MBA Fastrack 2025 (CAT + OMETs)

Data Interpretation & Logical Reasoning

DPP: 1

Tables, Bar Graphs, Line Charts

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

A business strategy competition was conducted in which 5 schools A, B, C, D, and E participated in the final round. The event was finally won by school C. The following table gives the number of girls from A, B, D, and E who participated in the event as a percentage of the total students from school C who participated in the event.

School	Percentage
A	40%
B	15%
D	25%
E	20%

It is also known that the ratio of the number of girls to boys in the schools A, B, D, and E who participated in the event was 1:3, 3:2, 4:3, and 5:3 in no particular order.

Q1 If it is known that 80 students participated from school C, find the difference between the number of boys who participated from school B and school D?
(A) 4
(B) 6
(C) 8
(D) Cannot be determined

Q2 It is known that the number of boys who participated from schools A,B,D and E were 14, 24, 27 and 30 in no particular order. Find the maximum number of students who participated from the four schools put together?
(A) 235
(B) 225
(C) 210
(D) Cannot be determined

Q3 It is known that 180 students participated from school C. The maximum number of students who participated is from which school?
(A) A
(B) B
(C) E
(D) Cannot be determined

Q4 It is known that 80 students participated from school C. Which among the following can be the ratio of the number of boys who participated from school A to the total number of students who participated from school B?
(A) 5 : 6
(B) 6 : 5
(C) 1 : 1
(D) Cannot be determined

Q5 It is known that 180 students participated from school C. Find the number of boys who participated from school D?
(A) 27 (B) 45
(C) 72 (D) 36

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

The table given below shows the total number of sanitizers that were estimated to be sold in five states. Out of the total sanitizers sold a percentage of 70% Alcohol sanitizers sold, and a ratio between 30% Alcohol and 0% Alcohol sanitizers is given. Study the data carefully and answer the following questions.

States	Sanitizers that can be sold	70% Alcohol sanitizers sold	30% Alcohol : 0% Alcohol sanitizers
U.P	2300	15%	9 : 8
West Bengal	4500	35%	5 : 8
Telangana	3800	25%	4 : 5
Gujarat	1000	45%	5 : 3
Delhi	1500	20%	8 : 5

Note: 200 sanitizers remain unsold in each state which can be sold.

Total sanitizers in each state = 70% Alcohol sanitizers + 30% Alcohol sanitizers + 0% Alcohol sanitizers + unsold sanitizers

Q6 Total 70% Alcohol and 0% Alcohol sanitizers sold in West Bengal is approximately what percent more than the total number of 70% Alcohol and 30% Alcohol sanitizers sold in Gujarat state?
(A) 100% (B) 220%
(C) 375% (D) 408%

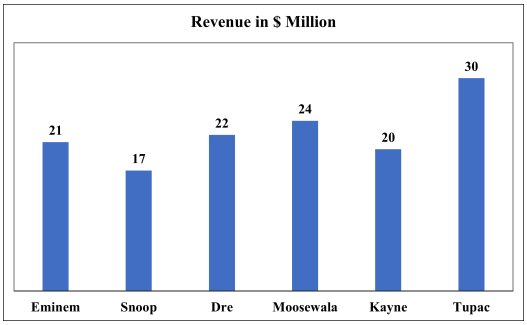
Q7 Total 30% Alcohol sanitizers sold in U.P. is how much less/more than 0% Alcohol sanitizers sold in Delhi?
(A) 320 (B) 425
(C) 545 (D) 670

Q8 Find the ratio between total 0% Alcohol sanitizers sold in Telangana and Gujarat together to total 30% Alcohol sanitizers sold in West Bengal and Telangana?
(A) 1 : 3 (B) 333 : 455
(C) 299 : 311 (D) 457 : 333

Q9 Find the average number of total 70% Alcohol sanitizers sold by all the five states together?
(A) 300 (B) 420
(C) 595 (D) 668

Q10 Find the average number of total 30% Alcohol sanitizers sold by all the five states together?
(A) 1080 (B) 980
(C) 910 (D) 827

Directions (11-15) Read the following passage and answer the given questions.
Song album sales of 6 artists are shown below.
The graph shows the total revenue from the sales of these albums.
Revenue = Number of units sold × price per unit.



It is given that –
(i) Number of albums sold by each of the artists in millions are distinct integers.
(ii) Unit price of the albums are all distinct integers when expressed in $ and the costliest album costs $6/unit.

Q11 What is the difference between the rates of Tupac and Kayne in $/unit?
(A) 1 (B) 2
(C) 3 (D) 4

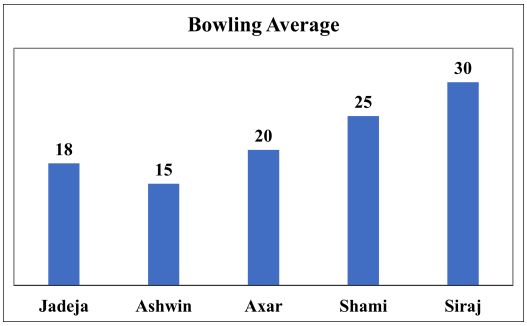
Q12 Drake, another artist, has the unit price of his album 50% more that of Kayne and the number of units sold is equal to that of Eminem's. If total revenue of Drake's album is equal to the sum of that of Kayne and Dre then find how much 1 unit of Moosewala album and 2 units of Tupac album will cost (in $)?
(A) 15 (B) 16
(C) 17 (D) 18

Q13 Had we drawn the bar diagram of the units sold of the artists instead of the revenue, then which artist would have had the second highest bar?
(A) Tupac (B) Moosewala
(C) Dre (D) Snoop

Q14 Grammy Award is presented to one of these 6 artists. Each of the artists get a score as below-
Score = (Number of Units Sold in Million) x 3 + (Revenue in Million $) x 2
If the artist with the highest score gets the award, then who gets the award?
(A) Tupac (B) Moosewala
(C) Dre (D) Snoop

Q15 Whose album was sold the least?
(A) Tupac (B) Moosewalla
(C) Kayne (D) Either B or C

Directions (16-20) Read the following passage and answer the given questions.
The bowling averages of different bowlers are shown in the below chart. The bowling average of a bowler is defined as the total runs conceded by the bowler divided by the total number of wickets taken by that bowler.



Q16 Ashwin has conceded the highest run which is 150 more than that of Shami's. Then what is the least amount of run conceded by Jadeja who has taken twice the number of wickets as taken by Shami.

Q17 Let the number of wickets taken by Ashwin and Axar is in the ratio of 5 : 1. If the ratio of the runs conceded by Ashwin & Axar is p : q, then find the minimum value of value of p + q.

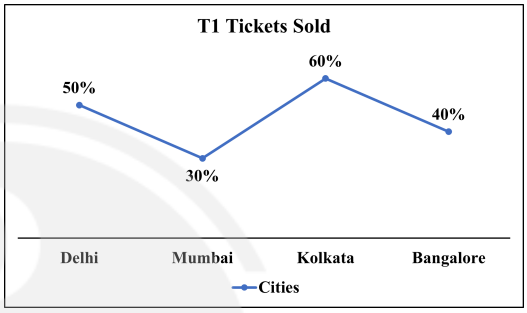
Q18 If the runs conceded by Siraj is the same as that of Shami then find the number of wickets taken by Shami if Siraj took 50 wickets.

Q19 In the next match all the five bowlers remained wicketless and conceded 26, 30, 32, 63, 66 runs and as a result the bowling average became 18, 20, 25, 29 & 36 not necessarily in any order. Then find out the sum of the wickets taken by Jadeja and Siraj.

Q20 In the next match all the five bowlers remained wicketless and conceded 26, 30, 32, 63, 66 runs and as a result the bowling average became 18, 20, 25, 29 & 36 not necessarily in any order. Find the difference between the wickets taken by the two bowlers who conceded the most and the least runs respectively after the match where all of them were wicketless.

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

Russel Peter, a famous stand-up comic artist had shows in 4 locations in India- Delhi, Mumbai, Kolkata, Bangalore. The shows in each of the locations happened in auditorium halls not necessarily having the same capacity across cities. There are 3 types of tickets which got sold in each of the locations- T1, T2 & T3 each having a different price but same across the cities. However, the cheapest ticket costs $1. The below graph shows the % of T1 sold in each of these cities. It is known that all the 4 shows across the 4 cities were housefull (which means total seating capacity of the hall is equal to the number of tickets sold). Number of T3 tickets sold in each of the locations are the same and are equal to 120 tickets/location. It is known that the ratio of costs of T1, T2 & T3 is 2 : 3 : 1. The ratio of T1 & T2 tickets for Delhi, Mumbai, Kolkata & Bangalore are in the ratio of 5 : 2, 3 : 4, 2 : 1, 1: 1 respectively.



Q21 Find the total revenue from all the shows across all the cities (in $).

(A) 4550 (B) 5560
(C) 6570 (D) 7580

Q22 Find the revenue of the city from T1 tickets which sold the least number of T2 tickets (Answer in $).

(A) 300 (B) 350
(C) 400 (D) 450

Q23 Find the revenue of the city from T2 tickets which sold the least number of T1 tickets (Answer in $).

(A) 400 (B) 460
(C) 480 (D) 500

Q24 Which city has the second lowest average cost/ticket for all the tickets sold?

(A) Delhi (B) Mumbai
(C) Kolkata (D) Bangalore

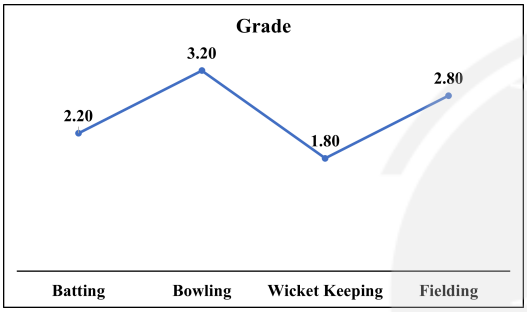
Q25 Cost of booking the auditorium halls in each of the cities is equal to the product of the number of seats and booking cost per seat. If the booking cost per seat is $0.50, then find the total profit from Kolkata. Consider the auditorium booking cost as the only kind of cost.

(A) $1020 (B) $1040
(C) $2020 (D) $2040

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

A Ranji cricket match was going on between two teams, these players didn't know that 5 national team selectors were speculating about Dhoni (one of the players playing with them). The names of selectors are A, B, C, D and E. Dhoni was graded by these 5 selectors on the following parameters: Batting, Bowling, wicket keeping and fielding from 1(lowest) to 4(highest). While grading Dhoni on four attributes, no selector gave the same grade to two attributes.

The graph below shows the average grade of each of the attributes



The following table shows the attribute that was not given grade 1 or 4 by the selectors

A	Bowling, Wicket keeping
B	Bowling, Wicket keeping
C	Batting, Fielding
D	Batting, Fielding
E	Bowling, Wicket keeping

Further it is also known that:

- The attribute 'Wicket keeping' did not get the highest grade from any of the selectors.
- A and B gave the same grade to attribute Batting.

Q26 How many selectors gave a higher grade to 'Wicket keeping' than 'Bowling'?
(A) 0
(B) 1
(C) 2
(D) Cannot be determined

Q27 Which of the following could be an accurate list of grades given by A?
(A) Batting – 1, Bowling – 3, Wicket keeping – 2, Fielding – 4
(B) Batting – 4, Bowling – 3, Wicket keeping – 2, Fielding – 1
(C) Batting – 4, Bowling – 2, Wicket keeping – 3, Fielding – 1
(D) Both B) and C)

Q28 If for 'Wicket keeping', A graded higher than E, which of the following could be an accurate list of the grades given by B?
(A) Batting – 4, Bowling – 3, Wicket keeping – 2, Fielding – 1
(B) Batting – 1, Bowling – 3, Wicket keeping – 2, Fielding – 4
(C) Batting – 1, Bowling – 2, Wicket keeping – 3, Fielding – 4
(D) Both B) and C)

Q29 If E's grade were not considered, what would be the average grade received by attribute 'Fielding'?
(A) 2.5
(B) 2.6
(C) 3.25
(D) Either B) or C)

Q30 If A's grade were not considered, what would be the average grade received by attribute 'Batting?
(A) 2.5 (B) 2.6
(C) 2.25 (D) 3

Answer Key

Q1	(A)
Q2	(C)
Q3	(D)
Q4	(B)
Q5	(A)
Q6	(D)
Q7	(C)
Q8	(B)
Q9	(D)
Q10	(D)
Q11	(A)
Q12	(B)
Q13	(C)
Q14	(D)
Q15	(D)
Q16	108
Q17	19
Q18	60
Q19	24
Q20	5
Q21	(B)
Q22	(C)
Q23	(C)
Q24	(B)
Q25	(D)
Q26	(B)
Q27	(A)
Q28	(B)
Q29	(C)
Q30	(A)

Hints & Solutions

Note: scan the QR code to watch video solution

Q1. Text Solution:

It is known that 80 students participated from school C. The number of girls from schools A, B, D, and E will be as follows:

School	Percentage	Girls
A	40%	32
B	15%	12
D	25%	20
E	20%	16

It is also known that the ratio of the number of girls to boys in the schools A, B, D, and E who participated was 1:3, 3:2, 4:3, and 5:3 in no particular order.

The ratio 5 : 3 must be of school D as there is no other number for the total girls which is a multiple of 5. If we take the ratio as 4 : 3 for D then for E we don't have any ratio because 16 is not a multiple of 5 and 3. Similarly, the ratio 3: 2 must be of school B.

For school D, $\frac{5}{8}$ of total = 20

Total students in D = 32

Number of boys in D = 12 ($\frac{3}{8}$ of 32)

For school B, $\frac{3}{5}$ of total = 12

Total students = 20

Number of boys in B = 8

Required difference = 12 - 8 = 4.

The answer is option A.

Video Solution:

Q2. Text Solution:

It is known that 80 students participated from school C. The number of girls from schools A, B, D, and E will be as follows:

School	Percentage	Girls
A	40%	32
B	15%	12
D	25%	20
E	20%	16

It is known that the ratio of the number of girls to boys in the schools A, B, D, and E who participated was 1:3, 3:2, 4:3, and 5:3 in no particular order.

Boys will be $\frac{3}{4}$ of the total, $\frac{2}{5}$ of the total, $\frac{3}{7}$ of the total and $\frac{3}{8}$ of the total.

It is given that the number of boys who participated from the mentioned 4 schools is 14, 24, 27 and 30 in no particular order.

For maximum value, we need to have

$\frac{3}{8}$ of total 1 = 30

Total 1 = 80

$\frac{3}{7}$ of total 2 = 27

Total 2 = 63

$\frac{3}{4}$ of total 3 = 24

Total 3 = 32

$\frac{2}{5}$ of total 4 = 14

Total 4 = 35

Maximum strength = 80 + 63 + 32 + 35 = 210 students.

The answer is option C.

Video Solution:

Q3. Text Solution:

School	Percentage	Girls
A	40%	72
B	15%	27
D	25%	45
E	20%	36

It given that 180 students participated from school C and so the number of girls from schools A, B, D, and E will be as shown above.

It is known that the ratio of the number of girls to boys in the schools A, B, D, and E who participated was 1:3, 3:2, 4:3, and 5:3 in no particular order.

Since we do not know the particular order, we cannot identify the school with the maximum participation.

The answer is option D.

Video Solution:

Q4. Text Solution:

It is known that 80 students participated from school C. The number of girls from schools A, B, D and E will be as follows:

School	Percentage	Girls
A	40%	32
B	15%	12
D	25%	20
E	20%	16

It is also known that the ratio of the number of girls to boys who participated in the schools A, B, D and E was 1:3, 3:2, 4:3, and 5:3 in no particular order.

The ratio of 5:3 must be of school D as there is no other number for the total girls which is a multiple of 5. If we take the ratio as 4 : 3 for D then for E we don't have any ratio because 16 is not a multiple of 5 and 3. Similarly, the ratio of 3 : 2 must be of school B.

Let the total number of students in school B be q.

$\frac{3}{5}$ of q = 12

q = 20

Let the total number of students in School A be p.

The ratio of girls to boys for school A can be either 1 : 3 or 4 : 3.

If the ratio is 1:3 then

$\frac{1}{4}$ of the total p is 32

Therefore, p = 128

Number of boys from A = 128 – 32 = 96

The required ratio of the number of boys from A to the number of students from B

= 96 : 20 = 24 : 5

If the ratio is 4 : 3 then

$\frac{4}{7}$ of the total p is 32

Therefore, p = 56

Number of boys from A = 56 - 32 = 24

The required ratio of the number of boys from A to the number of students from B

= 24 : 20 = 6 : 5.

The answer is option B.

Video Solution:

Q5. Text Solution:

School	Percentage	Girls
A	40%	72
B	15%	27
D	25%	45
E	20%	36

It is given that 180 students participated from school C and so the number of girls from schools A, B, D and E will be as shown above.

It is known that the ratio of the number of girls to boys in the schools A, B, D and E who participated was 1:3, 3:2, 4:3 and 5:3 in no particular order.

The ratio of girls to boys for school D must be 5:3 because if we choose any other ratio then there is no number which could be divided by 5.

Let the total students in school D be s.

So, $\frac{5}{8}$ of s = 45

s = 72.

Number of boys who participated from school D = 72 - 45 = 27.

The answer is option A.

Video Solution:

Q6. Text Solution:

Total 70% Alcohol and 0% Alcohol sanitizers sold in West Bengal

$= 4300 \times \frac{35}{100} + 4300 \times \frac{65}{100} \times \frac{8}{13}$

$= 1505 + 1720 = 3225$

Total number of 70% Alcohol and 30% Alcohol sanitizers sold in Gujarat

$= 800 \times \frac{45}{100} + 800 \times \frac{55}{100} \times \frac{5}{8}$

$= 360 + 275 = 635$

Required percentage

$= \frac{3225-635}{635} \times 100$

$= \frac{2590}{635} \times 100$

$= 407.87\%$

So, 408 (appx)

The answer is option D.

Video Solution:

Q7. Text Solution:

30% Alcohol sanitizers sold in U.P.

$= 2100 \times \frac{85}{100} \times \frac{9}{17}$

$= 945$

0% Alcohol sanitizers sold in Delhi

$= 1300 \times \frac{80}{100} \times \frac{5}{13}$

$= 400$

Required difference $= 945 - 400 = 545$

The answer is option C.

Video Solution:

Q8. Text Solution:

0% Alcohol sanitizers sold in Telangana and Gujarat together

$= 3600 \times \frac{75}{100} \times \frac{5}{9} + 800 \times \frac{55}{100} \times \frac{3}{8}$

$= 1500 + 165$

$= 1665$

30% Alcohol sanitizers sold in West Bengal and Telangana together

$= 4300 \times \frac{65}{100} \times \frac{5}{13} + 3600 \times \frac{75}{100} \times \frac{4}{9}$

$= 1075 + 1200 = 2275$

Required Ratio $= \frac{1665}{2275} = \frac{333}{455}$.

The answer is option B.

Video Solution:

Q9. Text Solution:

Total number of 70% Alcohol sanitizers sold by all the five states together

$= 2100 \times \frac{15}{100} + 4300 \times \frac{35}{100} + 3600 \times \frac{25}{100}$

$+ 800 \times \frac{45}{100}$

$+ 1300 \times \frac{20}{100}$

$= 315 + 1505 + 900 + 360 + 260 = 3340$

Required average $= \frac{3340}{5} = 668$

The answer is option D.

Video Solution:

Q10. Text Solution:

States	Sanitizers that can be sold	70% Alcohol sanitizers sold (in%)	30% Alcohol : 0% Alcohol sanitizers	30% Alcohol sanitizers sold (in %)
U.P.	2300	15%	9: 8	85% × 9/17 = 45%
West Bengal	4500	35%	5:8	65% × 5/13 = 25%
Telangana	3800	25%	4:5	75% × 4/9=1003%
Gujarat	1000	45%	5:3	55% × 5/8=2758%
Delhi	1500	20%	8:5	80% × 8/13=64013%

So, we can infer that the number of 30% Alcohol sanitizers sold in the states are:

U.P. : $45\% \times (2300 - 200) = 945$

West Bengal: $25\% \times (4500 - 200) = 1075$

Telangana: $(3800 - 200) \times 75\% \times \frac{4}{9} = 1200$

Gujarat: $(1000 - 200) \times 55\% \times \frac{5}{8} = 275$

Delhi: $(1500 - 200) \times 80\% \times \frac{8}{13} = 640$

Hence the average is

$= \frac{945+1075+1200+275+640}{5} = 827.$

The answer is option D.

Video Solution:

Q11. Text Solution:

From the second information, we get that the unit rates per album are distinct integers and the highest being \$6. So, the price/unit of the albums are \$1, \$2, \$3, \$4, \$5 & \$6

Also, it is given that the units sold in millions of \$ are separate integers.

So, the unit price of Snoop's album is \$1 as 17 is a prime number, and the only number that divides

that apart from the number itself is 1.
Let's collate the data of the artists in the tabular format:

Artist	Unit Price	Units Sold	Revenue
Eminem			21
Snoop	1	17	17
Dre			22
Moosewala			24
Kayne			20
Tupac			30

Also, the factors of 22 are 2 & 11. $11 can not be the price of the album/unit as the maximum price is $6.
Thus, the unit price of Dre's album is $2.
Using the same logic, we can find the factors of 21 to be 3 & 7 out of which $7 can not be the price of an album/unit. Thus, Eminem's album's unit price is $3.
Now, the table looks like below:

Artist	Unit Price	Units Sold	Revenue
Eminem	3	7	21
Snoop	1	17	17
Dre	2	11	22
Moosewala			24
Kayne			20
Tupac			30

Now, there are two possibilities depending upon which album's unit price is $5.

Case – 1

Artist	Unit Price	Units Sold	Revenue
Eminem	3	7	21
Snoop	1	17	17
Dre	2	11	22
Moosewala	4	6	24
Kayne	5	4	20
Tupac	6	5	30

Case – 2

Artist	Unit Price	Units Sold	Revenue
Eminem	3	7	21
Snoop	1	17	17
Dre	2	11	22
Moosewala	6	4	24
Kayne	4	5	20
Tupac	5	6	30

The difference between the unit price of Tupac and Kayne remains the same i.e., $1 from both the tables.

Video Solution:

Q12. Text Solution:

Case – 1

Artist	Unit Price	Units Sold	Revenue
Eminem	3	7	21
Snoop	1	17	17
Dre	2	11	22
Moosewala	4	6	24
Kayne	5	4	20
Tupac	6	5	30

Case – 2

Artist	Unit Price	Units Sold	Revenue
Eminem	3	7	21
Snoop	1	17	17
Dre	2	11	22
Moosewala	6	4	24
Kayne	4	5	20
Tupac	5	6	30

Considering Case – 1 to be true, Drake's album's revenue is $5 x 1.5 x 7 Million = $52.5. As none of the albums revenue in ($ Million) is a fraction, so Case 1 cannot be true.
Now, considering case – 2, Drake's album's revenue is $6 x 7 Million = $42 Million = $22 Million + $ 20 Million. Thus, case 2 holds true.
Hence, 1 Moosewala album and 2 Tupac albums will cost $6 + $5 x 2 = $16

Video Solution:

Q13. Text Solution:

Case – 1

Artist	Unit Price	Units Sold	Revenue
Eminem	3	7	21
Snoop	1	17	17
Dre	2	11	22
Moosewala	4	6	24

Kayne	5	4	20
Tupac	6	5	30

Case – 2

Artist	Unit Price	Units Sold	Revenue
Eminem	3	7	21
Snoop	1	17	17
Dre	2	11	22
Moosewala	6	4	24
Kayne	4	5	20
Tupac	5	6	30

From both the tables we can see Dre will have the second highest number of units sold.

Video Solution:

Q14. Text Solution:

Case – 1

Artist	Unit Price	Units Sold	Revenue
Eminem	3	7	21
Snoop	1	17	17
Dre	2	11	22
Moosewala	4	6	24
Kayne	5	4	20
Tupac	6	5	30

Case – 2

Artist	Unit Price	Units Sold	Revenue
Eminem	3	7	21
Snoop	1	17	17
Dre	2	11	22
Moosewala	6	4	24
Kayne	4	5	20
Tupac	5	6	30

The Grammy score for Case – 1 and Case – 2 are shown below:

Case – 1

Artists	**Unit Price**	**Units Sold**	**Revenue**	**Grammy Score**
Eminem	3	7	21	63
Snoop	1	17	17	85
Dre	2	11	22	77
Moosewala	4	6	24	66
Kayne	5	4	20	52
Tupac	6	5	30	75

Case – 2

Artists	**Unit Price**	**Units Sold**	**Revenue**	**Grammy Score**
Eminem	3	7	21	63
Snoop	1	17	17	85
Dre	2	11	22	77
Moosewala	6	4	24	60
Kayne	4	5	20	55
Tupac	5	6	30	78

From both the cases we can say that Snoop is the Grammy winner.

Video Solution:

Q15. Text Solution:

Case – 1

Artist	Unit Price	Units Sold	Revenue
Eminem	3	7	21
Snoop	1	17	17
Dre	2	11	22
Moosewala	4	6	24
Kayne	5	4	20
Tupac	6	5	30

Case – 2

Artist	Unit Price	Units Sold	Revenue
Eminem	3	7	21
Snoop	1	17	17
Dre	2	11	22
Moosewala	6	4	24
Kayne	4	5	20
Tupac	5	6	30

From Case – 1 we can say that Kayne has the least Album sold.

From Case – 2 we can say that Moosewala has the lease albums sold.

Video Solution:

Q16. Text Solution:

Let us assume that the number of wickets taken by Jadeja, Ashwin, Axar, Shami, Siraj are a, b, c, d, e respectively. So, the total runs conceded by Ashwin is 15b. Shami has conceded 25d

So, 15b - 25d = 150

=> 3b - 5d = 30

=> 5d = 3b - 30

b should be a multiple of 5. Thus, b can assume values like 15, 20, 25 ... and so on

Hence, d can assume values like 3, 6, 9 ... and so on

Jadeja has taken a = 2d number of wickets.

So, the total runs conceded by Jadeja will be 36d.

The runs conceded by Jadeja will be the minimum when d is the minimum.

The minimum value that can be assumed by d is 3.

Thus, the answer is 36 x 3 = **108**.

Video Solution:

Q17. Text Solution:

Let us assume that the number of wickets taken by Jadeja, Ashwin, Axar, Shami, Siraj are a, b, c, d, e respectively.

Given, b : c = 5 : 1

=> b = 5c

Runs conceded by Ashwin is 15b = 75c and that Axar is 20c.

Thus the answer is 75c : 20c = 15 : 4

Therefore, p : q = 15 : 4

So, p + q = 15 + 4 = **19.**

Video Solution:

Q18. Text Solution:

Siraj took 50 wickets. So, his total runs conceded will be 50 x 30 = 1500

Shami has conceded an equal number of runs.

So, the number of wickets taken by Shami is $\frac{1500}{25}$ = 60.

Thus, the answer is 60.

Video Solution:

Q19. Text Solution:

As the bowlers remained wicketless and conceded some runs, this will increase their bowling average from the existing one.

Thus, Siraj will have an average which is more than 30. So, his average will be 36. Thus, the runs conceded by him will be a multiple of 6 (36 - 30). So, he conceded either 30 or 66.

Similarly, Shami will have an average which is more than 25. Thus, Shami's average will become 29. So he conceded runs which is divisible by 4 (29 - 25). Thus, 32 is the only possible answer.

Using the same logic, Axar's average will become 25. Run conceded by Axar has to be divisible by 5 (25 - 20). Thus, he conceded 30 runs and Siraj conceded 66 runs.

Jadeja's average will become 20 and he will concede a run which is divisible by 2. Thus, Jadeja conceded 26 runs.

Ashwin's average will become 18 and he conceded 63 runs.

Let us assume that the number of wickets taken by Jadeja, Ashwin, Axar, Shami, Siraj are a, b, c, d, e respectively.

So,

18a + 26 = 20a

=> a = 13

15b + 63 = 18b

=> b = 21

20c + 30 = 25c

=>c = 6
25d + 32 = 29d
=>d = 8
Also,
30e + 66 = 36e
=> e = 11
Thus, the sum of the wickets taken by Jadeja and Siraj is (11 + 13) = **24**.

Video Solution:

Q20. Text Solution:

As the bowlers remained wicketless and conceded some runs, this will increase their bowling average from the existing one.
Thus, Siraj will have an average which is more than 30. So, his average will be 36. Thus, the runs conceded by him will be a multiple of 6 (36 - 30).
So, he conceded either 30 or 66.
Similarly, Shami will have an average which is more than 25. Thus, Shami's average will become 29. So he conceded runs which is divisible by 4 (29 - 25). Thus, 32 is the only possible answer.
Using the same logic, Axar's average will become 25. Run conceded by Axar has to be divisible by 5 (25 - 20). Thus, he conceded 30 runs and Siraj conceded 66 runs.
Jadeja's average will become 20 and he will concede a run which is divisible by 2. Thus, Jadeja conceded 26 runs.
Ashwin's average will become 18 and he conceded 63 runs.
Let us assume that the number of wickets taken by Jadeja, Ashwin, Axar, Shami, Siraj are a, b, c, d, e respectively.
So,
18a + 26 = 20a
=> a = 13
15b + 63 = 18b
=> b = 21
20c + 30 = 25c
=>c = 6
25d + 32 = 29d
=>d = 8
Also,
30e + 66 = 36e
=> e = 11
The most runs conceded is 36 x 11 = 396 runs and is conceded by Siraj.
The least run is conceded by Axar who conceded only 25 x 6 = 150.
Thus, the difference in the wickets is (11- 6) = **5**.

Video Solution:

Q21. Text Solution:

The number of T3 tickets sold in each of the locations were the same and is equal to 120/location.
In Delhi, 50% of the tickets T1 was and the ratio of tickets sold for T1 and T2 in Delhi is 5 : 2.
5x = 50%
x = 10% then 2x = 20%.
T3 = 100 - 50 - 20 = 30%
So, the total number of seats in Delhi = $\frac{120}{30}$% = 400
Similarly we can find for all locations,
Number of seats in Mumbai is $\frac{120}{30}$% = 400
Number of seats in Kolkata is $\frac{120}{10}$% = 1200
Number of seats in Bangalore is $\frac{120}{20}$% = 600
The below ticket can be obtained by splitting the total tickets into T1, T2 & T3.

Location	Total Tickets	T1	T2	T3
Delhi	400	200	80	120
Mumbai	400	120	160	120
Kolkata	1200	720	360	120
Bangalore	600	240	240	120

The cheapest ticket is T3 which has a price of $1.
The cost of T1 = $2, T2 = $3.
Now multiplying the seat counts with the seat price we can get the total revenue.
So, the updated table looks like this-

		Seat Count			Revenue			
Location	Total Tickets	T1	T2	T3	T1	T2	T3	City Total
Delhi	400	200	80	120	$ 400	$ 240	$ 120	$ 760
Mumbai	400	120	160	120	$ 240	$ 480	$ 120	$ 840
Kolkata	1200	720	360	120	$ 1,440	$ 1,080	$ 120	$ 2,640

Bangalore	600	240	240	120	$ 480	$ 720	$ 120	$ 1,320
Total	**2600**	**1280**	**840**	**480**	**$ 2,560**	**$ 2,520**	**$ 480**	**$ 5,560**

Thus, the total revenue is **$5560**.

Video Solution:

Q22. **Text Solution:**

We can calculate the average cost/ticket by dividing the total cost of ticket in a city by the total number of tickets sold in that city.

		Seat Count			Revenue				
Location	**Total Tickets**	**T1**	**T2**	**T3**	**T1**	**T2**	**T3**	**City Total**	**Avg Price /Ticket**
Delhi	400	200	80	120	$ 400	$ 240	$ 120	$ 760	$ 1.90
Mumbai	400	120	160	120	$ 240	$ 480	$ 120	$ 840	$ 2.10
Kolkata	1200	720	360	120	$ 1,440	$ 1,080	$ 120	$ 2,640	$2.20
Bangalore	600	240	240	120	$ 480	$ 720	$ 120	$ 1,320	$2.20
Total	**2600**	**1280**	**840**	**480**	**$ 2,560**	**$ 2,520**	**$ 480**	**$ 5,560**	

Delhi sold the minimum number of T2 tickets. So, it's sale from the T1 tickets is **$400**.

Video Solution:

Q23. **Text Solution:**

We can calculate the average cost/ticket by dividing the total cost of ticket in a city by the total number of tickets sold in that city.

		Seat Count			Revenue				
Location	**Total Tickets**	**T1**	**T2**	**T3**	**T1**	**T2**	**T3**	**City Total**	**Avg Price /Ticket**
Delhi	400	200	80	120	$ 400	$ 240	$ 120	$ 760	$ 1.90
Mumbai	400	120	160	120	$ 240	$ 480	$ 120	$ 840	$ 2.10
Kolkata	1200	720	360	120	$ 1,440	$ 1,080	$ 120	$ 2,640	$2.20
Bangalore	600	240	240	120	$ 480	$ 720	$ 120	$ 1,320	$2.20
Total	**2600**	**1280**	**840**	**480**	**$ 2,560**	**$ 2,520**	**$ 480**	**$ 5,560**	

Mumbai sold the minimum number of T1 tickets.
So, it's sale from the T2 tickets is **$480**.

Video Solution:

Q24. **Text Solution:**

We can calculate the average cost/ticket by dividing the total cost of a ticket in a city by the total number of tickets sold in that city.

		Seat Count			Revenue				
Location	**Total Tickets**	**T1**	**T2**	**T3**	**T1**	**T2**	**T3**	**City Total**	**Avg Price /Ticket**
Delhi	400	200	80	120	$ 400	$ 240	$ 120	$ 760	$ 1.90
Mumbai	400	120	160	120	$ 240	$ 480	$ 120	$ 840	$ 2.10
Kolkata	1200	720	360	120	$ 1,440	$ 1,080	$ 120	$ 2,640	$2.20
Bangalore	600	240	240	120	$ 480	$ 720	$ 120	$ 1,320	$2.20
Total	**2600**	**1280**	**840**	**480**	**$ 2,560**	**$ 2,520**	**$ 480**	**$ 5,560**	

As seen from the table, **Mumbai** has the second lowest average price/ticket.

Video Solution:

Q25. **Text Solution:**

We can calculate the average cost/ticket by dividing the total cost of ticket in a city by the total number of tickets sold in that city.

		Seat Count			Revenue				
Location	**Total Tickets**	**T1**	**T2**	**T3**	**T1**	**T2**	**T3**	**City Total**	**Avg Price /Ticket**
Delhi	400	200	80	120	$ 400	$ 240	$ 120	$ 760	$ 1.90
Mumbai	400	120	160	120	$ 240	$ 480	$ 120	$ 840	$ 2.10
Kolkata	1200	720	360	120	$ 1,440	$ 1,080	$ 120	$ 2,640	$2.20
Bangalore	600	240	240	120	$ 480	$ 720	$ 120	$ 1,320	$2.20
Total	**2600**	**1280**	**840**	**480**	**$ 2,560**	**$ 2,520**	**$ 480**	**$ 5,560**	

Total cost of booking auditorium in Kolkata is 1200 $0.5 = $600.

So, the total profit from Kolkata is $2640 - $600 = **$2040**.

Video Solution:

Q26. **Text Solution:**

Inference from the graph –

The graph gives the average grade for each attribute given by the five selectors. We can calculate the total that each has got.

Batting = 2.2 x 5 = 11

Bowling = 3.2 x 5 = 16

Wicket keeping = 1.8 x 5 = 9

Fielding = 2.8 x 5 = 14

Inference from the table –

The table gives the list of attributes that were not marked 1 or 4 by selectors. That would mean that it is the list of what they marked 2 or 3.

Following inference can be drawn:

	Batting	Bowling	Wicket keeping	Fielding
A	1/4	2/3	3/2	4/1
B	1/4	2/3	3/2	4/1
C	2/3	1/4	4/1	3/2
D	2/3	1/4	4/1	3/2
E	1/4	2/3	3/2	4/1
Total	11	16	9	14

Inference from additional condition:

Condition: The attribute 'Wicket keeping' did not get the highest grade from any of the selectors. That would mean that Wicket keeping cannot get 4.

The table can be refined as –

	Batting	Bowling	Wicket keeping	Fielding
A	1/4	2/3	3/2	4/1
B	1/4	2/3	3/2	4/1
C	2/3	4	1	3/2
D	2/3	4	1	3/2
E	1/4	2/3	3/2	4/1
Total	11	16	9	14

Wicket keeping = A + B + C + D + E = 9

Since, C = D = 1

A + B + E = 7, where A, B and E are either 2 or 3.

There is only one possibility 3 + 2 + 2 = 7

Bowling = A + B + C + D + E = 16

Since, C = D = 4

A + B + E = 8, where A, B and E are either 2 or 3.

There is only one possibility 2 + 3 + 3 = 8

So, the table for wicket keeping and bowling would be –

	Bowling	Wicket keeping
A/B/E	2	3
A/B/E	3	2
C	4	1
D	4	1
A/B/E	3	2
Total	16	9

1 selector gave a higher grade to wicketkeeping than bowling.

Video Solution:

Q27. **Text Solution:**

Inference from the graph –

The graph gives the average grade for each attribute given by the five selectors. We can calculate the total that each has got.

Batting = 2.2 × 5 = 11

Bowling = 3.2 × 5 = 16
Wicket keeping = 1.8 × 5 = 9
Fielding = 2.8 × 5 = 14
Inference from the table –
The table gives the list of attributes that were not marked 1 or 4 by selectors. That would mean that it is the list of what they marked 2 or 3.
Following inference can be drawn:

	Batting	Bowling	Wicket keeping	Fielding
A	1/4	2/3	3/2	4/1
B	1/4	2/3	3/2	4/1
C	2/3	1/4	4/1	3/2
D	2/3	1/4	4/1	3/2
E	1/4	2/3	3/2	4/1
Total	11	16	9	14

Inference from additional condition:
Condition: The attribute 'Wicket keeping' did not get the highest grade from any of the selectors.
That would mean that Wicket keeping cannot get 4.
The table can be refined as –

	Batting	Bowling	Wicket keeping	Fielding
A	1/4	2/3	3/2	4/1
B	1/4	2/3	3/2	4/1
C	2/3	4	1	3/2
D	2/3	4	1	3/2
E	1/4	2/3	3/2	4/1
Total	11	16	9	14

Wicket keeping = A + B + C + D + E = 9
Since, C = D = 1
A + B + E = 7, where A B and E is either 2 or 3.
There is only one possibility 3 + 2 + 2 = 7
Bowling = A + B + C + D + E = 16
Since, C = D = 4
A + B + E = 8, where A B and E is either 2 or 3.
There is only one possibility 2 + 3 + 3 = 8
So, the table for wicket keeping and bowling would be –

	Bowling	Wicket keeping
A/B/E	2	3
A/B/E	3	2
C	4	1
D	4	1
A/B/E	3	2
Total	16	9

Condition: A and B gave the same grade to attribute Batting.
First, let us get a handle of the grades of batting.

	Batting
A	1/4
B	1/4
C	2/3
D	2/3
E	1/4
Total	11

Since A and B gave the same grade to attribute Batting, either A = B = 1 OR A = B = 4.
Now, if A = B = 4, then
A + B + C + D + E = 11
A + B = 4 + 4 = 8
C + D + E = 3, that would be C = D = E = 1, which is not possible.
So, A = B = 1
Therefore, A must grade batting as 1. That eliminates option B), C) and D).

Video Solution:

Q28. **Text Solution:**
Inference from the graph –
The graph gives the average grade for each attribute given by the five selectors. We can calculate the total that each has got.
Batting = 2.2 x 5 = 11
Bowling = 3.2 x 5 = 16
Wicket keeping = 1.8 x 5 = 9
Fielding = 2.8 x 5 = 14
Inference from the table –
The table gives the list of attributes that were not marked 1 or 4 by selectors. That would mean that it is the list of what they marked 2 or 3.
Following inference can be drawn:

	Batting	Bowling	Wicket keeping	Fielding
A	1/4	2/3	3/2	4/1
B	1/4	2/3	3/2	4/1
C	2/3	1/4	4/1	3/2
D	2/3	1/4	4/1	3/2
E	1/4	2/3	3/2	4/1
Total	11	16	9	14

Inference from additional condition:
Condition: The attribute 'Wicket keeping' did not get the highest grade from any of the selectors.
That would mean that Wicket keeping cannot get 4.
The table can be refined as –

	Batting	Bowling	Wicket keeping	Fielding
A	1/4	2/3	3/2	4/1
B	1/4	2/3	3/2	4/1
C	2/3	4	1	3/2
D	2/3	4	1	3/2
E	1/4	2/3	3/2	4/1
Total	11	16	9	14

Wicket keeping = A + B + C + D + E = 9
Since, C = D = 1
A + B + E = 7, where A B and E are either 2 or 3.
There is only one possibility 3 + 2 + 2 = 7
Bowling = A + B + C + D + E = 16
Since, C = D = 4
A + B + E = 8, where A B and E are either 2 or 3.
There is only one possibility 2 + 3 + 3 = 8
So, the table for wicket keeping and bowling would be –

	Bowling	Wicket keeping
A/B/E	2	3
A/B/E	3	2
C	4	1
D	4	1
A/B/E	3	2
Total	16	9

A and B's grade for Batting is 1. There are two options that satisfy that condition. We cannot be sure of the answer.
We infer the following –

	Bowling	Wicket keeping
A/B/E	2	3
A/B/E	3	2
C	4	1
D	4	1
A/B/E	3	2
Total	16	9

	Batting	Fielding
A	1	4
B	1	4
C/D	2	3
D/C	3	2
E	4	1
Total	11	14

Combining the above two tables –

	Batting	Bowling	Wicket keeping	Fielding
A	1	2/3	3/2	4
B	1	2/3	3/2	4
C	2/3	4	1	3/2
D	3/2	4	1	2/3
E	1	2/3	3/2	4
Total	11	16	9	14
Values		(2, 3, 3, 4, 4)	(1, 1, 2, 2 3)	

Wicket keeping: A graded higher than E
That would mean that A graded 3 and E graded 2.
Now, since for Wicket keeping the possible values are (1, 1, 2, 2, 3)
B must grade 2 for Wicket keeping.
So, the grade of B would be:
Batting – 1, Bowling – 3, Wicket keeping – 2, Fielding – 4

Video Solution:

Q29. Text Solution:
Inference from the graph –
The graph gives the average grade for each attribute given by the five selectors. We can calculate the total that each has got.
Batting = 2.2 x 5 = 11
Bowling = 3.2 x 5 = 16
Wicket keeping = 1.8 x 5 = 9
Fielding = 2.8 x 5 = 14
Inference from the table –
The table gives the list of attributes that were not marked 1 or 4 by selectors. That would mean that it is the list of what they marked 2 or 3.
Following inference can be drawn:

	Batting	Bowling	Wicket keeping	Fielding
A	1/4	2/3	3/2	4/1

B	1/4	2/3	3/2	4/1
C	2/3	1/4	4/1	3/2
D	2/3	1/4	4/1	3/2
E	1/4	2/3	3/2	4/1
Total	11	16	9	14

Inference from additional condition:

Condition: The attribute 'Wicket keeping' did not get the highest grade from any of the selectors. That would mean that Wicket keeping cannot get 4.

The table can be refined as –

	Batting	Bowling	Wicket keeping	Fielding
A	1/4	2/3	3/2	4/1
B	1/4	2/3	3/2	4/1
C	2/3	4	1	3/2
D	2/3	4	1	3/2
E	1/4	2/3	3/2	4/1
Total	11	16	9	14

Wicket keeping = A + B + C + D + E = 9

Since, C = D = 1

A + B + E = 7, where A B and E are either 2 or 3.

There is only one possibility 3 + 2 + 2 = 7

Bowling = A + B + C + D + E = 16

Since, C = D = 4

A + B + E = 8, where A, B and E are either 2 or 3.

There is only one possibility 2 + 3 + 3 = 8

So, the table for wicket keeping and bowling would be –

	Bowling	Wicket keeping
A/B/E	2	3
A/B/E	3	2
C	4	1
D	4	1
A/B/E	3	2
Total	16	9

Since A = B = 1, A + B = 2

C + D + E = 9

Given that C = 2 or 3; D = 2 or 3 and E = 1 or 4, the only combination that will get us to 9 is 2 + 3 + 4 = 9

	Batting
A	1
B	1
C/D	2
D/C	3
E	4
Total	11

The above will give the accurate list for fielding

	Batting	Fielding
A	1	4
B	1	4
C/D	2	3
D/C	3	2
E	4	1
Total	11	14

Since E's grade is discredited, the new total of Fielding would be 13.

Average = $\frac{13}{4}$ = 3.25.

Video Solution:

Q30. Text Solution:

Inference from the graph –

The graph gives the average grade for each attribute given by the five selectors. We can calculate the total that each has got.

Batting = 2.2 x 5 = 11

Bowling = 3.2 x 5 = 16

Wicket keeping = 1.8 x 5 = 9

Fielding = 2.8 x 5 = 14

Inference from the table –

The table gives the list of attributes that were not marked 1 or 4 by selectors. That would mean that it is the list of what they marked 2 or 3.

Following inference can be drawn:

	Batting	Bowling	Wicket keeping	Fielding
A	1/4	2/3	3/2	4/1
B	1/4	2/3	3/2	4/1
C	2/3	1/4	4/1	3/2
D	2/3	1/4	4/1	3/2
E	1/4	2/3	3/2	4/1
Total	11	16	9	14

Inference from additional condition :

Condition: The attribute 'Wicket keeping' did not get the highest grade from any of the selectors. That would mean that Wicket keeping cannot get 4.

The table can be refined as –

	Batting	Bowling	Wicket keeping	Fielding
A	1/4	2/3	3/2	4/1
B	1/4	2/3	3/2	4/1
C	2/3	4	1	3/2
D	2/3	4	1	3/2
E	1/4	2/3	3/2	4/1
Total	11	16	9	14

Wicket keeping = A + B + C + D + E = 9

Since, C = D = 1

A + B + E = 7, where A , B and E are either 2 or 3.

There is only one possibility 3 + 2 + 2 = 7

Bowling = A + B + C + D + E = 16

Since, C = D = 4

A + B + E = 8, where A, B and E are either 2 or 3.

There is only one possibility 2 + 3 + 3 = 8

So, the table for wicket keeping and bowling would be –

	Bowling	Wicket keeping
A/B/E	2	3
A/B/E	3	2
C	4	1
D	4	1
A/B/E	3	2
Total	16	9

Since A = B = 1, A + B = 2

C + D + E = 9

Given that C = 2 or 3; D = 2 or 3 and E = 1 or 4, the only combination that will get us to 9 is 2 + 3 + 4 = 9

	Batting
A	1
B	1
C/D	2
D/C	3
E	4
Total	11

The above will give the accurate list for Batting,

	Batting	Fielding
A	1	4
B	1	4
C/D	2	3
D/C	3	2
E	4	1
Total	11	14

Thus, the answer is $\frac{11-1}{4}$ = 2.5.

Video Solution: