectors in each company's total revenue. Once you have all the contributions from different companies towards a particular sector, you can find the contribution of that sector in the total revenue generated (Rs. 125 million, in this case).
Hence percentage contribution of stationery products in the total revenue generated by the six super stores together = (12.75/125) × 100 = 10.2 %

Note: Here we have shown the individual revenues of each sector from every store. But in the exam, do not sit and calculate everything. First read what is asked, figure out what all data you will need to know for that, and then calculate only the required ones.

Important Point on Missing Table Chart

- Understanding the various condition of **Missing DI table** is very important.
- Try to **find relation between data in missing D.I** on the basis of condition.
- **Most cases in missing D.I.** you can fill all missing data by the help of given data.
- Missing **D.I. question solving** helps to solving some other questions.
- Don't try to use **short tricks** on Missing D.I question.

To make the **chapter easy for you all,** we are providing you **how to Solve Missing Table Questions in DI** and explain with the help of example. Here we are explaining two types of Missing D.I question with explanation.

Type 1 – Missing D.I Sample Question

Direction 1-4) Study the following table carefully and answers the following questions carefully.
Details of various items sold by Shop keeper.

Name of Item	Cost Price	Profit%	Markup%	Selling Price
Wheat	**800**	**-**	**20**	**-**
Rice	**-**	**-**	**-**	**600**
Oil	**160**			**192**

1. If shopkeeper earns 5% profit on Wheat then what percent discount allowed by shop keeper?
   (1) 12.5% (2) 15% (3) 18% (4) 10% (5) None of these

Note :- In this type of question you can approach two types
(1). Fill all blank space given in table
(2). According to question try to solve because many blank space in this table.

Explanation:- In this question we have **cost price and profit%** on the basis of given values easily find out the **discount %**
Markup price of Wheat = (800*20)/100 = 160 → 800+160 = 960
5% profit means selling price is = 840
Required discount % = (960 – 840)/960 = 12.5%

2. What percentage of profit earn by the shopkeeper on oil?
   (1) 15% (2) 25% (3) 20% (4) 18% (5) None of these

Explanation:- Here we have cost & selling price of oil so easily can find percentage values of profit
Required profit % = (192-160)/160 = 20%

3. If shopkeeper allowed 10% discount on mark price of Wheat then what is the selling price of the Wheat?
   (1) Rs. 875 (2) Rs. 864 (3) Rs. 892 (4) Rs. 882 (5) None of these

Explanation:- In this question we have **cost price and markup%** on the basis of given values easily find out the **selling price.**
Mark price of Wheat = 960
After allowing 10% discount = (960*10)/100 = 96
Selling price of the Wheat = 960 -96 = 864

4. If shopkeeper Face 20% loss on Rice then what is cost price of the Rice?
   (1) Rs. 750 (2) Rs. 580 (3) Rs. 700 (4) Rs. 620 (5) None of these

Explanation:- In this question we have **selling price and loss%** on the basis of given values easily find out the **cost price.**
Cost price of Rice = (600*80)/100 = 750

Type 2- Missing D.I Sample Question

Directions (5-8): In the following questions information about number of candidates interviewed by five public banks on different working days has been provided. You are required to read the table carefully and answer the questions given below:

Number of candidates interviewed by five banks on different working days

	Banks				
Working Day	**PNB**	**BOI**	**IDBI**	**ICICI**	**AXIS**
Monday	17	18	23	25	18
Tuesday	21	-	14	28	25
Wednesday	23	22	23	-	18
Friday	10	10	-	15	22
Saturday	17	26	20	20	24
Total	112	109	108	123	125

Note:- In this type of question **before proceeding to the question**, our aim should be to find the **missing values** because very less number of **missing space**.

Missing Values in PNB = [112- (17+21+23+10+17)] = 24
Missing Values in BOI = [109- (18+22+14+10+26)] = 19
Missing Values in IDBI = [108- (23+14+23+12+20)] = 16
Missing Values in ICICI = [123- (25+28+23+15+20)] = 12

5. What is the respective ratio between the number of candidates interviewed by ICICI banks on Friday and Saturday together and that of candidates interviewed by BOI banks on the same day?
   (1) 35:38 (2) 39:40 (3) 43:44 (4) 45:46 (5) None of these

Explanation:-
Required Ratio = (15+20) :(10+26) = 35 : 36

6. The number of candidates interviewed by IDBI bank on Wednesday is what per cent of total number of candidates interviewed by all banks on the same day
   (1) 26.65 (2) 23.45 (3) 28.45 (4) 24.35 (5) None of these

Explanation:-
Required percentage = {23/98 * 100} = 23.45

7. What is the number of candidates interviewed by all banks on Tuesday?
   (1) 101 (2) 108 (3) 104 (4) 107 (5) None of these

Explanation:-
Required number = (21+19+14+28+25) = 107

8. By Approximate what per cent the number of candidates interviewed by ICICI bank on Thursday increased with respect to that of interviewed on previous day?
   (1) 80% (2) 96% (3) 88% (4) 92% (5) None of these

Explanation:-
Required percentage = (23-12)/12 * 100 = 91.66%

Example Question:

Directions (1 – 6): Read the following table carefully and answer the questions given below it.
Data related to number of employees who joined (**Jo**) and left (**Le**) five given companies **A, B, C, D** and **E** during the given years.

Companies / Years	A		B		C		D		E	
	Jo	Le	Jo	Le	Jo	Le	Jo	Le	Jo	Le
2011	161	—	148	—	179	—	116	—	128	—
2012	148	58	172	60	161	90	208	60	191	50
2013	135	69	188	96	143	101	169	45	167	79
2014	112	88	173	59	165	58	142	56	185	82
2015	141	39	151	48	179	66	155	108	142	91

1. If the respective ratio of number of male and female employees in **Company B** at the end of 2013 was 5 : 6, what was the number of female employees in **Company B** at the end of 2013?
   a)208 b)172 c)186 d)192 e)212

2. What was the total number of employees in **Company A** at the end of 2014?
   a)347 b)363 c)329 d)335 e)341

3. Number of employees in **Company E** at the end of 2012 is what percent more then the number of employees in **Company C** at the end of 2012?
   a)9 ×1/5 b)3 ×4/5 c)11 ×1/5 d)7 ×3/5 e)5 × 4/5

4. In which of the given companies, the number of employees was highest at the end of 2012?
   a)D b)C c)B d)A e)E

5. What is the average number of employees who joined **Company D** during all the given years taken together?
   a)166 b)156 c)162 d)164 e)158

6. What is the respective ratio between total number of employees who joined **Company C** in 2013 and 2014 together and total number of employees who left Company E in 2013, 2014 and 2015 together?
   a)22 : 17 b)11 : 9 c)22 : 19 d)13 : 9 e)11 : 7

GIVEN:

- 5 Companies **A,B,C,D** and **E**.
- In 5 Companies Number Of Employees are Joined (**Jo**) and Left (**Le**) during the given **years**.

SOLUTION :
Data interpretation **Missing data** tabular form.

Question 1: Explanation.
STEP 1: Find the Number of employees who joined in **CompanyB** till 2013 = 148 + 172 + 188 = 508
STEP 2: Find the Number of employees who left = 60 + 96 = 156
STEP 3: Find the Difference from **Jo** & **Le** in **CompanyB** = 508 – 156 = 352
STEP 4: Finally find the Number of Females = ratio 5 : 6 → 6/11 × 352 = 192.
Male : Female = 5 + 6 = 11

Question 2: Explanation.
STEP 1: The Number of employees in **CompanyA** at the end of 2014 => Add Joined Employees from 2011 to 2014(because question they mentioned end of 2014) – Add Left of Employees from 2011 to 2014.
= (161 + 148 + 135 + 112) – (58 + 69 + 88) = 556 – 215 = 341.
Ans: (5) 341

Question 3: Explanation.
STEP 1: Number Of Employees at the end of 2012 :
CompanyEà128 + 191 – 50 = 269
CompanyCà179 + 161 – 90 = 250

STEP 2: Required per cent = 269 – 250 / 250 x 100 = 38 / 5 = 7 3/5 %
Ans : (4) 7 3/5

Question 4: Explanation.
STEP 1:Number of employees at the end of 2012:
CompanyA = 161 + 148 – 58 = 251
CompanyB= 148 + 172 – 60 = 260
CompanyC= 250
CompanyD= 116 + 208 – 60 = 264
CompanyE= 269
The number of employees was highest at the end of 2012 is **Company E**
Ans : (5) E
Question 5: Explanation.
STEP 1:Required Average = 1/5 (116 + 208 + 169 + 142 + 155)
= 790 / 5
= 158
Ans : (5) 158

Question 6: Explanation
STEP 1: Required Ratio → (143 + 165) : (79 + 80 + 91)
⇒ 308 : 252
⇒ 11 : 9
Ans(2) 11:9

Here we are explaining two types of Missing D.I question with explanation.

1. The percentage profit on V is 4%. Then what is its selling price?
   1) 91.2 2) 89.5 3) 87.5 4) 85 5) 83.2

2. The selling price of X is what per cent of the cost price of W?
   1) 150% 2) 250% 3) 125% 4) 200% 5) 100%

3. What is the ratio of the loss on Y to that on W?
   1) 133 : 255 2) 65 : 55 3) 75 : 43 4) 833 : 500 5) 233 : 155

4. What is the difference between the selling price of Z and that of X?
   1) 189.8 2) 294.5 3) 191.4 4) 195.9 5) 201

5. If the loss on V is 5%, then its selling price is what percentage less than the selling price of Z?
   1) 85.7% 2) 88.7% 3) 83.7% 4) 81.7% 5) 79.7%

Explanation- Before proceeding to the question, our aim should be to find themissing values first. First find the values, then attempt questions.
1. Total Cost= 50+30= 80 and profit % is 4%, (80×4)/100=3.2
Selling Price= 80+3.3= 83.2

2. First find the selling price of X and cost price of W.
Selling price of X= (250+20+5)= 275
Now cost price of W is 100+10= 110
Selling price of X is what percent of cost price of W is = (275/110)x100= 250%
Now try to solve remaining questions.

3. 4

4. 3

5. 3

Before proceeding to the question, our aim should be to find the missing values first. First find the values, then attempt questions.

Missing Values in PNB = [112- (17+21+23+10+17)] = 24
Missing Values in BOI = [109- (18+22+14+10+26)] = 19
Missing Values in IDBI = [108- (23+14+23+12+20)] = 16
Missing Values in ICICI = [123- (25+28+23+15+20)] = 12

9. What is the respective ratio between the number of candidates interviewed by ICICI banks on Friday and Saturday together and that of candidates interviewed by BOI banks on the same day?
   (1) 35:38 (2) 39:40 (3) 43:44 (4) 45:46 (5) None of these

Explanation:-
Required Ratio = (15+20) :(10+26) = 35 : 36

10. The number of candidates interviewed by IDBI bank on Wednesday is what per cent of total number of candidates interviewed by all banks on the same day
    (1) 26.65 (2) 23.45 (3) 28.45 (4) 24.35 (5) None of these

Explanation:-
Required percentage = {23/98 * 100} = 23.45

11. What is the number of candidates interviewed by all banks on Tuesday?
    (1) 101 (2) 108 (3) 104 (4) 107 (5) None of these

Explanation:-
Required number = (21+19+14+28+25) = 107

12. By Approximate what per cent the number of candidates interviewed by ICICI bank on Thursday increased with respect to that of interviewed on previous day?
    (1) 80% (2) 96% (3) 88% (4) 92% (5) None of these

Explanation:-
Required percentage = (23-12)/12 * 100 = 91.66%

Solved Examples with Guidelines of Missing DI questions

These questions are easy to solve provided that the candidates are aware of the correct approach to attempt them. Keeping this view in mind, our experts have devised this article which will assist candidates about the correct approach to use while solving missing data interpretation questions so that they can save their time while answering.

Example 1: Level of Difficulty I

Directions: The proportion of male employees and the proportion of post-graduates in a company are given below. The company has a total of 800 employees, 80% of whom are in the production department and the rest equally divided between the marketing and the accounts department.

Department	Male	Post graduates
Marketing	0.60	
Accounts	0.55	0.50
Production		0.55
Total	0.475	0.53

1. What is the percentage of male employees in the production department?
   A) 40% B) 45% C) 50% D) 55% E) 60%

Total number of male employees in the company= 0.475% of 800= 380
We now have to see how many of these are from Production department.
Number of employess in Production= 80% of 800= 640
Number of employess in Marketing = Number of employess in Marketing = 10% of 800
Number of Male employess in Marketing = 60% of 10% of 800 = 48
Number of Male employess in Accounts = 55% of 10% of 800 = 44

Male employess in Production= 380- (48+44)= 288
Percentage of Male employess in Producion= (288/640)x 100= 45%
This one was easy. Now lets try a more difficult question on missing data interpretation question.

Example 2: Level of Difficulty II
Directions : A team of 5 players Arpit, Bimal, Chatur, Dinu and Elan participated in a 'Freaket' tournament and played four matches (1 to 4). The following table gives partial information about their individual scores and the total runs scored by the team in each match.

		Match-1	Match-2	Match-3	Match-4
Runs scored by player	Arpit		100		53
	Bimal	88	65		52
	Chatur			110	
	Dinu	72	75	20	56
	Elan	60		78	
Total		270	300	240	200

Each column has two values missing. These are the runs scored by the two lowest scorers in that match. None of the two missing values is more than 10% of the total runs scored in that match.

1) What is the maximum possible percentage contribution of Arpit in the total runs scored in the 4 matches?
A) 19.7% B) 19.9% C) 20.1% D) 20.2%

Answer: Option A
Explanation:
Now you have no clue about Arpit's score in Match 1 and 3. So you must work with estimates and use the statement: None of the two missing values is more than 10% of the total runs scored in that match
Maximum possible runs scored by Arpit in Match-1 = 10% of 270 = 27
Maximum possible runs scored by Arpit in Match-3 = 19
Why is Arpit's score not 24? Because he has to score less than 3rd lowest scorer = 20)
So, Maximum possible percentage contribution:
(27+100+19+53) / (270+300+240+200) x 100% = 199 / 1010 x 100% = 19.7%
This was easy right…. But only if you are prepared for such calculations because of past practice during preparation and mocks.

2) If the absolute difference between the total runs scored by Arpit and Chatur in the four matches is minimum possible then what is the absolute difference between total runs scored by Bimal and Elan in the four matches?
A) 32 B) 37 C) 27 D) Cannot be determined

Answer: Option B
Explanation:
Maximum possible total runs scored by Chatur in the four matches = 27 + 30 + 110 + 20 = 187.
You can see that we have again taken 10% values in each match.
Completing the table:

		Match-1	Match-2	Match-3	Match-4
Runs scored by player	Arpit	23	100	13	53
	Bimal	88	65	19	52
	Chatur	27	30	110	20
	Dinu	72	75	20	56
	Elan	60	30	78	19
Total		270	300	240	200

In such a case minimum possible total runs scored by Arpit in the four matches = 23 + 100 + 13 + 53 = 189.
Difference = 189 – 187 = 2 (minimum possible)
To minimize the difference, we have taken minimum possible score of Arpit.
Hence his score in Match-3 is taken as 13.
Subsequently total runs scored by Bimal in the four matches = 88 + 65 + 19 + 52 = 224.
Also, total runs scored by Elan in the four matches = 60 + 30 + 78 + 19 = 187
Absolute difference = 224 – 187 = 37

3) The players are ranked 1 to 5 on the basis of the total runs scored by them in the four matches, with the highest scorer getting Rank 1. If it is known that no two players scored the same number of total runs, how many players are there whose rank can be exactly determined?
A) 0 B) 1 C) 3 D) 5

Answer: Option C

Explanation:

Rage of every player's minimum and maximum score is:
Arpit >> 189-199
Bimal >> 218-224
Chatur >> 182-187
Dinu >> 223
Elan >> 187-188
So we can conclude that:
Aprip: Rank 3
Elan : Rank 4
Chatur : Rank 5
Since the score of Bimal and Dinu partially overlap, we can not determine the exact ranks of Bimal and Dinu.

Tricks to solve Missing Data Interpretation Questions:

The only tricks that work while solving questions on data interpretation with missing data in SBI-PO and IBPS-PO are the following:

1. Solve all questions with a cool mind. Don't leave Data Interpretation questions for the last when your mind is tired and anxious.
2. Take into consideration a range of values possible to be fit in the blank. Choose the most appropriate value as per the conditions given in the question.
3. If the question involves extensive calculation, use approximation method to solve the questions. Finding exact values is only necessary when the answer options are very close.
4. Attempt questions on data interpretation in the order in which they appear. It is usually seen that answer of previous question is useful in next question. The questions are usually in increasing order of difficulty.
5. Practice missing data interpretation questions before the exam so that you don't feel confused in the exam.

Read the following table carefully and answer the questions given below it. Data related to number of students who got admission and who left the given five colleges 1,2,3,4 and 5 during the given years.

	COLLEGE 1		COLLEGE 2		COLLEGE 3		COLLEGE 4		COLLEGE 5	
YEARS	ADM	LEFT	ADM	LEFT	ADM	LEFT	ADM	LEFT	ADM	LEFT
2008	161	–	148	–	179	–	116	–	128	–
2009	148	58	172	60	161	90	208	60	191	50
2010	135	69	188	96	143	101	169	45	167	79
2011	112	88	173	59	165	58	142	56	185	82
2012	141	39	151	48	179	66	155	108	142	91

1. What is the average number of students who got admission in College 4 during all the given years taken together?
(a) 156 (b) 164 (c) 166 (d) 162 (e) 158

2. If the respective ratio of number of boys and girls in College 2 at the end of 2010 was 5:6, what was the number of girls in College 2 at the end of 2010?
(a) 212 (b) 186 (c) 208 (d) 192 (e) 172

3. In which of the given colleges the number of students were the highest at the end of 2009?
(a) 1 (b) 2 (c) 3 (d) 4 (e) 5

4. What was the total number of students in College 1 at the end of 2011?
(a) 335 (b) 347 (c) 329 (d) 363 (e) 341

5. What is the respective ratio between total number of students who joined College 3 in 2010 and 2011 together and total number of students who left College 5 in 2010, 2011 and 2012 together?
(a) 22:17 (b) 11:9 (c) 13:9 (d) 11:7 (e) 22:19

ANSWERS

(1) (e) – 158
(2) (d) 192
(3) (e) 5
(4) (e) 341
(5) (b) 11:9

SOLUTIONS

(1) Average = (116 + 208 + 169 + 142 + 155)/5 = 158

(2) Total admitted student till 2010 = 148 + 172 + 188 = 508
Total number of students who left till 2010 = 60 + 96 = 156
Difference = 352
Number of girls = 6/11 * 352 = 192

(3) College 1 = 161 + 148 – 58 = 251
College 2 = 148 + 172 – 60 = 260
College 3 = 179 + 161 – 90 = 250
College 4 = 116 + 208 – 60 = 264
College 5 = 128 + 191 – 50 = 269

(4) (116 + 148 + 135 + 112) – (58 + 69 + 88) = 341

(5) Ratio = (143 + 165) : (79 + 82 + 91)= 11: 9

Directions: A team of 5 players Ashutosh, Narendra, Praveen, Arpit and Manoj participated in a 'Freaket' tournament and played four matches (1 to 4). The following table gives partial information about their individual scores and the total runs scored by the team in each match.

Each column has two values missing. These are the runs scored by the two lowest scores in that match. None of the two missing values is more than 10% of the total runs scored in that match.

Runs Scored by Players	Match – 1	Match – 2	Match – 3	Match – 4
Ashutosh	-	100	-	53
Narendra	88	65	-	52
Praveen	-	-	110	-
Arpit	72	75	20	56
Manoj	60	-	78	-
Total	**270**	**300**	**240**	**200**

6. What is the maximum possible percentage contribution of Ashutosh in the total runs scored in the four matches?
1.19.7% 2.19.9% 3.20.1% 4.20.2% 5.20.5%

Solution

Answer:1It is given that empty values are the lowest scores in that match and none of them is more than 10%.
∴ Maximum possible runs scored by Ashutosh in Match-1 = 10% of 270 = 270 × (10/100) = 27
In Match – 3, Runs scored by Arpit is 20, So Runs scored by Ashutosh will be less than 20.
So, maximum possible runs scored by Ashutosh will be 19.

$$\text{Maximum possible percentage contribution} = \frac{27+100+19+53}{270+300+240+200} \times 100 = \frac{199}{1010} \times 100 = 19.7\%$$

7. What is the minimum possible runs scored by Manoj in the four matches?
1.188 2.187 3.189 4.199 5.223

Solution

Answer:2Runs scored by Manoj in Match -2 and match – 4 will be minimum when runs scored by Praveen in the match 2 and match – 4 will be maximum.
Maximum runs scored by Praveen in match – 2 = 10% of 300 = 30
∴ Minimum runs scored by Manoj in match 2 = 300 – 100 – 65 – 30 – 75 = 30
Similarly, Maximum runs scored by Praveen in match – 4 = 10% of 200 = 20
∴ Minimum runs scored by Manoj in match 2 = 300 – 53 – 52 – 20 – 56 = 19
⇒ Minimum possible total runs scored by Manoj in the four matches = 60 + 30 + 78 + 19 = 187

8. If the absolute difference between the total runs scored by Ashutosh and Praveen in the four matches is minimum possible then what is the absolute difference between total runs scored by Narendra and Manoj in the four matches?
   1.32 2.37 3.27 4.24 5.Cannot be determined

Solution

Answer:2Maximum possible total runs scored by Praveen in the four matches = 10% of 270 + 10% of 300 + 110 + 10% of 200
= 27 + 30 + 110 + 20 = 187
In such a case minimum possible total runs scored by Ashutosh,
In Match – 1 = 270 – 88 – 27 – 72 – 60 = 23
In Match – 2 = 100
In Match – 3 = 240 – 19 – 110 – 20 – 78 = 13 (Here, Maximum possible runs scored by Narendra is 19)
In Match – 4 = 53
∴ In such a case minimum possible total runs scored by Ashutosh, in four matches = 23 + 100 + 13 + 53 = 189
Difference = 189 – 187 = 2 (minimum possible) subsequently total runs scored by Narendra in the four matches = 88 + 65 + 19 + 52 = 224
Also, total runs scored by Manoj in the four matches = 60 + 30 + 78 + 19 = 187
∴ Absolute difference = 224 – 187 = 37

9. The players are ranked 1 to 5 on the basis of the total runs scored by them in the four matches, with the highest scorer getting Rank 1. If it is known that no two players scored the same number of total runs, how many players are there whose rank can be exactly determined?
   1.0 2.1 3.2 4.3 5.5

Solution: Answer:3Ashutosh's score in Match -1 will be minimum when Praveen's score will be maximum in Match – 1 i.e. Ashutosh's minimum score in Match – 1 = 270 – 88 – (10% of 270) – 72 – 60 = 23
Similarly, Ashutosh's minimum score in Match – 3 = 240 – 19 – 110 – 20 – 78 = 13
So, Minimum possible total runs scored by Ashutosh in 4 matches = 23 + 100 + 13 + 53 = 189
And Maximum possible total runs scored by Ashutosh in 4 matches = 27 + 100 + 19 + 53 = 199
Narendra's score in Match -3 will be minimum when Ashutosh's score will be maximum in Match – 3 i.e.
Narendra's minimum score in Match – 3 = 240 – 19 – 110 – 20 – 78 = 13
∴ Minimum possible total runs scored by Narendra in 4 matches = 88 + 65 + 13 + 52 = 218
And Maximum possible total runs scored by Narendra in 4 matches = 88 + 65 + 19 + 52 = 224
Similarly, Minimum possible total runs scored by Praveen in 4 matches = 23 + 30 + 110 + 19 = 182
And Maximum possible total runs scored by Praveen in 4 matches = 27 + 30 + 110 + 20 = 187
Similarly, Total runs scored by Arpit in 4 matches = 72 + 75 + 20 + 56 = 223
Similarly, Minimum possible total runs scored by Manoj in 4 matches = 60 + 30 + 78 + 19 = 187
And Maximum possible total runs scored by Manoj in 4 matches = 60 + 30 + 78 + 20 = 188
Individual ranges for total score:
Ashutosh = 189-199
Narendra = 218-224
Praveen = 182-187
Arpit = 223
Manoj= 187 – 188
Least total will be of Praveen (Rank 5)
2nd least will be Manoj (Rank 4)
Rank 3 must be of Ashutosh.
It is not possible to determine the exact ranks of Narendra and Arpit.

Direction (1-5): The table shows the Cost Price of 5 products divided in 3 costs: Production Cost, Transportation Cost and Packaging Cost, the selling price, profit/loss and profit%/loss%. Some values are missing. Find the answers based on information in table and respective questions.

Products	Production Cost	Transportation Cost	Packaging Cost	Selling Price	Profit/Loss	Profit%/Loss%
A	Rs 40	Rs 8	–	Rs 150	–	–
B	Rs 50	Rs 10	Rs 4	–	–	30%profit
C	Rs 45	–	Rs 10	–	Rs 50	–
D	Rs 30	Rs 6	Rs 15	–	–	–
E	Rs 60	Rs 10	–	Rs 110	–	10% loss

1. If the percentage of profit on selling product A is 15%, then what is its cost of packaging?
   A) Rs 82.43 B) Rs 83.50 C) Rs 86.56 D) Rs 71.09 E) Rs 77.80

Option A
Solution:
SP = 150, profit% = 15%
So CP = 100/115 * 150 = Rs 130.43
So cost of packaging = 130.43 – (40+8) = Rs 82.43

2. What is the difference between the selling price of products B and C, if the cost of transportation of C is Rs 8?
   A) Rs 26.6 B) Rs 32.4 C) Rs 29.8 D) Rs 36.4 E) Rs 12.2

Option C
Solution:
CP of B = 50+10+4 = Rs 64
30% profit
So SP of B = 130/100 * 64 = Rs 83.2
CP of C = 45+8+10 = Rs 63
Profit = Rs 50
So SP of C = 63+50= Rs 113
So difference = 113 – 83.2 = Rs 29.8

3. Suppose all the prices are given for per kg of a product. What amount of product B will have to added to 33 kg of product E such that the resultant product costs Rs 86.
   A) 64.1 kg B) 51.9 kg C) 62.7 kg D) 54.3 kg E) 50.7 kg

Option D
Solution:
CP of B = 50+10+4 = Rs 64
For CP of E:
SP = 100, loss% = 10%
So CP of E = 100/90 * 110 = Rs 122.2
Using method of allegation
(x kg)……(33 kg)
Rs 64……Rs 122.2
……Rs 86
(122.2-86)……(86-64)
36.2……22
So
x/33 = 36.2/22
Solve, x = 54.3 kg

4. What is the percentage profit (approximate) on selling product D if its selling price is 80% of the selling price of B?
   A) 28% B) 30% C) 40% D) 35% E) 38%

Option B
Solution:
SP of B = 130/100 * 64 = Rs 83.2
SP of D = 80/100 * 83.2 = Rs 66.56
CP of D = 30+6+15 = Rs 51
So profit% = 15.56/51 * 100 = 30%

5. If 2 kg of A, 3 kg of C and 4 kg of E are sold, then what will be the final profit/loss% (approximate) on selling these given transportation cost of C as Rs 5 and profit of 5% on selling A?
   A) 22% B) 8% C) 17% D) 14% E) 12%

Option E
Solution:
SP of A = 150, profit is 5%, So CP of A = 100/105 * 150 = Rs 143 (we have to find approximate)
Given transportation cost of C is Rs 5, so total CP of C = 45+5+10 = Rs 60, profit is Rs 50, so SP of C = Rs 110
SP of E = Rs 110, at 10% loss, CP of E = Rs 122
So CP of (2 kg of A + 3 kg of C + 4 kg of E) = 2*143 + 3*60 + 4*122 = Rs 954
Similarly SP of (2 kg of A + 3 kg of C + 4 kg of E) = 2*150 + 3*110 + 4*110 = Rs 1070
So profit% = 116/954 * 100 = 12%

Direction (6-10): The table given below shows the scorecard of India during a test match. Some values are missing. Find the answers based on information in table and respective questions.

Player	Runs	Balls Faced	4's	6's
V Kohli	148	104	13	–
S Raina	40	55	3	–
R Ashwin	37	42	1	1
C Pujara	–	21	2	0
R Jadeja	13	5	0	1
MS Dhoni	81	–	11	3
Total	–	–	–	10

Further information is:
(i) Total runs scored by V Kohli from those scored by 1's and 2's are in the ratio of 1 :5
(ii) Number of white balls faced by C Pujara is 6.
(iii) A white ball is defined as the ball on which no run is scored.
(iv) During the entire match only 1's, 2's, 4's and 6's were taken by the batsmen.
(v) V Kohli hits the maximum number of 6's among all the batsmen.
(vi) Beside C Pujara every player has hitted at least a six.
(vii) Every player has taken at least a 1 and a 2.

6. What is the total number of white balls face by V Kohli?
   A) 42 B) 53 C) 49 D) 45 E) 38

Option D
Solution:
Runs scored by 4's = 13*4 = 52
Total 6's = 10, Each player except Pujara hit at least a 6. And Kohli hit the maximum 6's. So 6's by Kohli = 4. So runs scored by 6's = 4*6 = 24
Total runs scored by 4's and 6's = 52+24 = 76
For these runs balls played are 13+4 = 17 …….(1)
So runs by 1'2 and 2's = 148-76 = 72
1's and 2's runs ratio = 1 : 5
So 12 runs by 1'2 and 60(2*30) by 2's
So balls for 1's and 2's = 12+30 = 42 ……..(2)
So total balls = 17+42 = 59
So number of white balls = 104 – 59 = 45

7. What is the minimum number of balls faced by MS Dhoni?
   A) 24 B) 32 C) 29 D) 36 E) 20

Option A
Solution:
Runs scored by 4's = 11*4 = 44 ….(1)
by 6's = 3*6 = 18 ……(2)
Total runs by 4's and 6's = 44+18 = 62
remaining runs = 81-62 = 19
By taking 1's and 2's he has scored these 19 runs. To minimize the number of balls Dhoni has to score more runs

taking 2's. So he can score 18 runs by taking 2's and 1 by taking a 1.
So balls for 1's and 2's = 9+1 = 10 …….(3)
So total balls (minimum) = 11+3+10 = 24

8. If the number of balls faced by C Pujara to take 1's is greater than that for 2's, then he can score a maximum of how many runs?
   A) 24 B) 27 C) 32 D) 21 E) 34

Option B
Solution:
Runs by 4's = 2*4 = 8 ….(1)
Number of white balls = 6
So remaining balls = 21 – (2+6) = 13
So, to maximize his score in 13 balls, he can take 7 one's and 6 two's. ……(2)
So a maximum of 8 + 7*1 + 6*2 = 27 runs

9. Assume if only the given players score during the match for the team, then what is the minimum score of the team?
   A) 333 B) 309 C) 403 D) 358 E) 341

Option E
Solution:
In order to find the minimum score of team, we have to find the minimum runs scored by Pujara.
he takes 2 four's so 2*4 = 8 runs
So now 21-2 = 19 balls left. Now given that he faced 6 white balls, So now balls left = 19-6 = 13 balls. Now for minimum runs, he should score more 1's than 2's
Since at least one 1's and one 2's is necessary so minimum runs on 13 balls is 1*12 + 2*1
So total min runs by Pujara = 2*4 + 1*12 + 2*1 = 22
So minimum score of team = 148+40+37+22+13+81 = 341

10. What was the maximum possible new run rate of the team?
    A) 9.32 B) 8.48 C) 7.56 D) 4.45 E) 12.23

Option B
Solution:
First find the maximum runs scored and minimum balls faced.
Minimum number of balls faced by Dhoni = 24
Maximum runs scored by Pujara = 2*12 + 1*1 + 4*2 = 33
Maximum runs scored by team = 148+40+37+33+13+81 = 352
Minimum number of balls faced = 104+55+42+21+5+24 = 251 balls or 251/6 = 41.5 overs
So maximum run rate = 352/41.5 = 8.48