

Sec 1

Directions for questions 1 to 6: Answer the questions on the basis of the information given below.

Seven contestants - Abhi, Barik, Chiku, Dhir, Elex, Falak and Garima - participated in a reality show. Each contestant was evaluated on a scale of 0 to 50 points by four referees:

(a) Three Judges, Karan, Leena and Mayank, each of whom could award a maximum of 10 points.

(b) The fourth referee was the "PEOPLE'S VOTING" which carried a maximum of 20 points.

All ratings were Whole numbers only.

A contestant is ELIGIBLE to move to the next round if he/she receives at least a 50% of the maximum points from at least three referees and 60% from at least two referees. All the ELIGIBLE candidates are ranked on the basis of total points scored and the top four ranks QUALIFIED for the next round of the show. The partial information about points given by the four referees and total points is given in the table below.

Contestant	Judge			People's Voting	Total
	Karan	Leena	Mayank		
Abhi	6	4	5		
Barik		6	8		39
Chiku	5	7		16	
Dhir			7	20	
Elex	4		10		38
Falak	5	8			
Garima		6			33

Some additional facts are as follows:

(i) No two contestants had the same total points. The total points was greater than 30 and less than 42.

(ii) Each contestant received either 16 or 18 or 20 points from PEOPLE'S VOTING. Exactly three contestants received 18 points.

(iii) The only contestant who was INELIGIBLE to move to the next round had secured the third highest overall score among all the contestants.

(iv) Chiku QUALIFIED for the next round of the show. Mayank awarded Chiku points, which was the median of all the points that he awarded to the seven contestants.

(v) The total points of only two contestants were even numbers and the total points of Dhir were 4 more than that of Falak.

(vi) No judge gave less than 4 points to any contestant.

Q.1 [11831809]

What were the points received by Abhi from people's voting?

1 ☐ 16

2 ☐ 18

3 ☐ 20

4 ○ Either (1) or (3)

Solution:

Correct Answer : 1

 Answer key/Solution

Step 1:

First of all, we would try to find participants who were eligible to move to the next round of the show.

From the given information, Abhi, Barik, Chiku, Falak and Garima were eligible to move to the next round of the show.

(Garima will be eligible because she cannot be 3rd highest scorer with total points of 33.)

If Dhir was ineligible to move to the next round of the show, then his total points = $4 + 4 + 7 + 20 = 35$

From condition (iii), Since Dhir is ineligible; he had secured the third highest overall score. Other scores below 35 will be 34, 33, 32 and 31.

From condition (v), This is not possible because in the above case there will be three contestants with total points even numbers 32, 34 and 38.

So we can conclude that Dhir was eligible and Elex was ineligible. Now, we can find points of Elex = $38 = 4 + 4 + 10 + 20$. There would be two contestants whose total points were more than 38. One of them was Barik and other would be Dhir.

If Dhir's total points are 40, the total points of Falak would be 36. From condition (v), This is not possible because in this case there will be three contestants whose total points will be even numbers. So the total points of Dhir must be 41 and that of Falak would be 37.

Step 2:

Abhi's total points may be equal to 31/35 and he would have received points of 16/20 from People's Voting.

From condition (ii), Barik, Falak and Garima had received 18 points from People's Voting.

From condition (iv), Chiku QUALIFIED for the next round of the show. Mayank awarded Chiku points, which was the median of all the points that he awarded to the seven contestants. So Mayank awarded 6 points to Chiku and Chiku's total points will be 34. Also, Chiku's total points must be more than that of Garima, who was eligible but not qualified to move to the next round of the show.

Now, we can conclude that Barik, Chiku, Dhir and Falak having total points 39, 34, 41 and 37 respectively would have been moved to the next round of the show.

Therefore, total points of Abhi would be 31.

Step 3:

Hence, the final table can be shown as:

Contestant	Judge			People's Voting	Total
	Karan	Leena	Mayank		
Abhi	6	4	5	16	31
Barik	7	6	8	18	39
Chiku	5	7	6	16	34
Dhir			7	20	41
Elex	4	4	10	20	38
Falak	5	8	6	18	37
Garima	4/5	6	5/4	18	33

Abhi received 16 points from people's voting.

Bookmark

Feedback

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- (v) The total points of only two contestants were even numbers and the total points of Dhir were 4 more than that of Falak.
- (vi) No judge gave less than 4 points to any contestant.

Q.2 [11831809]

For how many contestants can the total points be determined precisely?

×

Solution:

Correct Answer : 7

Your Answer : 5

 Answer key/Solution

Step 1:

First of all, we would try to find participants who were eligible to move to the next round of the show.

From the given information, Abhi, Barik, Chiku, Falak and Garima were eligible to move to the next round of the show.

(Garima will be eligible because she cannot be 3rd highest scorer with total points of 33.)

If Dhir was ineligible to move to the next round of the show, then his total points = $4 + 4 + 7 + 20 = 35$

From condition (iii), Since Dhir is ineligible; he had secured the third highest overall score. Other scores below 35 will be 34, 33, 32 and 31.

From condition (v), This is not possible because in the above case there will be three contestants with total points even numbers 32, 34 and 38.

So we can conclude that Dhir was eligible and Elex was ineligible. Now, we can find points of Elex = $38 = 4 + 4 + 10 + 20$.

There would be two contestants whose total points were more than 38. One of them was Barik and other would be Dhir.

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From condition (iv), Chiku QUALIFIED for the next round of the show. Mayank awarded Chiku points, which was the median of all the points that he awarded to the seven contestants. So Mayank awarded 6 points to Chiku and Chiku's total points will be 34. Also, Chiku's total points must be more than that of Garima, who was eligible but not qualified to move to the next round of the show.

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Dhir			7	20	41
Elex	4	4	10	20	38
Falak	5	8	6	18	37
Garima	4/5	6	5/4	18	33

All the 7 contestants can be the total points be determined precisely.

Bookmark

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- (vi) No judge gave less than 4 points to any contestant.

Q.3 [11831809]

A score of 10 was definitely awarded by

1 ☐ Both Karan and Mayank

2 ☐ Both Leena and Mayank

3 ☐ All the three Judges

Solution:**Correct Answer : 4** Answer key/Solution**Step 1:**

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From the given information, Abhi, Barik, Chiku, Falak and Garima were eligible to move to the next round of the show.

(Garima will be eligible because she cannot be 3rd highest scorer with total points of 33.)

If Dhir was ineligible to move to the next round of the show, then his total points = $4 + 4 + 7 + 20 = 35$

From condition (iii), Since Dhir is ineligible; he had secured the third highest overall score. Other scores below 35 will be 34, 33, 32 and 31.

From condition (v), This is not possible because in the above case there will be three contestants with total points even numbers 32, 34 and 38.

So we can conclude that Dhir was eligible and Elex was ineligible. Now, we can find points of Elex = $38 = 4 + 4 + 10 + 20$.

There would be two contestants whose total points were more than 38. One of them was Barik and other would be Dhir.

If Dhir's total points are 40, the total points of Falak would be 36. From condition (v), This is not possible because in this case there will be three contestants whose total points will be even numbers. So the total points of Dhir must be 41 and that of Falak would be 37.

Step 2:

Abhi's total points may be equal to 31/35 and he would have received points of 16/20 from People's Voting.

From condition (ii), Barik, Falak and Garima had received 18 points from People's Voting.

From condition (iv), Chiku QUALIFIED for the next round of the show. Mayank awarded Chiku points, which was the median of all the points that he awarded to the seven contestants. So Mayank awarded 6 points to Chiku and Chiku's total points will be 34. Also, Chiku's total points must be more than that of Garima, who was eligible but not qualified to move to the next round of the show.

Now, we can conclude that Barik, Chiku, Dhir and Falak having total points 39, 34, 41 and 37 respectively would have been moved to the next round of the show.

Therefore, total points of Abhi would be 31.

Step 3:

Hence, the final table can be shown as:

Contestant	Judge			People's Voting	Total
	Karan	Leena	Mayank		
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Barik	7	6	8	18	39
Chiku	5	7	6	16	34
Dhir			7	20	41
Elex	4	4	10	20	38
Falak	5	8	6	18	37
Garima	4/5	6	5/4	18	33

A score of 10 was definitely awarded by Mayank.

Bookmark

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- (vi) No judge gave less than 4 points to any contestant.

Q.4 [11831809]

The lowest scorer received _____ total points.

1 ☐ 31

2 ☐ 32

3 ☐ 33

4 ○ Either (2) or (3)

Solution:

Correct Answer : 1

 Answer key/Solution

Step 1:

First of all, we would try to find participants who were eligible to move to the next round of the show.

From the given information, Abhi, Barik, Chiku, Falak and Garima were eligible to move to the next round of the show.

(Garima will be eligible because she cannot be 3rd highest scorer with total points of 33.)

If Dhir was ineligible to move to the next round of the show, then his total points = $4 + 4 + 7 + 20 = 35$

From condition (iii), Since Dhir is ineligible; he had secured the third highest overall score. Other scores below 35 will be 34, 33, 32 and 31.

From condition (v), This is not possible because in the above case there will be three contestants with total points even numbers 32, 34 and 38.

So we can conclude that Dhir was eligible and Elex was ineligible. Now, we can find points of Elex = $38 = 4 + 4 + 10 + 20$.

There would be two contestants whose total points were more than 38. One of them was Barik and other would be Dhir.

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Abhi's total points may be equal to 31/35 and he would have received points of 16/20 from People's Voting.

From condition (ii), Barik, Falak and Garima had received 18 points from People's Voting.

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Now, we can conclude that Barik, Chiku, Dhir and Falak having total points 39, 34, 41 and 37 respectively would have been moved to the next round of the show.

Therefore, total points of Abhi would be 31.

Step 3:

Hence, the final table can be shown as:

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	Karan	Leena	Mayank		
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Elex	4	4	10	20	38
Falak	5	8	6	18	37
Garima	4/5	6	5/4	18	33

Abhi, the lowest scorer, received 31 total points.

Bookmark

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- (v) The total points of only two contestants were even numbers and the total points of Dhir were 4 more than that of Falak.
- (vi) No judge gave less than 4 points to any contestant.

Q.5 [11831809]

Which of the following contestants qualified for the next round of the show?

1 ☐ Abhi, Chiku, Dhir and Garima.

2 ☐ Barik, Chiku, Dhir and Falak.

3 ☐ Chiku, Dhir, Elex and Garima.

4 ○ Barik, Chiku, Dhir and Elex.

Solution:

Correct Answer : 2

 Answer key/Solution

Step 1:

First of all, we would try to find participants who were eligible to move to the next round of the show.

From the given information, Abhi, Barik, Chiku, Falak and Garima were eligible to move to the next round of the show.

(Garima will be eligible because she cannot be 3rd highest scorer with total points of 33.)

If Dhir was ineligible to move to the next round of the show, then his total points = $4 + 4 + 7 + 20 = 35$

From condition (iii), Since Dhir is ineligible; he had secured the third highest overall score. Other scores below 35 will be 34, 33, 32 and 31.

From condition (v), This is not possible because in the above case there will be three contestants with total points even numbers 32, 34 and 38.

So we can conclude that Dhir was eligible and Elex was ineligible. Now, we can find points of Elex = $38 = 4 + 4 + 10 + 20$. There would be two contestants whose total points were more than 38. One of them was Barik and other would be Dhir.

If Dhir's total points are 40, the total points of Falak would be 36. From condition (v), This is not possible because in this case there will be three contestants whose total points will be even numbers. So the total points of Dhir must be 41 and that of Falak would be 37.

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Now, we can conclude that Barik, Chiku, Dhir and Falak having total points 39, 34, 41 and 37 respectively would have been moved to the next round of the show.

Therefore, total points of Abhi would be 31.

Step 3:

Hence, the final table can be shown as:

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Barik, Chiku, Dhir and Falak qualified for the next round of the show.

Bookmark

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- (vi) No judge gave less than 4 points to any contestant.

Q.6 [11831809]

If the sum total of all points awarded by Karan and Leena is the same, then which of the following statements is correct?

- 1 ☐ Karan awarded 5 points to Dhir.
- 2 ☐ Leena awarded 5 points to Dhir.
- 3 ☐ Mayank awarded 4 points to Garima.

4 ○ Karan awarded 5 points to Garima.

Solution:

Correct Answer : 2

 Answer key/Solution

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(Garima will be eligible because she cannot be 3rd highest scorer with total points of 33.)

If Dhir was ineligible to move to the next round of the show, then his total points = $4 + 4 + 7 + 20 = 35$

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From condition (v), This is not possible because in the above case there will be three contestants with total points even numbers 32, 34 and 38.

So we can conclude that Dhir was eligible and Elex was ineligible. Now, we can find points of Elex = $38 = 4 + 4 + 10 + 20$.

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If Dhir's total points are 40, the total points of Falak would be 36. From condition (v), This is not possible because in this case there will be three contestants whose total points will be even numbers. So the total points of Dhir must be 41 and that of Falak would be 37.

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Garima	4/5	6	5/4	18	33

Let Karan give x points to Dhir, then Leena give $14 - x$ points to Dhir.

Case 1:

Karan awards 4 points to Garima.

Then, $31 + x = 49 - x$

$\Rightarrow x = 9; 14 - x = 5$.

So valid case.

Case 2:

Karan awards 5 points to Garima.

So $32 + x = 49 - x$

$\Rightarrow x$ is not an integer.

So invalid case.

So Karan awards 4 points to Garima.

Mayank awards 5 points to Garima.

Karan awards 9 points to Dhir.

Leena awards 5 points to Dhir.

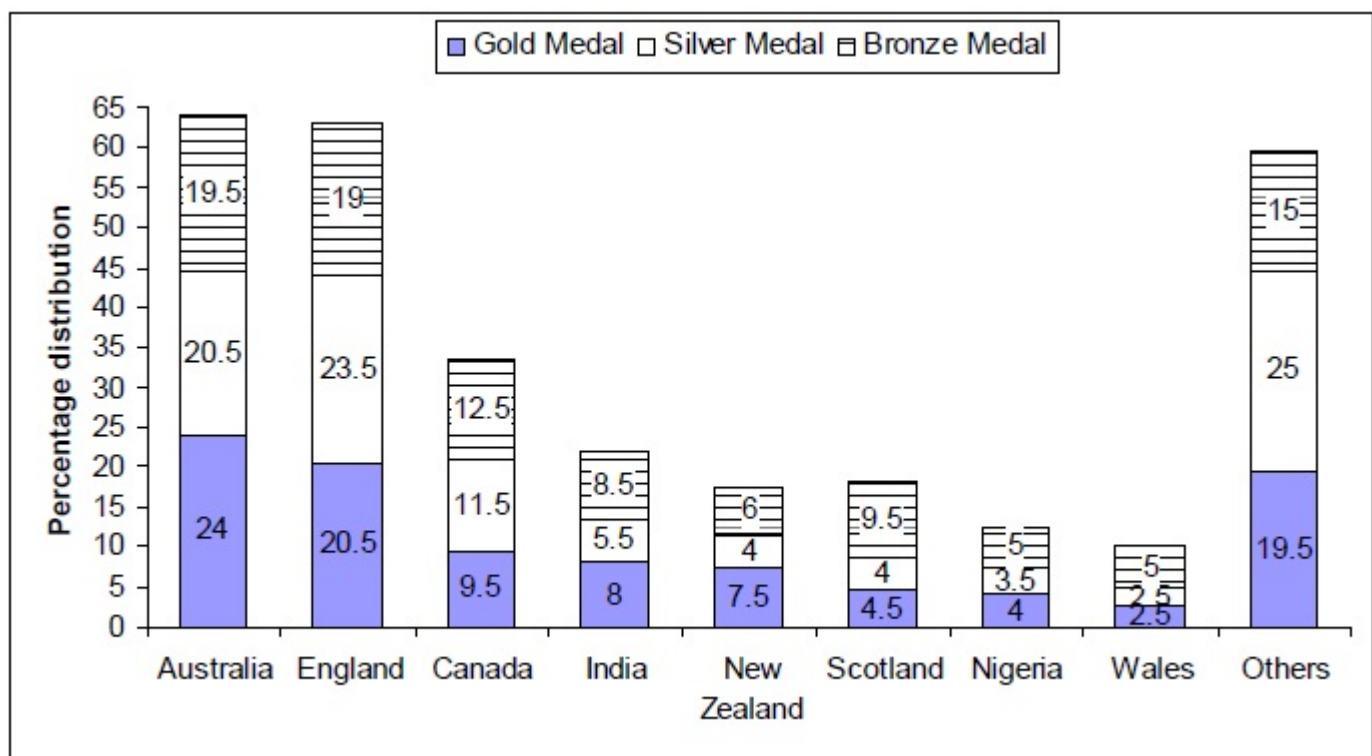
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FeedBack

Directions for questions 7 to 10: Answer the questions on the basis of the information given below.

Many countries including Australia, England, Canada, India, New Zealand, Scotland, Nigeria, Wales and Others participated in one or more sporting events held at the 2022 Commonwealth Games. In each sporting event at least three countries participated. At the end of each sporting event, the country finishing at the first, the second and the third positions were awarded a gold, a silver and a bronze medal respectively.

The table given below shows the percentage of total number of Gold, Silver and Bronze medals that were bagged by each of the countries.



Q.7 [11831809]

Which of the following cannot be the sum of the number of gold and silver medals won by India?

1 ☐ 54

2 ☐ 108

3 ☐ 136

4 ☐ 162



Solution:

Correct Answer : 3

Your Answer : 3

[Answer key/Solution](#)

At the end of each event exactly one each of gold, silver and bronze medals were awarded hence the total number of gold or silver or bronze medals must be the same. Let there be N number each of gold, silver and bronze medals.

Sum of the numbers of gold and silver medals won by India

$$= 0.08N + 0.055N = 0.135N = 27N/200$$

As this sum must be an integer, it will be a multiple of 27. Accordingly, 54, 108 and 162 all are possible values. Only 136 is not a multiple of 27.

Hence, option (3) is the correct answer.

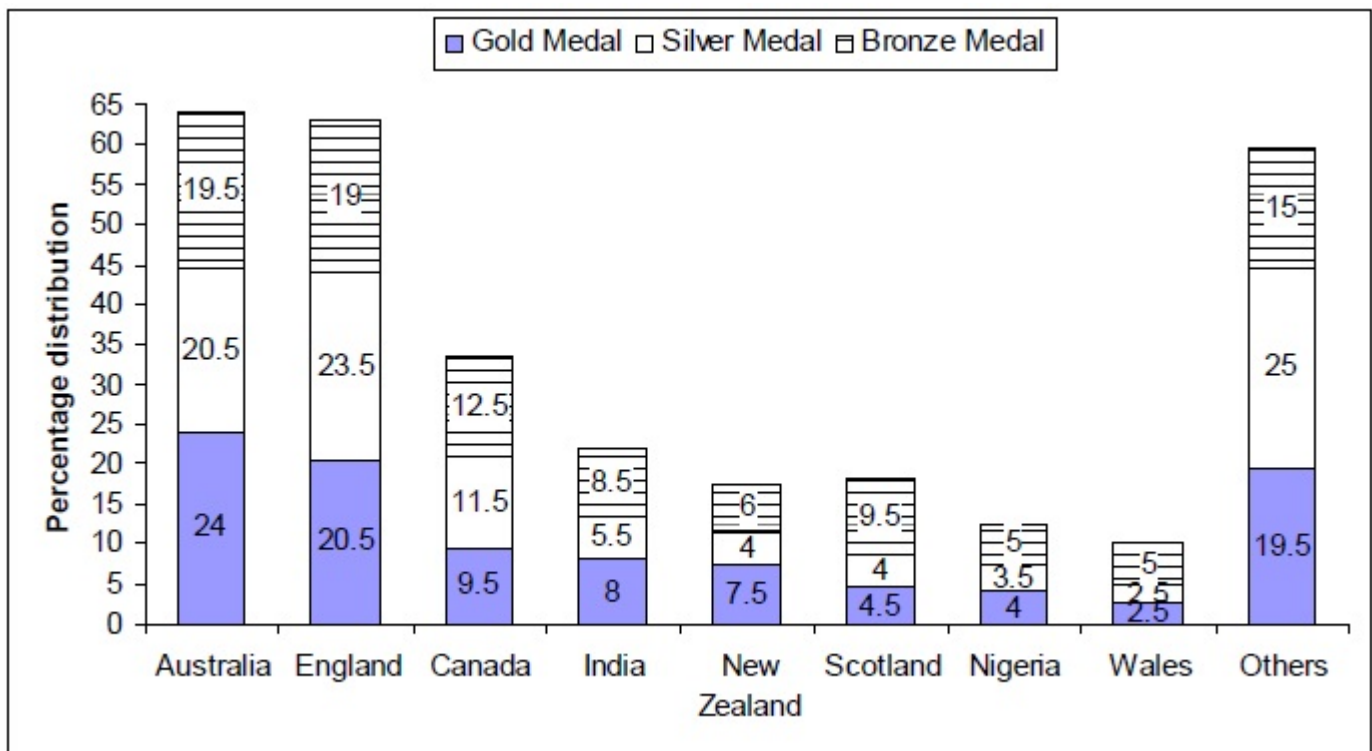
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FeedBack

Directions for questions 7 to 10: Answer the questions on the basis of the information given below.

Many countries including Australia, England, Canada, India, New Zealand, Scotland, Nigeria, Wales and Others participated in one or more sporting events held at the 2022 Commonwealth Games. In each sporting event at least three countries participated. At the end of each sporting event, the country finishing at the first, the second and the third positions were awarded a gold, a silver and a bronze medal respectively.

The table given below shows the percentage of total number of Gold, Silver and Bronze medals that were bagged by each of the countries.



Q.8 [11831809]

The ratio of the number of silver medals won by Canada to the number of bronze medals won by Scotland was _____.

1 ☐ 24 : 19

2 ☐ 6 : 5

3 ☐ 11 : 10

4 ☐ 23 : 19



Solution:

Correct Answer : 4

Your Answer : 4

At the end of each event exactly one each of gold, silver and bronze medals were awarded hence the total number of gold or silver or bronze medals must be the same. Let there be N number each of gold, silver and bronze medals.

Number of silver medals won by Canada = $0.115N$

Number of bronze medals won by Scotland = $0.095N$

Hence, required ratio = $0.115N : 0.095N = 23 : 19$.

Bookmark

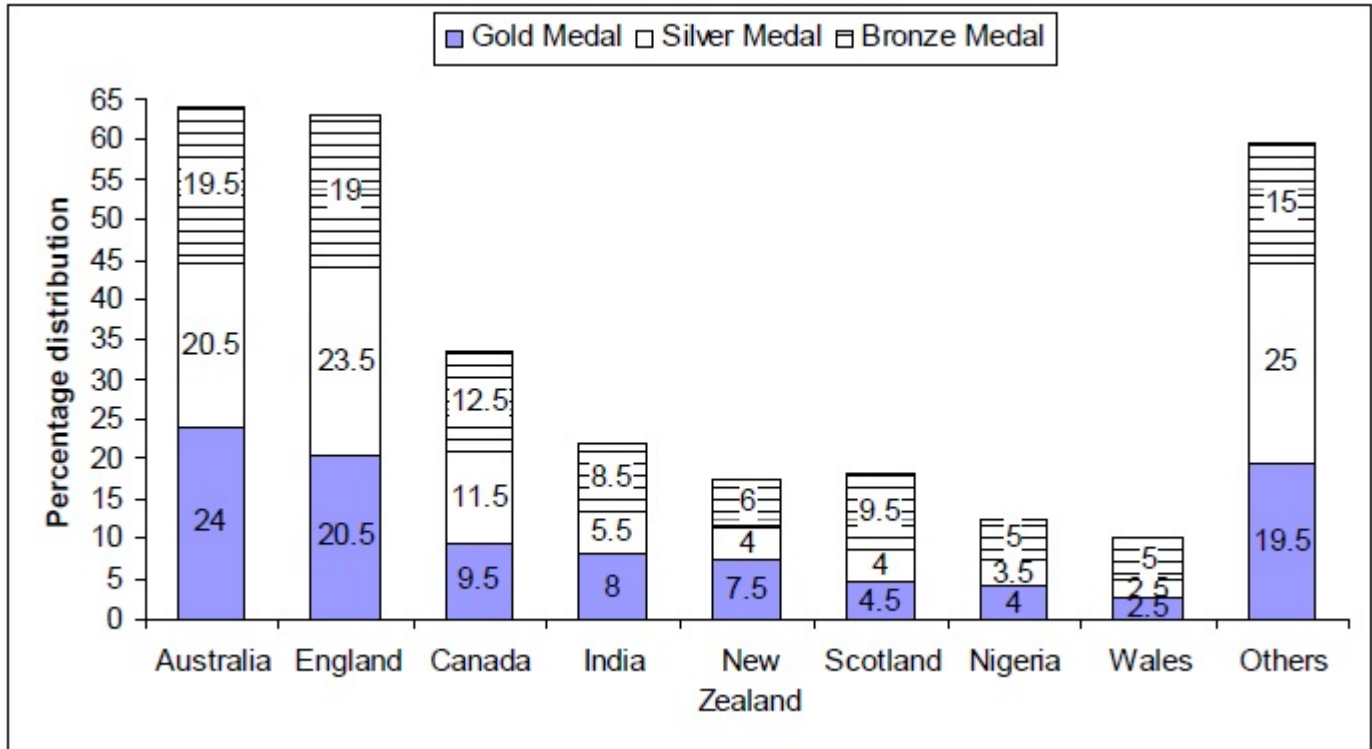
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 Answer key/Solution

Directions for questions 7 to 10: Answer the questions on the basis of the information given below.

Many countries including Australia, England, Canada, India, New Zealand, Scotland, Nigeria, Wales and Others participated in one or more sporting events held at the 2022 Commonwealth Games. In each sporting event at least three countries participated. At the end of each sporting event, the country finishing at the first, the second and the third positions were awarded a gold, a silver and a bronze medal respectively.

The table given below shows the percentage of total number of Gold, Silver and Bronze medals that were bagged by each of the countries.



Q.9 [11831809]

The total number of medals won by Nigeria was approximately what percent of the total number of medals won by Australia?

1 ☐ 13.5%

2 ☐ 19.5%

3 ☐ 16.5%

4 ☐ 23%



Solution:

Correct Answer : 2

Your Answer : 2

[Answer key/Solution](#)

At the end of each event exactly one each of gold, silver and bronze medals were awarded hence the total number of gold or silver or bronze medals must be the same. Let there be N number each of gold, silver and bronze medals.

Total number of medals won by Nigeria = $0.04N + 0.035N + 0.05N = 0.125N$

Total number of medals won by Australia = $0.24N + 0.205N + 0.195N = 0.64N$

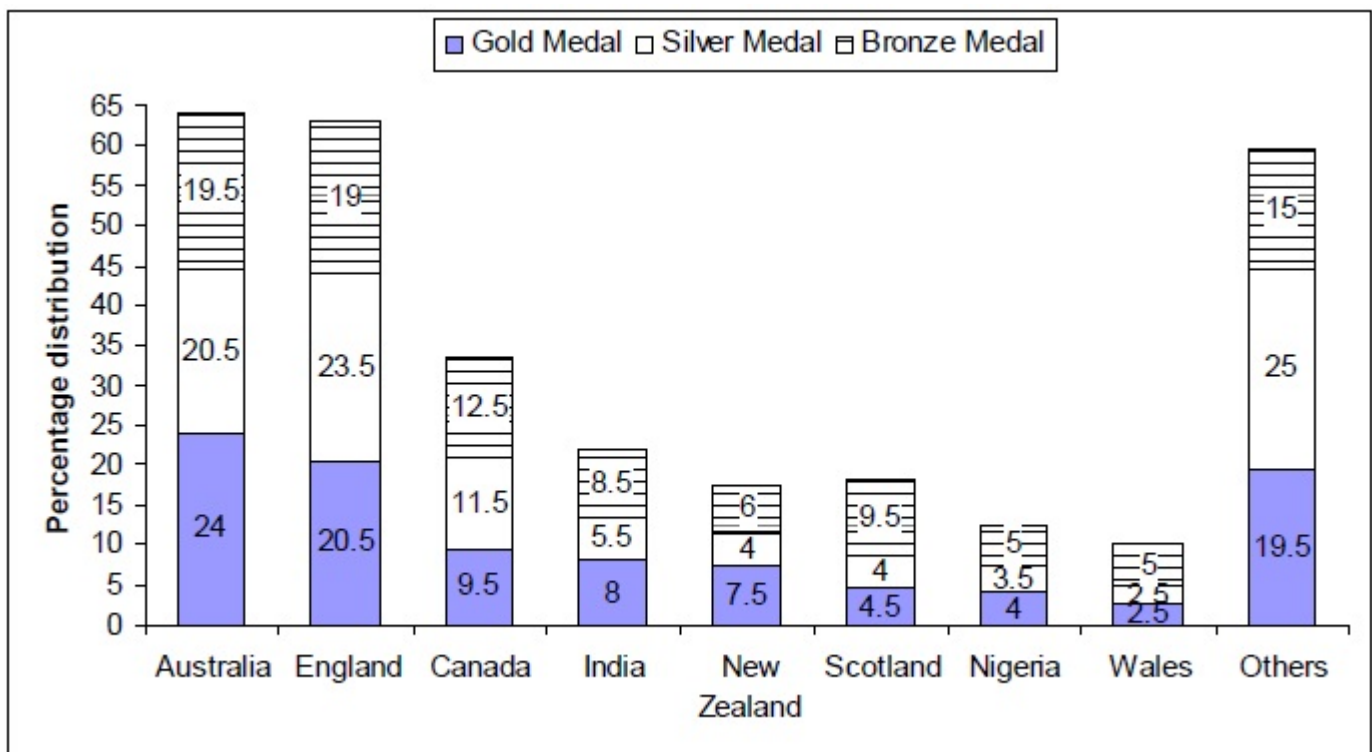
Hence, the number of medals won by Nigeria was = $0.125/0.64 \times 100 \approx 19.5\%$.

Bookmark

FeedBack

Directions for questions 7 to 10: Answer the questions on the basis of the information given below.

Many countries including Australia, England, Canada, India, New Zealand, Scotland, Nigeria, Wales and Others participated in one or more sporting events held at the 2022 Commonwealth Games. In each sporting event at least three countries participated. At the end of each sporting event, the country finishing at the first, the second and the third positions were awarded a gold, a silver and a bronze medal respectively. The table given below shows the percentage of total number of Gold, Silver and Bronze medals that were bagged by each of the countries.



Q.10 [11831809]

Countries A, B and C were the only countries in the "Others" category. The ratio of the number of Gold Medals won by A, B, and C was 1 : 2 : 2. Similarly, for Silver medals it was 2 : 2 : 1 and for Bronze medals it was 2 : 1 : 2. What could be the minimum number of total medals won by country B?



Solution:

Correct Answer : 208

Your Answer : 10

Answer key/Solution

At the end of each event exactly one each of gold, silver and bronze medals were awarded hence the total number of gold or silver or bronze medals must be the same. Let there be N number each of gold, silver and bronze medals.

Total number of medals won by country B

$$= 2/5 \times 0.195N + 2/5 \times 0.25N + 1/5 \times 0.15N$$

$$= 0.078N + 0.1N + 0.03N = 0.208N = 208N/1000 = M \text{ where } M \text{ and } N \text{ are both natural numbers.}$$

Therefore, M = 208 and N = 1000 are the minimum possible values as only these values will give integer values to 0.078N, 0.1N and 0.03N.

Hence, the minimum total number of medals won by country B could be 208.

Bookmark

FeedBack

Directions for questions 11 to 16: Answer the questions on the basis of the information given below.

Seven patients - Atul, Bina, Dolly, Esha, Gini, Hima and Lina - go to a pathological laboratory to take Blood Sugar Test (BST) on seven different days of the same week starting from Monday to Sunday, but not necessarily in the same order. Only one patient takes the test on each day.

More than three patients take the BST after Atul. Only one patient takes the BST between Atul and Hima. Three patients take tests between Bina and Gini, who takes the BST before Hima but not immediately before her.

Three patients take the BST between Esha and Dolly, who does not take the test on the last day of the week.

Further, it is also known that:

(i) The sugar levels of these seven patients are distinct integers which are consecutive terms of an Arithmetic Progression.

(ii) The patient who takes the BST on Friday has 95 mg/dL, which is the highest reading among them whereas the lowest reading is 65 mg/dL, which is for the patient who takes the test on Tuesday.

(iii) Dolly's sugar level is the average of Esha and Gini's sugar levels as well as the average of Lina and Atul's sugar levels.

(iv) The sugar level of the patient who tested on Thursday was 15 mg/dL more than the sugar level of the patient tested on the previous day.

Q.11 [11831809]

On which of the following days does Lina take the BST?

1 ☐ Tuesday

2 ☐ Thursday

3 ☐ Saturday

4 ○ Monday



Solution:

Correct Answer : 3

Your Answer : 3

[Answer key/Solution](#)

Step 1:

From the information given in the above paragraph we can create the following table:

Day	Patient
Monday	Gini
Tuesday	Atul
Wednesday	Dolly
Thursday	Hima
Friday	Bina
Saturday	Lina
Sunday	Esha

Step 2:

From conditions (i) and (ii), we know that terms T_1 and T_7 of the AP are 95 and 65. So the common difference is 5. The seven readings (in mg/dL) are 65, 70, 75, 80, 85, 90 and 95.

Also, Bina has a sugar level of 95 mg/dL and Atul has 65 mg/dL. The remaining readings (in mg/dL) are {70, 75, 80, 85, 90}. From condition (iii) the average of Atul (65 mg/dL) and Lina has to be one among the above 5 readings.

So Lina's reading cannot end in 0 as the average will not lie in the above set of values. Lina's reading can be either 75 or 85 mg/dL.

If Lina's reading is 75 mg/dL, Dolly's reading will be 70 mg/dL.

But Dolly's reading is also the average of Esha and Gini's readings, both of which lie in the above set of values. We do not have any other pair which gives us an average of 70.

Step 3:

If Lina's reading is 85 mg/dL, Dolly's is 75 mg/dL. Now, the average of 70 and 80 is also 75. So Esha and Gini have readings of 70 or 80 mg/dL.

From condition (iv), Hima's reading is $= 75 + 15 = 90$ mg/dL.

Hence, the final table can be shown as:

Day	Patient	Reading (in mg/dL)
Monday	Gini	80 / 70
Tuesday	Atul	65
Wednesday	Dolly	75
Thursday	Hima	90
Friday	Bina	95
Saturday	Lina	85
Sunday	Esha	70 / 80

From the table it is clear that Lina takes the BST on Saturday.

Bookmark

FeedBack

Directions for questions 11 to 16: Answer the questions on the basis of the information given below.

Seven patients - Atul, Bina, Dolly, Esha, Gini, Hima and Lina - go to a pathological laboratory to take Blood Sugar Test (BST) on seven different days of the same week starting from Monday to Sunday, but not necessarily in the same order. Only one patient takes the test on each day.

More than three patients take the BST after Atul. Only one patient takes the BST between Atul and Hima. Three patients take tests between Bina and Gini, who takes the BST before Hima but not immediately before her.

Three patients take the BST between Esha and Dolly, who does not take the test on the last day of the week.

Further, it is also known that:

(i) The sugar levels of these seven patients are distinct integers which are consecutive terms of an Arithmetic Progression.

(ii) The patient who takes the BST on Friday has 95 mg/dL, which is the highest reading among them whereas the lowest reading is 65 mg/dL, which is for the patient who takes the test on Tuesday.

(iii) Dolly's sugar level is the average of Esha and Gini's sugar levels as well as the average of Lina and Atul's sugar levels.

(iv) The sugar level of the patient who tested on Thursday was 15 mg/dL more than the sugar level of the patient tested on the previous day.

Q.12 [11831809]

Which of the following pairs of persons not only take BST on consecutive days but also obtain readings that are consecutive terms of the A.P?

1 ☐ Atul, Lina

2 ☐ Hima, Bina

3 ☐ Gini, Esha

4 ☐ Esha, Dolly



Solution:

Correct Answer : 2

Your Answer : 2

 Answer key/Solution

Step 1:

From the information given in the above paragraph we can create the following table:

Day	Patient
Monday	Gini
Tuesday	Atul
Wednesday	Dolly
Thursday	Hima
Friday	Bina
Saturday	Lina
Sunday	Esha

Step 2:

From conditions (i) and (ii), we know that terms T_1 and T_7 of the AP are 95 and 65. So the common difference is 5. The seven readings (in mg/dL) are 65, 70, 75, 80, 85, 90 and 95.

Also, Bina has a sugar level of 95 mg/dL and Atul has 65 mg/dL. The remaining readings (in mg/dL) are {70, 75, 80, 85, 90}. From condition (iii) the average of Atul (65 mg/dL) and Lina has to be one among the above 5 readings.

So Lina's reading cannot end in 0 as the average will not lie in the above set of values. Lina's reading can be either 75 or 85 mg/dL.

If Lina's reading is 75 mg/dL, Dolly's reading will be 70 mg/dL.

But Dolly's reading is also the average of Esha and Gini's readings, both of which lie in the above set of values. We do not have any other pair which gives us an average of 70.

Step 3:

If Lina's reading is 85 mg/dL, Dolly's is 75 mg/dL. Now, the average of 70 and 80 is also 75. So Esha and Gini have readings of 70 or 80 mg/dL.

From condition (iv), Hima's reading is $= 75 + 15 = 90$ mg/dL.

Hence, the final table can be shown as:

Day	Patient	Reading (in mg/dL)
Monday	Gini	80 / 70
Tuesday	Atul	65
Wednesday	Dolly	75
Thursday	Hima	90
Friday	Bina	95
Saturday	Lina	85
Sunday	Esha	70 / 80

We can see that the above condition is satisfied by Hima and Bina only as they take the tests on Thursday and Friday and also obtain readings of 90 and 95 mg/dL respectively.

Bookmark

FeedBack

Directions for questions 11 to 16: Answer the questions on the basis of the information given below.

Seven patients - Atul, Bina, Dolly, Esha, Gini, Hima and Lina - go to a pathological laboratory to take Blood Sugar Test (BST) on seven different days of the same week starting from Monday to Sunday, but not necessarily in the same order. Only one patient takes the test on each day.

More than three patients take the BST after Atul. Only one patient takes the BST between Atul and Hima. Three patients take tests between Bina and Gini, who takes the BST before Hima but not immediately before her.

Three patients take the BST between Esha and Dolly, who does not take the test on the last day of the week.

Further, it is also known that:

(i) The sugar levels of these seven patients are distinct integers which are consecutive terms of an Arithmetic Progression.

(ii) The patient who takes the BST on Friday has 95 mg/dL, which is the highest reading among them whereas the lowest reading is 65 mg/dL, which is for the patient who takes the test on Tuesday.

(iii) Dolly's sugar level is the average of Esha and Gini's sugar levels as well as the average of Lina and Atul's sugar levels.

(iv) The sugar level of the patient who tested on Thursday was 15 mg/dL more than the sugar level of the patient tested on the previous day.

Q.13 [11831809]

Which of the following statements is true regarding the person(s) taking the BST between Esha and Bina?

1 ☐ No one takes a BST between Esha and Bina.

2 ☐ Hima takes the test between Esha and Bina and has a sugar level of 90 mg/dL.

3 ☐ Two persons take the BST between Esha and Bina and have sugar levels greater than 80 mg/ dL

4 ☐ Only one person takes the BST between Esha and Bina and gets the third highest reading of sugar level.



Solution:

Correct Answer : 4

Your Answer : 4

 Answer key/Solution

Step 1:

From the information given in the above paragraph we can create the following table:

Day	Patient
Monday	Gini
Tuesday	Atul
Wednesday	Dolly
Thursday	Hima
Friday	Bina
Saturday	Lina
Sunday	Esha

Step 2:

From conditions (i) and (ii), we know that terms T_1 and T_7 of the AP are 95 and 65. So the common difference is 5. The seven readings (in mg/dL) are 65, 70, 75, 80, 85, 90 and 95.

Also, Bina has a sugar level of 95 mg/dL and Atul has 65 mg/dL. The remaining readings (in mg/dL) are {70, 75, 80, 85, 90}. From condition (iii) the average of Atul (65 mg/dL) and Lina has to be one among the above 5 readings.

So Lina's reading cannot end in 0 as the average will not lie in the above set of values. Lina's reading can be either 75 or 85 mg/dL.

If Lina's reading is 75 mg/dL, Dolly's reading will be 70 mg/dL.

But Dolly's reading is also the average of Esha and Gini's readings, both of which lie in the above set of values. We do not have any other pair which gives us an average of 70.

Step 3:

If Lina's reading is 85 mg/dL, Dolly's is 75 mg/dL. Now, the average of 70 and 80 is also 75. So Esha and Gini have readings of 70 or 80 mg/dL.

From condition (iv), Hima's reading is $= 75 + 15 = 90$ mg/dL.

Hence, the final table can be shown as:

Day	Patient	Reading (in mg/dL)
Monday	Gini	80 / 70
Tuesday	Atul	65
Wednesday	Dolly	75
Thursday	Hima	90
Friday	Bina	95
Saturday	Lina	85
Sunday	Esha	70 / 80

We can observe from the table that only Lina takes the test between Esha and Bina and her sugar level is 85 mg/dL which is the third highest reading among these patients.

Bookmark

FeedBack

Directions for questions 11 to 16: Answer the questions on the basis of the information given below.

Seven patients - Atul, Bina, Dolly, Esha, Gini, Hima and Lina - go to a pathological laboratory to take Blood Sugar Test (BST) on seven different days of the same week starting from Monday to Sunday, but not necessarily in the same order. Only one patient takes the test on each day.

More than three patients take the BST after Atul. Only one patient takes the BST between Atul and Hima. Three patients take tests between Bina and Gini, who takes the BST before Hima but not immediately before her.

Three patients take the BST between Esha and Dolly, who does not take the test on the last day of the week.

Further, it is also known that:

(i) The sugar levels of these seven patients are distinct integers which are consecutive terms of an Arithmetic Progression.

(ii) The patient who takes the BST on Friday has 95 mg/dL, which is the highest reading among them whereas the lowest reading is 65 mg/dL, which is for the patient who takes the test on Tuesday.

(iii) Dolly's sugar level is the average of Esha and Gini's sugar levels as well as the average of Lina and Atul's sugar levels.

(iv) The sugar level of the patient who tested on Thursday was 15 mg/dL more than the sugar level of the patient tested on the previous day.

Q.14 [11831809]

What is the sugar level of the patient who takes the BST immediately before Atul?

1 ☐ 80

2 ☐ 75

3 ☐ 70

4 ☐ Either (1) or (3)



Solution:

Correct Answer : 4

Your Answer : 4

 Answer key/Solution

Step 1:

From the information given in the above paragraph we can create the following table:

Day	Patient
Monday	Gini
Tuesday	Atul
Wednesday	Dolly
Thursday	Hima
Friday	Bina
Saturday	Lina
Sunday	Esha

Step 2:

From conditions (i) and (ii), we know that terms T_1 and T_7 of the AP are 95 and 65. So the common difference is 5. The seven readings (in mg/dL) are 65, 70, 75, 80, 85, 90 and 95.

Also, Bina has a sugar level of 95 mg/dL and Atul has 65 mg/dL. The remaining readings (in mg/dL) are {70, 75, 80, 85, 90}. From condition (iii) the average of Atul (65 mg/dL) and Lina has to be one among the above 5 readings.

So Lina's reading cannot end in 0 as the average will not lie in the above set of values. Lina's reading can be either 75 or 85 mg/dL.

If Lina's reading is 75 mg/dL, Dolly's reading will be 70 mg/dL.

But Dolly's reading is also the average of Esha and Gini's readings, both of which lie in the above set of values. We do not have any other pair which gives us an average of 70.

Step 3:

If Lina's reading is 85 mg/dL, Dolly's is 75 mg/dL. Now, the average of 70 and 80 is also 75. So Esha and Gini have readings of 70 or 80 mg/dL.

From condition (iv), Hima's reading is $= 75 + 15 = 90$ mg/dL.

Hence, the final table can be shown as:

Day	Patient	Reading (in mg/dL)
Monday	Gini	80 / 70
Tuesday	Atul	65
Wednesday	Dolly	75
Thursday	Hima	90
Friday	Bina	95
Saturday	Lina	85
Sunday	Esha	70 / 80

From the table it is clear that the person who takes the BST before Atul can get a reading of either 80 or 70 mg/dL.

Bookmark

FeedBack

Directions for questions 11 to 16: Answer the questions on the basis of the information given below.

Seven patients - Atul, Bina, Dolly, Esha, Gini, Hima and Lina - go to a pathological laboratory to take Blood Sugar Test (BST) on seven different days of the same week starting from Monday to Sunday, but not necessarily in the same order. Only one patient takes the test on each day.

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Three patients take the BST between Esha and Dolly, who does not take the test on the last day of the week.

Further, it is also known that:

(i) The sugar levels of these seven patients are distinct integers which are consecutive terms of an Arithmetic Progression.

(ii) The patient who takes the BST on Friday has 95 mg/dL, which is the highest reading among them whereas the lowest reading is 65 mg/dL, which is for the patient who takes the test on Tuesday.

(iii) Dolly's sugar level is the average of Esha and Gini's sugar levels as well as the average of Lina and Atul's sugar levels.

(iv) The sugar level of the patient who tested on Thursday was 15 mg/dL more than the sugar level of the patient tested on the previous day.

Q.15 [11831809]

What is the average sugar level of the patients taking the sugar tests from Tuesday to Saturday (in mg/dL)?



Solution:

Correct Answer : 82

Your Answer : 82

 Answer key/Solution

Step 1:

From the information given in the above paragraph we can create the following table:

Day	Patient
Monday	Gini
Tuesday	Atul
Wednesday	Dolly
Thursday	Hima
Friday	Bina
Saturday	Lina
Sunday	Esha

Step 2:

From conditions (i) and (ii), we know that terms T1 and T7 of the AP are 95 and 65. So the common difference is 5. The seven readings (in mg/dL) are 65, 70, 75, 80, 85, 90 and 95.

Also, Bina has a sugar level of 95 mg/dL and Atul has 65 mg/dL. The remaining readings (in mg/dL) are {70, 75, 80, 85, 90}. From condition (iii) the average of Atul (65 mg/dL) and Lina has to be one among the above 5 readings.

So Lina's reading cannot end in 0 as the average will not lie in the above set of values. Lina's reading can be either 75 or 85 mg/dL.

If Lina's reading is 75 mg/dL, Dolly's reading will be 70 mg/dL.

But Dolly's reading is also the average of Esha and Gini's readings, both of which lie in the above set of values. We do not have any other pair which gives us an average of 70.

Step 3:

If Lina's reading is 85 mg/dL, Dolly's is 75 mg/dL. Now, the average of 70 and 80 is also 75. So Esha and Gini have readings of 70 or 80 mg/dL.

From condition (iv), Hima's reading is $= 75 + 15 = 90$ mg/dL.

Hence, the final table can be shown as:

Day	Patient	Reading (in mg/dL)
Monday	Gini	80 / 70
Tuesday	Atul	65
Wednesday	Dolly	75
Thursday	Hima	90
Friday	Bina	95
Saturday	Lina	85
Sunday	Esha	70 / 80

We can see from the table that the readings of sugar levels for the 5 patients taking the tests from Tuesday to Saturday are 65, 75, 90, 95 and 85 mg/dL.

Hence, required average $= 410/5 = 82$ mg/dL

Bookmark

FeedBack

Directions for questions 11 to 16: Answer the questions on the basis of the information given below.

Seven patients - Atul, Bina, Dolly, Esha, Gini, Hima and Lina - go to a pathological laboratory to take Blood Sugar Test (BST) on seven different days of the same week starting from Monday to Sunday, but not necessarily in the same order. Only one patient takes the test on each day.

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Three patients take the BST between Esha and Dolly, who does not take the test on the last day of the week.

Further, it is also known that:

(i) The sugar levels of these seven patients are distinct integers which are consecutive terms of an Arithmetic Progression.

(ii) The patient who takes the BST on Friday has 95 mg/dL, which is the highest reading among them whereas the lowest reading is 65 mg/dL, which is for the patient who takes the test on Tuesday.

(iii) Dolly's sugar level is the average of Esha and Gini's sugar levels as well as the average of Lina and Atul's sugar levels.

(iv) The sugar level of the patient who tested on Thursday was 15 mg/dL more than the sugar level of the patient tested on the previous day.

Q.16 [11831809]

Which of the following groups of persons are **DEFINITELY NOT** ordered correctly based on their blood sugar levels?

1 ☐ Lina > Dolly > Esha

2 ☐ Bina > Hima > Gini

3 ☐ Hima > Esha > Atul

4 ☐ Gini > Esha > Bina



Solution:

Correct Answer : 4

Your Answer : 4

 Answer key/Solution

Step 1:

From the information given in the above paragraph we can create the following table:

Day	Patient
Monday	Gini
Tuesday	Atul
Wednesday	Dolly
Thursday	Hima
Friday	Bina
Saturday	Lina
Sunday	Esha

Step 2:

From conditions (i) and (ii), we know that terms T_1 and T_7 of the AP are 95 and 65. So the common difference is 5. The seven readings (in mg/dL) are 65, 70, 75, 80, 85, 90 and 95.

Also, Bina has a sugar level of 95 mg/dL and Atul has 65 mg/dL. The remaining readings (in mg/dL) are {70, 75, 80, 85, 90}. From condition (iii) the average of Atul (65 mg/dL) and Lina has to be one among the above 5 readings.

So Lina's reading cannot end in 0 as the average will not lie in the above set of values. Lina's reading can be either 75 or 85 mg/dL.

If Lina's reading is 75 mg/dL, Dolly's reading will be 70 mg/dL.

But Dolly's reading is also the average of Esha and Gini's readings, both of which lie in the above set of values. We do not have any other pair which gives us an average of 70.

Step 3:

If Lina's reading is 85 mg/dL, Dolly's is 75 mg/dL. Now, the average of 70 and 80 is also 75. So Esha and Gini have readings of 70 or 80 mg/dL.

From condition (iv), Hima's reading is $= 75 + 15 = 90$ mg/dL.

Hence, the final table can be shown as:

Day	Patient	Reading (in mg/dL)
Monday	Gini	80 / 70
Tuesday	Atul	65
Wednesday	Dolly	75
Thursday	Hima	90
Friday	Bina	95
Saturday	Lina	85
Sunday	Esha	70 / 80

We know that Bina has a sugar level of 95 mg/dL, which is the highest among these patients, hence option (4) is definitely not correct.

Bookmark

FeedBack

Directions for questions 17 to 20: Answer the questions on the basis of the information given below.

Ten girls - A, B, C, D, E, F, G, H, I and J - sat at a circular table to receive the answer sheets of their Mathematics test. In the test, 2 marks were awarded for a correct answer whereas 1 mark was deducted for a wrong answer. No marks were awarded for questions that were not attempted. After receiving the answer sheets each girl secretly shared the marks received with both her neighbors. After that each girl announced a number that was the average of the two numbers (i.e., marks) shared by her neighbors. The table given below shows the marks announced by each girl and also the two neighbors of each girl.

Girl	Number announced by each girl	Neighbours
A	1	B, F
B	2	A, J
C	7	D, G
D	8	C, H
E	5	G, I
F	10	A, H
G	6	C, E
H	9	D, F
I	4	E, J
J	3	B, I

Q.17 [11831809]

What was the sum of the marks of the ten girls in the test?

1 ☐ 56

2 ☐ 55

3 ☐ 60

4 ☐ 59



Solution:

Correct Answer : 2

Your Answer : 2

A announced 1 as the average of the marks of her two neighbors – B and F.

Therefore, $B + F = 1 \times 2 = 2$ (i)

Similarly, we get the following sets of equations:

$A + J = 4$... (ii)

$D + G = 14$... (iii)

$C + H = 16$... (iv)

$G + I = 10$... (v)

$A + H = 20$... (vi)

$C + E = 12$... (vii)

$D + F = 18$... (viii)

$E + J = 8$... (ix)

$B + I = 6$... (x)

Adding all the equations, we get

$2(A + B + C + D + E + F + G + H + I + J) = 110$

Hence, required sum of the marks = 55.

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Directions for questions 17 to 20: Answer the questions on the basis of the information given below.

Ten girls - A, B, C, D, E, F, G, H, I and J - sat at a circular table to receive the answer sheets of their Mathematics test. In the test, 2 marks were awarded for a correct answer whereas 1 mark was deducted for a wrong answer. No marks were awarded for questions that were not attempted. After receiving the answer sheets each girl secretly shared the marks received with both her neighbors. After that each girl announced a number that was the average of the two numbers (i.e., marks) shared by her neighbors. The table given below shows the marks announced by each girl and also the two neighbors of each girl.

Girl	Number announced by each girl	Neighbours
A	1	B, F
B	2	A, J
C	7	D, G
D	8	C, H
E	5	G, I
F	10	A, H
G	6	C, E
H	9	D, F
I	4	E, J
J	3	B, I

Q.18 [11831809]

What was the marks of C in the test?



Solution:

Correct Answer : 2

Your Answer : 2

A announced 1 as the average of the marks of her two neighbors – B and F.

Therefore, $B + F = 1 \times 2 = 2$ (i)

Similarly, we get the following sets of equations:

$A + J = 4$... (ii)

$D + G = 14$... (iii)

$C + H = 16$... (iv)

$G + I = 10$... (v)

$A + H = 20$... (vi)

$C + E = 12$... (vii)

$D + F = 18$... (viii)

$E + J = 8$... (ix)

$B + I = 6$... (x)

Since we have to find the marks of C, we need to eliminate some variables from equations involving C.

(vii) – (ix) gives $C - J = 4$

(ii) + (iv) – (vi) gives $C + J = 0$

Solving these equations, we get $C = 2$.

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Directions for questions 17 to 20: Answer the questions on the basis of the information given below.

Ten girls - A, B, C, D, E, F, G, H, I and J - sat at a circular table to receive the answer sheets of their Mathematics test. In the test, 2 marks were awarded for a correct answer whereas 1 mark was deducted for a wrong answer. No marks were awarded for questions that were not attempted. After receiving the answer sheets each girl secretly shared the marks received with both her neighbors. After that each girl announced a number that was the average of the two numbers (i.e., marks) shared by her neighbors. The table given below shows the marks announced by each girl and also the two neighbors of each girl.

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H	9	D, F
I	4	E, J
J	3	B, I

Q.19 [11831809]

If there were 10 questions in the Test, what were the maximum number of mistakes committed by H?



Solution:

Correct Answer : 2

Your Answer : 2

A announced 1 as the average of the marks of her two neighbors – B and F.

Therefore, $B + F = 1 \times 2 = 2$ (i)

Similarly, we get the following sets of equations:

$A + J = 4$... (ii)

$D + G = 14$... (iii)

$C + H = 16$... (iv)

$G + I = 10$... (v)

$A + H = 20$... (vi)

$C + E = 12$... (vii)

$D + F = 18$... (viii)

$E + J = 8$... (ix)

$B + I = 6$... (x)

Since $C = 2$, $J = -2$, $A = 6$, $H = 14$ and $E = 10$,

From (iii) – (v), $D - I = 4$

and from (x) – (i), $I - F = 4$.

$\Rightarrow D - I = I - F \Rightarrow 2I = D + F$

From (viii), $I = 9$.

Therefore, $F = 5$, $D = 13$, $B = -3$ and $G = 1$.

H got 14 marks. This is possible if he Got 7 Correct or 8 Correct and 0 or 2 Wrong.

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Directions for questions 17 to 20: Answer the questions on the basis of the information given below.

Ten girls - A, B, C, D, E, F, G, H, I and J - sat at a circular table to receive the answer sheets of their Mathematics test. In the test, 2 marks were awarded for a correct answer whereas 1 mark was deducted for a wrong answer. No marks were awarded for questions that were not attempted. After receiving the answer sheets each girl secretly shared the marks received with both her neighbors. After that each girl announced a number that was the average of the two numbers (i.e., marks) shared by her neighbors. The table given below shows the marks announced by each girl and also the two neighbors of each girl.

Girl	Number announced by each girl	Neighbours
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F	10	A, H
G	6	C, E
H	9	D, F
I	4	E, J
J	3	B, I

Q.20 [11831809]

If there were 10 questions in the Test, what were the number of mistakes committed by D?

1 ☐ 4

2 ☐ 3

3 ☐ 2

4 ☐ 1

Solution:

Correct Answer : 4

A announced 1 as the average of the marks of her two neighbors – B and F.

Therefore, $B + F = 1 \times 2 = 2$ (i)

Similarly, we get the following sets of equations:

$$A + J = 4 \text{ ... (ii)}$$

$$D + G = 14 \text{ ... (iii)}$$

$$C + H = 16 \text{ ... (iv)}$$

$$G + I = 10 \text{ ... (v)}$$

$$A + H = 20 \text{ ... (vi)}$$

$$C + E = 12 \text{ ... (vii)}$$

$$D + F = 18 \text{ ... (viii)}$$

$$E + J = 8 \text{ ... (ix)}$$

$$B + I = 6 \text{ ... (x)}$$

The marks of the girls from the above equations are:

$$A = 6$$

$$B = -3$$

$$C = 2$$

$$D = 13$$

$$E = 10$$

$$F = 5$$

$$G = 1$$

$$H = 14$$

$$I = 9$$

$$J = -2$$

D got 13 marks. This is possible only if he Got 7 Correct and 1 Wrong.

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