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DILR

1. 2 In 1999, total number of Naya mixer-grinder = 124 Number of Naya mixer-grinder disposed = 20% of 30 = 6 Number of mixtures bought 124 = [50 + 24] 50

2. 3 Number of Naya mixer-grinder disposed in 1999 ⇒ 6 Number of Naya mixer-grinder disposed in 2000 ⇒ 10 Total disposed by end of 2000 = 16

3. 4 Initial number of Purana mixer-grinder not available, hence cannot be determined.

4. 1 20 Purana mixer-grinder were purchased in 1999.

5. 4 Thailand and Japan (Maximum difference of 4 ranks (5 – 1) = 4)

6. 1 China (Maximum difference between 2 parameter is 2)

7. 2 Japan (Maximum difference of 4)

8. 4 Japan and Malaysia (Inferring from question 17)

9. 2 Only R9

10. 4 Statement (1) is not satisfied by R9. Statement (2) is not satisfied R2 & R3 Statement (3) is incorrect as there are five such region R1, R2, R3, R4 & R11. Statement (4) is correct.

11. 3 All three R9, R10, R11.

12. R1 and R4 are two common in crop 1 and crop3

The given basic information can be collated as below: (i) Six teams – A, B, C, D, E, F (ii) Matches scheduled in two stages – I & II. (ii) No team plays against the same team more than once. (iv) No ties permitted. As per the instructions given for stage – I, we can reach the following conclusions: (a) As B lost at least one match, hence A won all the 3 matches. (b) The two teams who lost all the matches cannot be A (as explained above), cannot be B (E lost to B), cannot be D (D won against C & F). Hence, the two teams must be C and F. (c) F did not play against the top team (i.e. A). We get the following table for stage – I.
(To be read from rows)

	A	B	C	D	E	F
A	X	W	W	W		
B	L	X			W	W
C	L		X	L	L	
D			W	X		W
E		L	W		X	X
F		L		L	L	X

As per the instructions given for Stage-II, we can reach the following conclusions. (d) A lost both its matches against E and F. (e) F won against A, hence is the bottom team (out of C & F) which won both the matches ⇒ F won against C as well. This also means that C lost both its matches against B and F. (f) Apart from A and C, one more team lost both the matches in Stage-II. That team can neither be E (A lost to E), nor B (as C lost to B), nor F (as F won both its matches). Hence, the team must be D.
We get the following table for Stage-II.

	A	B	C	D	E	F
A	X				L	L
B		X	W	W		
C		L	X			L
D		L		X	L	
E	W			W	X	

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F	W		W			X

13.2 E & F defeated A. [Please note that in this question option (1) and (5) were the same]

14.4 B, E & F won both the matches in Stage-II.

15.5 D & F won exactly two matches in the event.

16.5 B & E has most wins, 4 each.

17.3

	Day 1	Day 2	Day 3	Day 4	Day 5
Start price	100	90	100	110	120
End price	90	100	110	120	110

In the above table Harshit sold shares on Day 2, Day 3 and Day 4 whereas Dhara sold shares on Day 4 only. Therefore at the end of day 3 the price of Share is Rs. 110.

18.2

	Day 1	Day 2	Day 3	Day 4	Day 5
Start price	100	90	100	110	100
End price	90	100	110	100	100

Let initial amount with Harshit and Dhara is y. Total Money with Harshit = y - 900 + 1000 + 1100 + 1200 - 1100 = y + 1300 Total money with Dhara = y Therefore Harshit ended up with Rs.1300 more cash than Dhara. Therefore at the end of day 4 the price of Share is Rs. 100.

19.1

	Day 1	Day 2	Day 3	Day 4	Day 5
Start price	100	90	80	90	100
End price	90	80	90	100	110

Assume initial number of share with Harshit and Dhara is x. In the above table Harshit buy 10 share each on day 1, day 2 and sold 10 share on day 3, day 4 and day 5.

∴ Total shares with Harshit is x - 10. In the above table Dhara buy shares only on day 2. ∴ Total shares with Dhara is x + 10. ∴ Dhara had 20 shares more then Harshit. Therefore at the end of day 3 the price of share is Rs. 90.

20.4

	Day 1	Day 2	Day 3	Day 4	Day 5
Start price	100	110	120	130	120
End price	110	120	130	120	110

Let initial amount with Harshit and Dhara is Y. Harshit sold shares on Day 1, Day 2, Day 3 whereas buys shares on Day 4 and Day 5. Total Money with Harshit is = Y + 110 × 10 + 120 × 10 + 130 × 10 - 120 × 10 - 110 × 10 = Y + 1300 Total money with Dhara = Y + 1200 Total money with Dhara = Y + 120 × 10 + 130 × 10 + 120 × 10 = Y + 3700 Total money with Dhara & Harshit = 2Y + 5000. Therefore maximum possible increase is 5000.

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As only Paul Zohos was having an Zohos number of zero so the minimum Zohos number among A, B, C, D, E, F, G, H should be 1 or greater than one. At the end of the third day F coauthored a paper with A and C. F had the minimum Zohos number among the 8 people. So if F's Zohos number is y, then A and C's Zohos number should change to (y + 1) after third day. As A and C decreased the average by maximum possible extent, it means C had the second-height Zohos number among all eight, as A had an Zohos number of infinity. Suppose Zohos numbers of A, B, C, D, E, F, G, H are y + 1, b, y + 1, c, d, e, y, g, h respectively at the end of third day.

$\therefore$ (y + 1 + b + y + 1 + c + d + e + y + g + h) = 24 = (3 × 8) 3y + 2 + b + d + e + g + h = 24

When E co-authored with F, the average Zohos number reduced again, it means, E's Zohos number was not the same with A & C initially. As at the end of third day, 5 people had same Zohos number, they should be A, C and any 3 out of B, D, G, H. Suppose those 3 people are B, D, G. Then

(3y + 2 + y + 1 + y + 1 + y + 1 + e + h) = 24 6y + h + e = 19 …(i)

On the fifth day E co-authored a paper with F and hence Zohos number of E changed to (y + 1). Also the average decreased by 0.5 that means the total decreased by

Hence, e - (y + 1) = 4 $\Rightarrow$ e − y = 5

Putting the value of e in equation (i), we get 6y + h + (5 + y) = 19 7y + h = 14

Only possible value of y = 1 as h cannot be zero. So after 3rd round Zohos number of A, C, E, F were 2, 2, 6, 1 respectively.

21.4 Only A, C, E changed their Zohos number, rest 5 did not change their Zohos number.

22.2 At the end of conference 6 people including E were having an Zohos number of 2 and F was having 1 as Zohos number. So 8th person was having an Zohos number of [20 − (2 × 6 + 1)] = 7

23.2 As at the end of 3rd round 5 people were having same Zohos number. A and C changed their Zohos number after coauthoring with F. So, the other 3 would have same Zohos number in the beginning.

24.2 2

Player	Pakistan	South Africa	Australia
Yuvraj	40	<49	87
Virender	130	<49	<48
Kaif	28	51	<48
Saurav	<22	75	50
Rahul	<22	49	55
Top 3	198	175	192
Total	220	250	240

25. 3
26. 1
27. 2
28. 2

29.2 Since Ramaya got calls from all colleges, she has to score marks in each section equal to at least the maximum of the cut-offs across colleges which means 45, 45, 46 & 45 in section A, B, C & D respectively. This makes her total to be 181 with which she will clear the overall cut-offs of all institutes also.

30.3 Since we have to minimise the marks in a particular section, we will maximise the marks in other 3 sections. Let us assume that marks obtained in each of the three sections in which we are

going to maximize the score, is equal to 50. Now, the lowest overall cut-off is 171 & second lowest is 175. Hence Gauri must have scored at least 175 – (50 + 50 + 50) = 25 marks in the remaining section. Lets confirm whether he can clear sectional cut-offs also with such a distribution. On seeing the sectional cut-offs, we conclude what they can be cleared with 50 marks each in section A, B & C and 25 marks in section D, which may enable Charlie to clear the sectional cut-off of section D for college 1, 2, 3 or 5. Hence answer is 25.

31.3 Since we have to maximize Minakshi's marks, let us take the base values of 50 marks in each section and try to reduce that by minimum values to ensure he doesn't get any call. We notice that by reducing the marks

32. 3 Maximum marks needed by Cetking student to clear all colleges cut-off will be 46 marks as thats the highest cutoff for section D more than any college.