

MBA PIONEER 2024

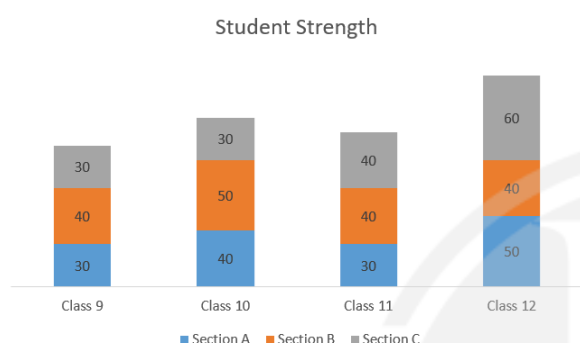
Data Interpretation & Logical Reasoning

DPP: 11

Bar Graphs

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

Shimla High School analysed the below data of the class 9, 10, 11 & 12 students-



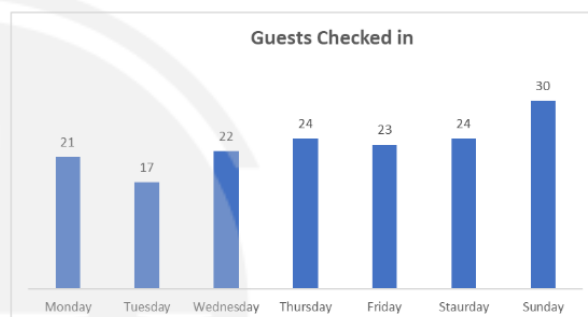
- Q1** What is the total strength of the four classes of the Shimla School?
 (A) 500 (B) 480
 (C) 460 (D) 440
- Q2** What is the average number of students in section A?
 (A) 34.25 (B) 35.50
 (C) 36.25 (D) 37.50
- Q3** Students from which section is the highest?
 (A) A (B) B
 (C) C (D) Both B & C
- Q4** If the school fees of the classes are \$4, \$5, \$6, \$10 respectively for class 9, 10, 11 & 12 respectively then what is the total revenue of the school from these classes (in \$)?
 (A) 3030 (B) 3160
 (C) 3230 (D) 3360
- Q5** If the ratio of boys and girls in section A, B & C of all four classes combined are 3 : 2, 1

: 1 & 2 : 3 respectively, then the number of girls in these four classes will be ____

- (A) 240 (B) 241
 (C) 242 (D) 243

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

In Hotel Manali, below chart shows the number of people who checked in a week-



- Q6** What is the average number of check-ins per day in that week?
 (A) 21 (B) 22
 (C) 23 (D) 24
- Q7** In how many days more people checked in than the average in the 7 days?
 (A) 2 (B) 3
 (C) 4 (D) 5
- Q8** Every person stays for exactly 2 days and each of them occupies exactly one room. Then minimum how many rooms the hotel has?
 (A) 51 (B) 52
 (C) 53 (D) 54
- Q9** For how many days from Tuesday, the number of check-ins are less than that of the previous day?
 (A) 1 (B) 2



(C) 3

(D) 4

Q10 The per-day room rates are \$10. Then find the total revenue (in \$) of the hotel from that week assuming every person stays for exactly 2 days and each of them occupies exactly one room. Also, assume that the room rent is paid on the very first day of the stay.

(A) 3220

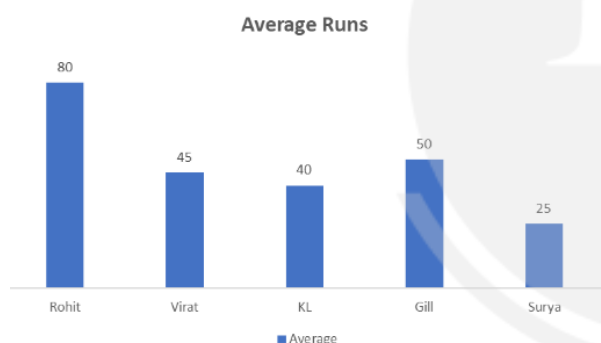
(B) 3450

(C) 3130

(D) 4230

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

The below chart shows the batting average of 5 Indian batsmen in ODI matches. The batting average is defined as the ratio of total runs scored and number of times the player got out. So, if Sachin, a batsman, played 100 matches, out of which he got out 80 times and scored total 5600 runs then the average is $\frac{5600}{80} = 70$ runs.



Q11 Which player has scored the highest run in ODI?

(A) Rohit

(B) Gill

(C) Virat

(D) Cannot be determined

Q12 Which player has scored the highest run in the ODI if it is given that none of them played less than 80 matches and more than 100 matches?

(A) Rohit

(B) Gill

(C) Virat

(D) Cannot be determined

Q13 Which player has scored the highest run in the ODI if it is given that none of them played less than 80 matches and more than 100 matches and each player got out at least in 90% of the matches he played?

(A) Rohit

(B) Gill

(C) Virat

(D) Cannot be determined

Q14 In the next match, scores by Rohit, Virat, KL, Gill and Surya are 0 (out), 120 (not out), 20 (out), 100 (not out), 50 (out) respectively. The average score after this match became 70, 51, 38.75, 58.33, 26.67 respectively. Who has the most score after this match?

(A) Rohit

(B) Virat

(C) Gill

(D) Cannot be determined

Q15 Surya had a terrific knock in the next 4 matches and he scored at most 140 in each of the matches and was not out in each of the matches. If it is known that after these 4 matches his new average is 40, then which of the below can be inferred if he got out in 36 matches?

(A) His minimum possible score can be 120 in the last 4 matches

(B) His minimum possible score can be 105 in the last 4 matches

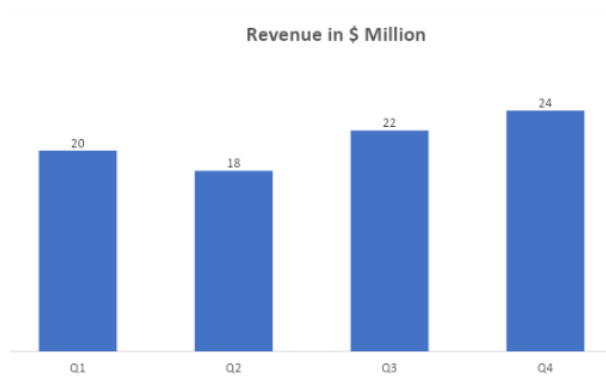
(C) His minimum possible score can be 108 in the last 4 matches

(D) His minimum possible score can be 126 in the last 4 matches

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

The revenue of ABC Pvt LTD across 4 quarters in 2022 is shown in the chart below–


[Android App](#)
[iOS App](#)
[PW Website](#)



The profit of a company is equal to Revenue – Cost.

Q16 If the cost in Q1 is \$ 15 Million. The profit in the 4 quarters Q1, Q2, Q3, Q4 are in the ratio of 1 : 2 : 3 : 2. Then find the total cost in Q2 & Q4

- (A) \$12 Million
(B) \$22 Million
(C) \$18 Million
(D) \$24 Million

Q17 If the cost in Q1 is \$ 15 Million. The profit in the 4 quarters Q1, Q2, Q3, Q4 are in the ratio of 1 : 2 : 3 : 2., then find the % increase in cost from Q2 to Q4?

- (A) 75% (B) 55%
(C) 60% (D) 65%

Q18 Because of Global Financial turmoil, ABC company is projecting total revenue for 2023 to be down by 14.29% with respect to 2022 and the ratio of the projected revenues in Q1, Q2, Q3 & Q4 is 2 : 3 : 3 : 4. Then find out the projected revenue from Q4 in 2023

- (A) \$20 Million (B) \$24 Million
(C) \$12 Million (D) \$18 Million

Q19 Because of Global Financial turmoil, ABC company is projecting total revenue for 2023 to be down by 14.29% with respect to 2022 and the ratio of the projected revenues in Q1, Q2, Q3 & Q4 is 2 : 3 : 3 : 4, if the quarterly costs in Q1, Q2, Q3 & Q4 are

in the ratio of 1 : 2 : 1 : 2 respectively and the savings are in the ratio of 1 : 1 between Q3 and Q4 then find the total projected savings of Q1 & Q4 combined in 2023 (in \$ Million)

- (A) 12 (B) 24
(C) 20 (D) 18

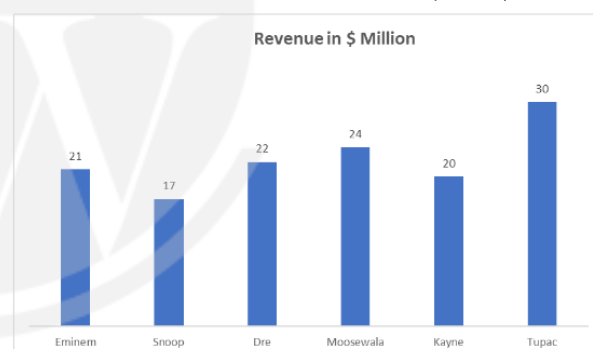
Q20 In Q4 of 2022, ABC incurred a sudden cost of \$40 Million because of which it ended the year with no profit, no loss. If the ratio of profits in Q1, Q2 & Q3 is 4 : 3 : 1, then find the total cost in Q1 & Q3 (in \$ Million).

- (A) 32 (B) 34
(C) 36 (D) 38

Directions (21–25) 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 costliest album costs \$6/unit.

Q21 What is the difference between the rates of Tupac and Kanye in \$/unit?

- (A) 1 (B) 2
(C) 3 (D) 4

Q22



Drake, another artist, has the unit price of his album 50% more than 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

Q23 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

Q24 Grammy Award is presented to one of these 6 artists. Each of the artists get a score as below-

$$\text{Score} = (\text{Number of Units Sold in Million}) \times 3 + (\text{Revenue in Million \$}) \times 2$$

If the artist with the highest score gets the award, then who gets the award?

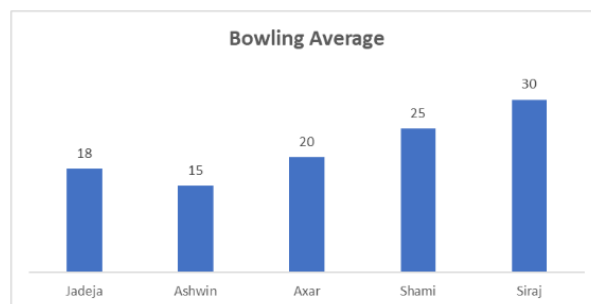
- (A) Tupac (B) Moosewala
(C) Dre (D) Snoop

Q25 Whose album was sold the least?

- (A) Tupac (B) Moosewalla
(C) Kayne (D) Either b or c

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

The bowling averages of different bowlers are shown in the below chart. 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.



Q26 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.

Q27 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 $p + q$.

Q28 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.

Q29 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.

Q30 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.



Answer Key

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

Q16 (B)
Q17 (A)
Q18 (B)
Q19 (D)
Q20 (A)
Q21 (A)
Q22 (B)
Q23 (C)
Q24 (D)
Q25 (D)
Q26 108
Q27 19
Q28 60
Q29 24
Q30 5



Hints & Solutions

Q1. Text Solution:

Total strength in class 9 is $(30 + 40 + 30) = 100$
 Total strength in class 10 is $(50 + 40 + 30) = 120$
 Total strength in class 11 is $(40 + 40 + 30) = 110$
 Total strength in class 12 is $(50 + 40 + 60) = 150$
 Thus, the total strength is $(100 + 120 + 110 + 150)$
 = **480**

Option B

Q2. Text Solution:

Total strength of Section A in class 9 is 30.
 Total strength of Section A in class 10 is 40.
 Total strength of Section A in class 11 is 30.
 Total strength of Section A in class 12 is 50.
 Total strength in section A = 150
 Thus, the average is $\frac{(30+40+30+50)}{4} = 37.50$

Option D

Q3. Text Solution:

Total strength of Section B in class 9 is 40.
 Total strength of Section B in class 10 is 50.
 Total strength of Section B in class 11 is 40.
 Total strength of Section B in class 12 is 40.
 Total strength of section B is $(40 + 50 + 40 + 40)$
 = 170
 Total strength of section C = $(480 - 150 - 170) =$
 160.

Thus, the answer is section **B**.

Option B

Q4. Text Solution:

Total revenue from class 9 = $\$4 \times 100 = \400
 Total revenue from class 10 = $\$5 \times 120 = \600
 Total revenue from class 11 = $\$6 \times 110 = \660
 Total revenue from class 12 = $\$10 \times 150 = \1500
 Hence, the total revenue of the school from these 4 classes is
 $(\$400 + \$600 + \$660 + \$1500) = \text{\$3160}.$

Option B

Q5. Text Solution:

Total strength of Section A in class 9 is 30.
 Total strength of Section A in class 10 is 40.
 Total strength of Section A in class 11 is 30.

Total strength of Section A in class 12 is 50.

Total strength in section A = 150

Total strength of Section B in class 9 is 40.

Total strength of Section B in class 10 is 50.

Total strength of Section B in class 11 is 40.

Total strength of Section B in class 12 is 40.

Total strength of section B is $(40 + 50 + 40 + 40)$
 = 170

Total strength of section C = $(480 - 150 - 170)$
 = 160.

Number of girls in section A = $150 \times \frac{2}{5} = 60$

Number of girls in section B = $170 \times \frac{1}{2} = 85$

Number of girls in section C = $160 \times \frac{3}{5} = 96$

Hence, the total number of girls students is
 $(60 + 85 + 96) = \text{241}.$

Option B

Q6. Text Solution:

The average number of check ins per day

$$= \frac{(21 + 17 + 22 + 24 + 23 + 24 + 30)}{7}$$

$$= \frac{161}{7} = 23$$

Thus, the answer is **23**.

Option C

Q7. Text Solution:

The average number of check ins per day

$$= \frac{(21 + 17 + 22 + 24 + 23 + 24 + 30)}{7}$$

$$= \frac{161}{7} = 23$$

On **Thursday, Saturday, and Sunday** more than 23 people checked in.

Option B

Q8. Text Solution:

As every person stays for exactly 2 days and each of them occupy exactly one room, the hotel accommodates 2 consecutive days' total



crowd at max. So, the maximum crowd handled by them is $(24 + 30) = 54$.

Thus, they need to have at least **54** rooms.

Option D

Q9. Text Solution:

As seen from the graph, only on Friday, the number of people who checked in was less than that of the previous day. Thus, the answer is **1**.

Option A

Q10. Text Solution:

The total bill paid by the people who checked in on Monday is $\$21 \times 2 \times 10$.

Similarly, we can find the bills paid by the people who checked in on the other days.

Thus the answer is

$$(\$21 + 17 + 22 + 24 + 23 + 24 + 30) \times 2 \times 10 = \text{\$3220}$$

Option A

Q11. Text Solution:

As there is no information about the number of matches in which the batsman got out for any of the player.

So, we will not be able to find the actual runs scored by any of the batsman.

Option D is correct.

Q12. Text Solution:

The average is the ratio of the total runs scored and the number of times the player got out. Until and unless we get the information on the number of times each of the players got out, we will not be able to tell who has scored the highest run.

The number of matches played by the any player is \geq number of times he got out. Thus even though the number of times the players played is known, we cannot tell how many times they got out. Thus, option "d" is the correct answer.

Q13. Text Solution:

As we can see from the graph, Rohit's average is the highest, i.e. 80

Now let's assume that Rohit played the least number of matches and he got out the least number of times (90% of the times he played).

So, the total score of Rohit is $80 \times 80 \times 90\% = 5760$.

The second highest average is achieved by Gill. If Gill has played the highest number of matches and got out in all of them, then the total score scored by him will be $50 \times 100 = 5000$ which is less than the least score that Rohit can score.

Thus, Rohit's lowest score is more than the highest score of the player having the second highest average. So, Rohit must have the highest score.

Q14. Text Solution:

Let the number of times Rohit, Virat, KL, Gill and Surya got out are a, b, c, d, e respectively before this match.

So, for Rohit-

$$80a + 0 = 70(a + 1)$$

$$\Rightarrow 8a = 7a + 7$$

$$\Rightarrow a = 7$$

Thus, the score of Rohit after this match will be $7 \times 80 = 560$

So, for Virat-

$$45b + 120 = 51b$$

$$\Rightarrow 6b = 120$$

$$\Rightarrow b = 20$$

$$\Rightarrow 51b = 1020$$

Thus, Virat's score after this match will be 1020.

So, for KL-

$$40c + 20 = 38.75(c + 1)$$

$$\Rightarrow 1.25c = 18.75$$

$$\Rightarrow c = 15$$

$$\Rightarrow 38.75(c+1) = 620$$

Thus, KL's score after this match will be 620.

So, for Gill-

$$50d + 100 = 58.33d$$



$$\Rightarrow \frac{25d}{3} = 100 \left(8.33 \text{ can be written as } \frac{25}{3} \right)$$

$$\Rightarrow d = 12$$

$$\Rightarrow 58.33d = 700$$

Thus, Gill's score is 700 after this match.

So, for Surya-

$$25e + 50 = 26.67(e + 1)$$

$$\Rightarrow \frac{5e}{3} = \frac{70}{3}$$

$$\Rightarrow e = 14$$

$$\Rightarrow 26.67(e + 1) = 400$$

Thus, Surya's score is 400 after the new match.

Thus, Virat has the highest score.

Q15. Text Solution:

Surya got out in 36 matches.

So, his initial average was 25. After playing the 4 matches his average became 40. Also let, he scored a total of x score in the 4 matches.

Hence,

$$25 \times 36 + x = 40 \times 36$$

$$\Rightarrow x = 540$$

As, the maximum possible score in a match is 140, let us assume that the minimum possible score that Surya scored in the y

$$\text{So, } y + (3 \times 140) = 540$$

$$\Rightarrow y = 120$$

Thus, the minimum score that Surya scored in these 4 matches is 120.

Q16. Text Solution:

Q1 cost is \$15 Million.

So, Q1 profit is (\$20 - \$15) Million = \$5 Million.

Thus, the profits are \$5 Million, \$10 Million, \$15 Million and \$10 Million respectively in Q1, Q2, Q3 & Q4 as per the ratio (1 : 2 : 3 : 2).

The cost in Q2 = (\$18 - \$10) Million = \$8 Million

The cost in Q3 = (\$22 - \$15) Million = \$7 Million

The cost in Q4 = (\$24 - \$10) Million = \$14 Million

Thus, total cost in Q2 & Q4 is \$22 Million

Option B

Q17. Text Solution:

Q1 cost is \$15 Million.

So, Q1 profit is (\$20 - \$15) Million = \$5 Million.

Thus, the profits are \$5 Million, \$10 Million, \$15 Million and \$10 Million respectively in Q1, Q2, Q3 & Q4.

The cost in Q2 = (\$18 - \$10) Million = \$8 Million

The cost in Q3 = (\$22 - \$15) Million = \$7 Million

The cost in Q4 = (\$24 - \$10) Million = \$14 Million

Thus, the answer is $= \frac{6}{8} \times 100 = 75\%$

Option A

Q18. Text Solution:

Total revenue in 2022 is \$(20 + 18 + 22 + 24) Million = \$84 Million.

The projected revenue for 2023 is \$84 Million $\times \frac{6}{7} = \$72$ million

The ratio of the projected revenues in Q1, Q2, Q3 & Q4 is 2 : 3 : 3 : 4

So, the revenue in Q1 = $2 \times \frac{72}{2+3+3+4} = \12 million

The revenue in Q2 = revenue in Q3

$$= 3 \times \frac{72}{12} = \$18 \text{ million}$$

The revenue in Q4 = \$72 - \$12 - \$18 - \$18 = \$24 Million.

Thus, the answer is \$24 Million.

Option B

Q19. Text Solution:

Total revenue in 2022 is \$(20 + 18 + 22 + 24) Million = \$84 Million.

The projected revenue for 2023 is \$84 Million $\times \frac{6}{7} = \$72$ million

The ratio of the projected revenues in Q1, Q2, Q3 & Q4 is 2 : 3 : 3 : 4

So, the revenue in Q1 = $2 \times \frac{72}{2+3+3+4} = \12 Million

The revenue in Q2 = revenue in Q3

$$= 3 \times \frac{72}{12} = \$18 \text{ Million}$$

The revenue in Q4 = \$72 - \$12 - \$18 - \$18 = \$24 Million.

Let's assume that the cost for quarter 1 is \$x Million, then we can say that

$$\Rightarrow (18 - x) = (24 - 2x)$$

$$\Rightarrow x = 6$$

So, the savings in Q1 = \$12 Million - \$6 Million = \$6 Million.



The savings in Q2 = \$18 Million - \$ 12 Million = \$ 6 Million

The savings in Q3 = \$18 Million - \$ 6 Million = \$ 12 Million

The savings in Q4 = \$24 Million - \$ 12 Million = \$ 12 Million

Total savings from Q1 & Q4 = \$(6 + 12) Million = \$18 Million.

Option D

Q20. Text Solution:

Total profit for Q1 + Q2 + Q3 = Total loss in Q4

= (\$40 - \$24) Million

= \$16 Million

Let's assume that the profits in Q1, Q2 & Q3 are \$4x Million, \$3x Million & \$x Million.

So,

$8x = 16$

$\Rightarrow x = 2$

$\Rightarrow 4x = 8$

$\Rightarrow 3x = 6$

Thus, the cost in Q1 = (\$20 - \$8) Million

= \$12 Million

The cost in Q3 = (\$22 - \$2) Million = \$20 Million.

Thus, the total cost in Q1 & Q3 = (\$12 + \$20) Million = \$32 Million

Option A

Q21. 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's 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-

Artists	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-

Artists	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

Artists	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

Artists	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.

Option A

Q22. 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's 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-

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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-

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

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

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Kayne	5	4	20
Tupac	6	5	30

Case – 2

Artists	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

Option B

Q23. 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's 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-

Artists	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-

Artists	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

Artists	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

Artists	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.

Option C

Q24. 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's 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-



Artists	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-

Artists	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

Artists	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

Artists	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 as 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.

Option D

Q25. 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's 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-

Artists	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-

Artists	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

Artists	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

Artists	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 least albums sold.

Thus, the answer is option D.

Q26. 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, $15b - 25d = 150$

$\Rightarrow 3b - 5d = 30$

$\Rightarrow 5d = 3b - 30$

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 $36 \times 3 = 108$.

Q27. 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, $b : c = 5 : 1$

$$\Rightarrow b = 5c$$

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, $p + q = 15 + 4 = 19$.

Q28. Text Solution:

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

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.

Q29. 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,

$$18a + 26 = 20a$$

$$\Rightarrow a = 13$$

$$15b + 63 = 18b$$

$$\Rightarrow b = 21$$

$$20c + 30 = 25c$$

$$\Rightarrow c = 6$$

$$25d + 32 = 29d$$

$$\Rightarrow d = 8$$

Also,

$$30e + 66 = 36e$$

$$\Rightarrow e = 11$$

Thus, the sum of the wickets taken by Jadeja and Siraj is $(11 + 13) = 24$.

Q30. 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,

$$18a + 26 = 20a$$

$$\Rightarrow a = 13$$

$$15b + 63 = 18b$$

$$\Rightarrow b = 21$$



$$20c + 30 = 25c$$

$$\Rightarrow c = 6$$

$$25d + 32 = 29d$$

$$\Rightarrow d = 8$$

Also,

$$30e + 66 = 36e$$

$$\Rightarrow e = 11$$

The most runs conceded is $36 \times 11 = 396$ runs and is conceded by Siraj.

The least run is conceded by Axar who conceded only $25 \times 6 = 150$.

Thus, the difference in the wickets is $(11 - 6) = 5$.



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