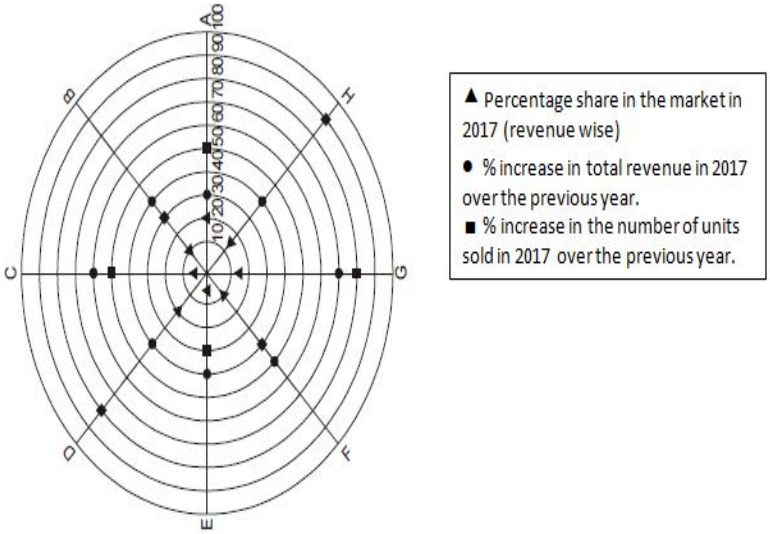
Refer to the data below and answer the questions that follow.

A, B, C, D, E, F, G and H are eight leading companies in healthcare industry. The following graph shows information on the percentage share of these companies in the overall healthcare industry (in terms of revenue) in 2017, percentage increase in the total revenue in 2017 over the corresponding value in 2016 and percentage increase in the total sales (in terms of number of units sold) in 2017 over the corresponding value in 2016.



Revenue is given in Rs. crore and Quantity is considered in units.

Note:

1. The only source of revenue for the given companies is through the sale of the units.

2. All the points given in the graph above are multiples of 5%.

1) If the total revenue of company G in the year 2017 was Rs. 24,357 crore and company E sold 4615 crore units in 2017, then which of the following was closest to the selling price per unit for company E in 2016?

- Rs. 1.9
- Rs. 2.03
- Rs. 1.6
- Rs. 1.4

Video Explanation:

Explanation:

We tabulate the data as shown:

	Percentage share in market in 2017 (revenue)	% increase in total revenue in 2017 over 2016	% increase in sales in 2017-2016 number of units
A	20	30	50
B	10	40	30
C	5	60	50
D	20	40	80
E	5	40	30
F	10	50	40
G	15	70	80
H	15	40	90

Company G's total revenue in year 2017 = 24357 crores

$\therefore$ Company E's total revenue in 2017 $= \frac{24357 \times 100 \times 5}{15 \times 100} = 8119$ crores

$\therefore \frac{8119}{1.4} \approx 5800 \Rightarrow$ Company E's total revenue in 2016 = Rs. 5800 crores

Since E's total revenue (in units) in 2017 = 4615 crores

$\frac{4615}{1.3} = 3550 \Rightarrow$ E's total revenue (in units) in 2016 = 3550 crores

$\therefore$ The selling price (in Rs.) per unit for company E in 2016 $= \frac{5800}{3550} \approx 1.6$

Hence, [3].

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **399 secs**

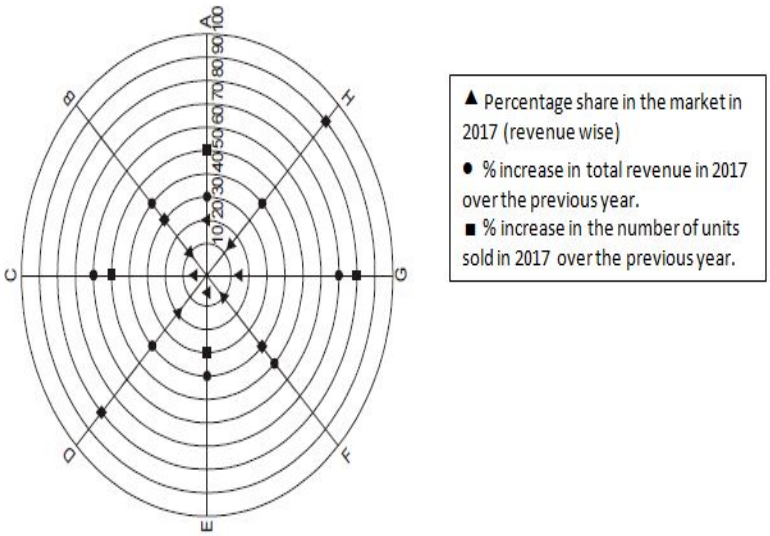
Your Attempt: **Skipped**

% Students got it correct: **67 %**

2) What was the sum of the revenues of all the given companies in 2016? (use data from the previous question).

Refer to the data below and answer the questions that follow.

A, B, C, D, E, F, G and H are eight leading companies in healthcare industry. The following graph shows information on the percentage share of these companies in the overall healthcare industry (in terms of revenue) in 2017, percentage increase in the total revenue in 2017 over the corresponding value in 2016 and percentage increase in the total sales (in terms of number of units sold) in 2017 over the corresponding value in 2016.



Revenue is given in Rs. crore and Quantity is considered in units.

Note:

1. The only source of revenue for the given companies is through the sale of the units.

2. All the points given in the graph above are multiples of 5%.

Rs. 83861 crore

Rs. 163520 crore

Rs. 113202 crore

Rs. 198350 crore ✖

Video Explanation: ⌄

Explanation: ⌄

We tabulate the data as shown:

	Percentage share in market in 2017 (revenue)	% increase in total revenue in 2017 over 2016	% increase in sales in 2017-2016 number of units
A	20	30	50
B	10	40	30
C	5	60	50
D	20	40	80
E	5	40	30
F	10	50	40
G	15	70	80
H	15	40	90

The total revenue of all the given companies in 2017 $= \frac{24357}{15} \times 100 =$ Rs. 162380 crores.

Revenue of company A in 2016 $= 162380 \times \frac{20}{100} \times \frac{1}{1.3}$

Similarly the remaining vales of various companies can be calculated.

Sum of the revenue of companies A, B, C, D, E, F, G, H in 2016

$$= \frac{162380}{100}\left[\frac{20}{1.3} + \frac{10}{1.4} + \frac{5}{1.6} + \frac{20}{1.4} + \frac{5}{1.4} + \frac{10}{1.5} + \frac{15}{1.7} + \frac{15}{1.4}\right]$$

$$\approx \frac{162380}{100}\left[\frac{50}{1.4} + \frac{20}{1.3} + \frac{10}{1.5} + \frac{5}{1.6} + \frac{15}{1.7}\right]$$

$\approx 1623.8(35.7 + 15.4 + 6.7 + 3.1 + 9)$

$= 1623.8(69.9) \approx 70 \times 1623.8 = 113666$

Hence, [3].

Alternatively,

Because the options are reasonably far, we can use approximation as follows:

Sum of the revenues of all the given companies $= \frac{24357}{0.15} = \frac{24357}{3} \times 20 =$ Rs.162380 crores.

Since all the companies registered increase in revenue in 2017 over 2016, the sum of the revenues of all the given companies in 2016 was necessarily lower than Rs.162380 crores. Therefore, options [2] and [4] are eliminated.

We can get rough idea about the total increase in the revenue of the given companies in 2017 over 2016 using the concept of weighted average as follows: 0.20 × 30 + 0.10 × 40 + 0.05 × 60 + 0.20 × 40 + 0.05 × 40 + 0.10 × 50 + 0.15 × 70 + 0.15 × 40 = 44.5%.

Option [1] is 83861 crores.

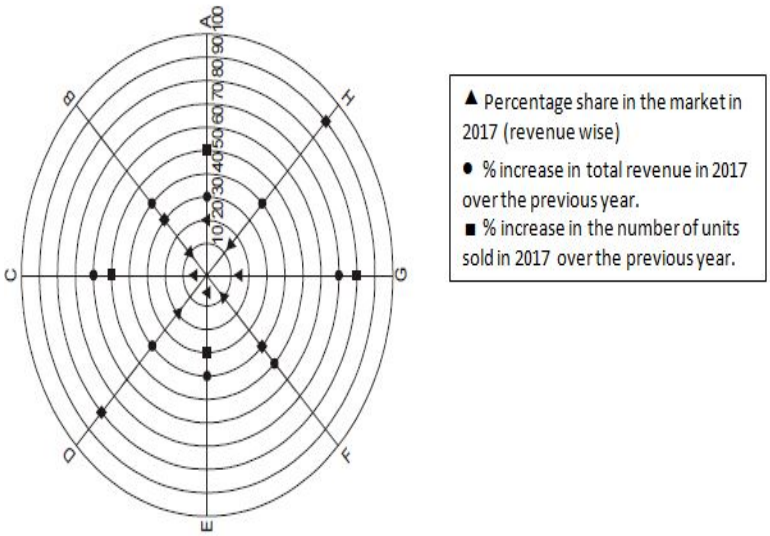
In this option is correct, we will need a total percentage increase of close to 100% to get total revenue of 162380 crores in 2017. Therefore this option is eliminated.

Option [3] is 113202 crores.

Since $\frac{162380}{113202} = 1.434$, this option means that the total percent increase in the revenue in 2017 = 43.4%.

Refer to the data below and answer the questions that follow.

A, B, C, D, E, F, G and H are eight leading companies in healthcare industry. The following graph shows information on the percentage share of these companies in the overall healthcare industry (in terms of revenue) in 2017, percentage increase in the total revenue in 2017 over the corresponding value in 2016 and percentage increase in the total sales (in terms of number of units sold) in 2017 over the corresponding value in 2016.



Revenue is given in Rs. crore and Quantity is considered in units.

Note:

1. The only source of revenue for the given companies is through the sale of the units.

2. All the points given in the graph above are multiples of 5%.

Time taken by you: **1056 secs**

Avg Time taken by all students: **210 secs**

Your Attempt: **Wrong**

% Students got it correct: **62 %**

3) If the selling price per unit of H had been Rs. 1.5 in 2016 and quantity sold by H in 2017 had been 4750 crore units then, which of the following is closest to the revenue of H in 2017?

- Rs. 4750 crore
- Rs. 5250 crore
- Rs. 3650 crore
- Rs. 5450 crore

Video Explanation: ⌄

Explanation: ⌄

We tabulate the data as shown:

	Percentage share in market in 2017 (revenue)	% increase in total revenue in 2017 over 2016	% increase in sales in 2017-2016 number of units
A	20	30	50
B	10	40	30
C	5	60	50
D	20	40	80
E	5	40	30
F	10	50	40
G	15	70	80
H	15	40	90

Quantity sold by H in 2017 = 4750 crores units

$\therefore$ Quantity sold by H in 2016 = $\frac{4750}{1.9}$ = 2500 crores units

Now, Revenue earned by H in 2016 = 1.5 × 2500 = Rs. 3750 crores

$\therefore$ Market share of H in 2017 = 3750 crores × 1.4 = Rs. 5250 crores.

Hence, [2].

Correct Answer: ⌄

Time taken by you: **0 secs**

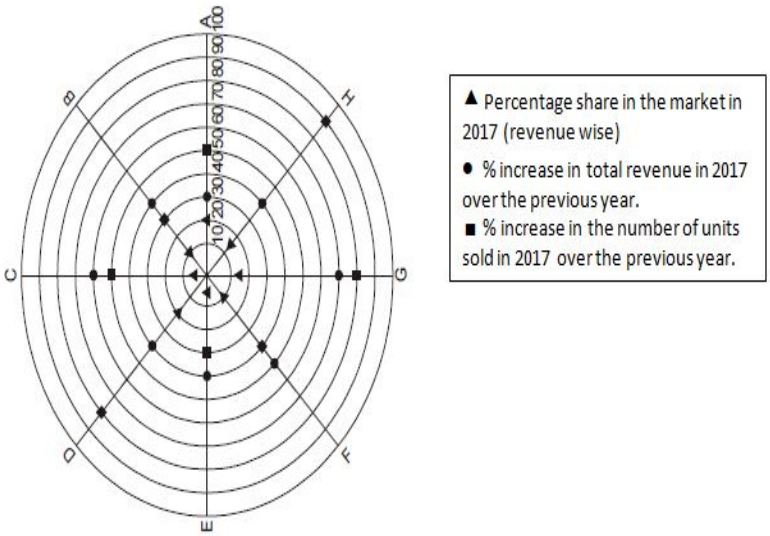
Avg Time taken by all students: **162 secs**

Your Attempt: **Skipped**

% Students got it correct: **79 %**

Refer to the data below and answer the questions that follow.

A, B, C, D, E, F, G and H are eight leading companies in healthcare industry. The following graph shows information on the percentage share of these companies in the overall healthcare industry (in terms of revenue) in 2017, percentage increase in the total revenue in 2017 over the corresponding value in 2016 and percentage increase in the total sales (in terms of number of units sold) in 2017 over the corresponding value in 2016.



Revenue is given in Rs. crore and Quantity is considered in units.

Note:

1. The only source of revenue for the given companies is through the sale of the units.

2. All the points given in the graph above are multiples of 5%.

4) Which of the following is closest to the selling price (in Rs.) per unit of item sold by B in 2016? (Refer to data from the previous question).

- 1.20
- 1.30
- 1.40
- Data insufficient

Video Explanation: ⌄

Explanation: ⌄

We tabulate the data as shown:

	Percentage share in market in 2017 (revenue)	% increase in total revenue in 2017 over 2016	% increase in sales in 2017-2016 number of units
A	20	30	50
B	10	40	30
C	5	60	50
D	20	40	80
E	5	40	30
F	10	50	40
G	15	70	80
H	15	40	90

We need to know the number of units sold by B to find the selling price per unit sold by B. Hence, [4].

Correct Answer: ⌄

Time taken by you: **0 secs**

Avg Time taken by all students: **105 secs**

Your Attempt: **Skipped**

% Students got it correct: **93 %**

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Refer to the data below and answer the questions that follow.

In a college every student, except 'differently abled' students, has to participate in at least one tournament. There are 1200 students in the college, of which 40% are girls. The table given below lists the number of boys and girls participating in different tournaments.

Tournament	Boys	Girls
Lawn Tennis	120	80
Football	240	100
Hockey	160	120
Chess	320	240
Volley Ball	100	50
Table tennis	200	60
Badminton	160	150

Lawn Tennis, Football, Hockey and Volley ball are outdoor tournaments and rest are indoor tournaments. One student can participate in at most one outdoor and one indoor tournament. 30 boys and 10 girls who are differently abled are not participating in any of the tournaments.

1) If mixed double is the only format for the Badminton tournament, wherein each team consists of one girl and one boy, then what is the minimum number of students who will definitely be a part of two teams, if it is known that a student can be a member of at most two mixed double teams.

Enter your response (as an integer) using the virtual keyboard in the box provided below.

Video Explanation:

Explanation:

There are 160 boys and 150 girls who play badminton. Hence, 150 'mixed doubles' teams can be easily formed. But 10 boys are left with no girl partner and a student can be a member of at most two mixed double teams, then 10 girls will have to form team with these 10 boys. Thus, 10 students will definitely be a part of two teams.

Therefore, the required answer is 10.

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **53 secs**

Your Attempt: **Skipped**

% Students got it correct: **42 %**

2) How many boys are participating in only one tournament?

Enter your response (as an integer) using the virtual keyboard in the box provided below.

Video Explanation:

Refer to the data below and answer the questions that follow.

In a college every student, except 'differently abled' students, has to participate in at least one tournament. There are 1200 students in the college, of which 40% are girls. The table given below lists the number of boys and girls participating in different tournaments.

Tournament	Boys	Girls
Lawn Tennis	120	80
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Hockey	160	120
Chess	320	240
Volley Ball	100	50
Table tennis	200	60
Badminton	160	150

Lawn Tennis, Football, Hockey and Volley ball are outdoor tournaments and rest are indoor tournaments. One student can participate in at most one outdoor and one indoor tournament. 30 boys and 10 girls who are differently abled are not participating in any of the tournaments.

Explanation:

Change Section here

There are total 1200 × 0.6 = 720 boys out of which 30 are not playing any tournament.

Hence, total number of boys playing at least one tournament= 690

Now, by the given condition one can participate at most in two tournaments, one outdoor and one indoor.

Now total number of boys playing = 120 + 240 + 160 + 320 + 100 + 200 + 160 = 1300

The number of boys playing more than one tournaments = 1300 – 690 = 610

Hence, number of boys participating in only one tournaments = 690 – 610 = 80

Therefore, the required answer is 80.

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **170 secs**

Your Attempt: **Skipped**

% Students got it correct: **41 %**

3) How many girls are participating in two games?

Enter your response (as an integer) using the virtual keyboard in the box provided below.

Video Explanation:

Explanation:

Total girls = 1200 × 0.4 = 480

Total number of girls playing at least one game = 480 – 10 = 470

80 + 100 + 120 + 240 + 59 + 60 + 150 = 800

∴ The number of girls playing two games = 800 – 470 = 330

Therefore, the required answer is 330.

Refer to the data below and answer the questions that follow.

In a college every student, except 'differently abled' students, has to participate in at least one tournament. There are 1200 students in the college, of which 40% are girls. The table given below lists the number of boys and girls participating in different tournaments.

Tournament	Boys	Girls
Lawn Tennis	120	80
Football	240	100
Hockey	160	120
Chess	320	240
Volley Ball	100	50
Table tennis	200	60
Badminton	160	150

Lawn Tennis, Football, Hockey and Volley ball are outdoor tournaments and rest are indoor tournaments. One student can participate in at most one outdoor and one indoor tournament. 30 boys and 10 girls who are differently abled are not participating in any of the tournaments.

Time taken by you: **0 secs**

Avg Time taken by all students: **51 secs**

Your Attempt: **Skipped**

% Students got it correct: **47 %**

4) In a chess tournament all 560 chess players participated. It was arranged in the following pattern: Pairs of randomly selected players play against each other. The winners proceed to the next round. In case there are an odd number of players in a round, one player plays with one of the winners in the same round. Then depending on who wins either one (the earlier winner) or both proceed to the next round. There is no draw possible and the player winning a match gets one point. Then after how many rounds can we surely find out a winner?

Enter your response (as an integer) using the virtual keyboard in the box provided below.

Video Explanation: ⌄

Explanation: ⌄

There are 560 players in the first round ⇒ There are 280 matches. Thus, we have

Round	Players	Winners
1	560	280
2	280	140
3	140	70
4	70	35
5	35	17 or 18
6	17 or 18	8 or 9
7	8 or 9	4 or 5
8	4 or 5	2 or 3
9	2 or 3	1 or 2

Thus, in 10 rounds one winner can be clearly determined.

Alternatively,

Number of players = 560

Now, for 512 players 9 rounds are sufficient as $2^9 = 512$.

For more than 512 and upto 1024 players, 10 rounds needed to determine a sure winner (as $2^{10} = 1024$)

Correct Answer: ⌄

Time taken by you: **0 secs**

Avg Time taken by all students: **57 s**

Change Section here ▾

Your Attempt: **Skipped**

% Students got it correct: **29 %**

Refer to the data below and answer the questions that follow.

In a college every student, except 'differently abled' students, has to participate in at least one tournament. There are 1200 students in the college, of which 40% are girls. The table given below lists the number of boys and girls participating in different tournaments.

Tournament	Boys	Girls
Lawn Tennis	120	80
Football	240	100
Hockey	160	120
Chess	320	240
Volley Ball	100	50
Table tennis	200	60
Badminton	160	150

Lawn Tennis, Football, Hockey and Volley ball are outdoor tournaments and rest are indoor tournaments. One student can participate in at most one outdoor and one indoor tournament. 30 boys and 10 girls who are differently abled are not participating in any of the tournaments.

Loading...

Refer to the data below and answer the questions that follow.

A group of six students picked up a number of identical candies from a bowl of candies kept in the class. It is known that the number of candies picked up by each student was no greater than 60 and no fewer than 40. Total number of candies picked up by the six students taken together was 286. No two students picked up equal number of candies.

Following points are known:

1. The numbers of candies picked up by exactly two students were even.
2. The numbers of candies picked up by exactly four students out of six were less than 50.
3. The numbers of candies picked up by exactly four students out of six were more than 44.
4. There are two sets of three students such that the numbers of candies with them form Arithmetic Progressions with Common Difference 2 and 4 respectively. Exactly two students are common between these two sets of three students.

We define a set of the number of candies with the six students, when arranged in the ascending order i.e. T ≡ {S1, S2, S3, S4, S5, S6}, where S1, S2, ..., S6 are the number of candies with the six students such that S1 < S2 < S3 < S4 < S5 < S6.

1) How many sets of type set T can be formed?

- 1
- 2
- 3
- More than 3

Video Explanation:

Explanation:

From statements 2 and 3, we can see that two students have at least 50 candies, two students have at most 44 candies and two students have the number of candies between 45 and 49 (both included).

From statement 4, we can see that the numbers of candies with the four out of six students are (a, a + 2, a + 4 and a + 8)/(a, a + 4, a + 6 and a + 8). From statement 1, we can see that the numbers of candies with four students are odd and that with the remaining two students are even. Thus the students with the number of candies (a, a + 2, a + 4 and a + 8)/(a, a + 4, a + 6, a + 8) have odd number of candies and the remaining two students have even number of candies.

So far we have the following:

At least 40 but less than 45		Between 45 and 49		More than 49 but at most 60	
S1	S2	S3	S4	S5	S6

Either S1, S2 or S3 can have 'a' candies. Accordingly we have the following cases:

Sr. No.	At least 40 but less than 44		Between 44 and 50		More than 50 but at most 60		Total
	S1	S2	S3	S4	S5	S6	
1	41	43	45	49	52	56	286
2	42	43	45	47	51	58	286
3	40	43	45	47	51	60	286
4	41	43	45	49	50	58	286
5	43	44	45	47	51	56	286
6	40	43	47	49	51	56	286
7	40	44	47	49	51	55	286
8	42	43	47	49	51	54	286
9	43	44	47	49	51	52	286

Nine sets of type set T can be formed. Hence, [4].

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **200 secs**

Your Attempt: **Skipped**

% Students got it correct: **40 %**

Refer to the data below and answer the questions that follow.

A group of six students picked up a number of identical candies from a bowl of candies kept in the class. It is known that the number of candies picked up by each student was no greater than 60 and no fewer than 40. Total number of candies picked up by the six students taken together was 286. No two students picked up equal number of candies.

Following points are known:

1. The numbers of candies picked up by exactly two students were even.
2. The numbers of candies picked up by exactly four students out of six were less than 50.
3. The numbers of candies picked up by exactly four students out of six were more than 44.
4. There are two sets of three students such that the numbers of candies with them form Arithmetic Progressions with Common Difference 2 and 4 respectively. Exactly two students are common between these two sets of three students.

We define a set of the number of candies with the six students, when arranged in the ascending order i.e. T ≡ {S1, S2, S3, S4, S5, S6}, where S1, S2, ..., S6 are the number of candies with the six students such that S1 < S2 < S3 < S4 < S5 < S6.

2) Consider numbers 43 and 45. Which of the following statements is correct?

- Both 43 and 45 are necessarily members of set T.
- Only 43 is necessarily a member of set T but 45 is not necessarily a member of set T.
- Only 45 is necessarily a member of set T but 43 is not necessarily a member of set T.
- Neither 43 nor 45 is necessarily a member of set T.

Video Explanation:

Explanation:

From statements 2 and 3, we can see that two students have at least 50 candies, two students have at most 44 candies and two students have the number of candies between 45 and 49 (both included).

From statement 4, we can see that the numbers of candies with the four out of six students are (a, a + 2, a + 4 and a + 8)/(a, a + 4, a + 6 and a + 8). From statement 1, we can see that the numbers of candies with four students are odd and that with the remaining two students are even. Thus the students with the number of candies (a, a + 2, a + 4 and a + 8)/(a, a + 4, a + 6, a + 8) have odd number of candies and the remaining two students have even number of candies.

So far we have the following:

At least 40 but less than 45		Between 45 and 49		More than 49 but at most 60	
S1	S2	S3	S4	S5	S6

Either S1, S2 or S3 can have 'a' candies. Accordingly we have the following cases:

Sr. No.	At least 40 but less than 44		Between 44 and 50		More than 50 but at most 60		Total
	S1	S2	S3	S4	S5	S6	
1	41	43	45	49	52	56	286
2	42	43	45	47	51	58	286
3	40	43	45	47	51	60	286
4	41	43	45	49	50	58	286
5	43	44	45	47	51	56	286
6	40	43	47	49	51	56	286
7	40	44	47	49	51	55	286
8	42	43	47	49	51	54	286
9	43	44	47	49	51	52	286

Consider case 7. Neither 43 nor 45 is necessarily a member of set T. Hence, [4].

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **48 secs**

Your Attempt: **Skipped**

Refer to the data below and answer the questions that follow.

A group of six students picked up a number of identical candies from a bowl of candies kept in the class. It is known that the number of candies picked up by each student was no greater than 60 and no fewer than 40. Total number of candies picked up by the six students taken together was 286. No two students picked up equal number of candies.

Following points are known:

1. The numbers of candies picked up by exactly two students were even.
2. The numbers of candies picked up by exactly four students out of six were less than 50.
3. The numbers of candies picked up by exactly four students out of six were more than 44.
4. There are two sets of three students such that the numbers of candies with them form Arithmetic Progressions with Common Difference 2 and 4 respectively. Exactly two students are common between these two sets of three students.

We define a set of the number of candies with the six students, when arranged in the ascending order i.e. T ≡ {S1, S2, S3, S4, S5, S6}, where S1, S2, ..., S6 are the number of candies with the six students such that S1 < S2 < S3 < S4 < S5 < S6.

3) If 47 is a member of set T, total how many members of T (including 47) can be uniquely determined (not necessarily occupying the same position when arranged in ascending order)?

- 1
- 2
- 3
- More than 3

Video Explanation:

Explanation:

From statements 2 and 3, we can see that two students have at least 50 candies, two students have at most 44 candies and two students have the number of candies between 45 and 49 (both included).

From statement 4, we can see that the numbers of candies with the four out of six students are (a, a + 2, a + 4 and a + 8)/(a, a + 4, a + 6 and a + 8). From statement 1, we can see that the numbers of candies with four students are odd and that with the remaining two students are even. Thus the students with the number of candies (a, a + 2, a + 4 and a + 8)/(a, a + 4, a + 6, a + 8) have odd number of candies and the remaining two students have even number of candies.

So far we have the following:

At least 40 but less than 45		Between 45 and 49		More than 49 but at most 60	
S1	S2	S3	S4	S5	S6

Either S1, S2 or S3 can have 'a' candies. Accordingly we have the following cases:

Sr. No.	At least 40 but less than 44		Between 44 and 50		More than 50 but at most 60		Total
	S1	S2	S3	S4	S5	S6	
1	41	43	45	49	52	56	286
2	42	43	45	47	51	58	286
3	40	43	45	47	51	60	286
4	41	43	45	49	50	58	286
5	43	44	45	47	51	56	286
6	40	43	47	49	51	56	286
7	40	44	47	49	51	55	286
8	42	43	47	49	51	54	286
9	43	44	47	49	51	52	286

We need to consider cases 2, 3, 5, 6, 7, 8 and 9. It can be seen that only 47 and 51 are necessarily members of the set. Hence, [2].

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **18 secs**

Your Attempt: **Skipped**

Change Section here

% Students got it correct: **22 %**

Refer to the data below and answer the questions that follow.

A group of six students picked up a number of identical candies from a bowl of candies kept in the class. It is known that the number of candies picked up by each student was no greater than 60 and no fewer than 40. Total number of candies picked up by the six students taken together was 286. No two students picked up equal number of candies.

Following points are known:

1. The numbers of candies picked up by exactly two students were even.
2. The numbers of candies picked up by exactly four students out of six were less than 50.
3. The numbers of candies picked up by exactly four students out of six were more than 44.
4. There are two sets of three students such that the numbers of candies with them form Arithmetic Progressions with Common Difference 2 and 4 respectively. Exactly two students are common between these two sets of three students.

We define a set of the number of candies with the six students, when arranged in the ascending order i.e. T ≡ {S1, S2, S3, S4, S5, S6}, where S1, S2, ..., S6 are the number of candies with the six students such that S1 < S2 < S3 < S4 < S5 < S6.

4) Which of the following is definitely not a member of set T?

- 41
- 42
- 46
- 52

Video Explanation:

Explanation:

From statements 2 and 3, we can see that two students have at least 50 candies, two students have at most 44 candies and two students have the number of candies between 45 and 49 (both included).

From statement 4, we can see that the numbers of candies with the four out of six students are (a, a + 2, a + 4 and a + 8)/(a, a + 4, a + 6 and a + 8). From statement 1, we can see that the numbers of candies with four students are odd and that with the remaining two students are even. Thus the students with the number of candies (a, a + 2, a + 4 and a + 8)/(a, a + 4, a + 6, a + 8) have odd number of candies and the remaining two students have even number of candies.

So far we have the following:

At least 40 but less than 45		Between 45 and 49		More than 49 but at most 60	
S1	S2	S3	S4	S5	S6

Either S1, S2 or S3 can have 'a' candies. Accordingly we have the following cases:

Sr. No.	At least 40 but less than 44		Between 44 and 50		More than 50 but at most 60		Total
	S1	S2	S3	S4	S5	S6	
1	41	43	45	49	52	56	286
2	42	43	45	47	51	58	286
3	40	43	45	47	51	60	286
4	41	43	45	49	50	58	286
5	43	44	45	47	51	56	286
6	40	43	47	49	51	56	286
7	40	44	47	49	51	55	286
8	42	43	47	49	51	54	286
9	43	44	47	49	51	52	286

'46' is not a member of set T. Hence, [3].

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **48 secs**

Your Attempt: **Skipped**

Refer to the data below and answer the questions that follow.

A group of six students picked up a number of identical candies from a bowl of candies kept in the class. It is known that the number of candies picked up by each student was no greater than 60 and no fewer than 40. Total number of candies picked up by the six students taken together was 286. No two students picked up equal number of candies.

Following points are known:

1. The numbers of candies picked up by exactly two students were even.
2. The numbers of candies picked up by exactly four students out of six were less than 50.
3. The numbers of candies picked up by exactly four students out of six were more than 44.
4. There are two sets of three students such that the numbers of candies with them form Arithmetic Progressions with Common Difference 2 and 4 respectively. Exactly two students are common between these two sets of three students.

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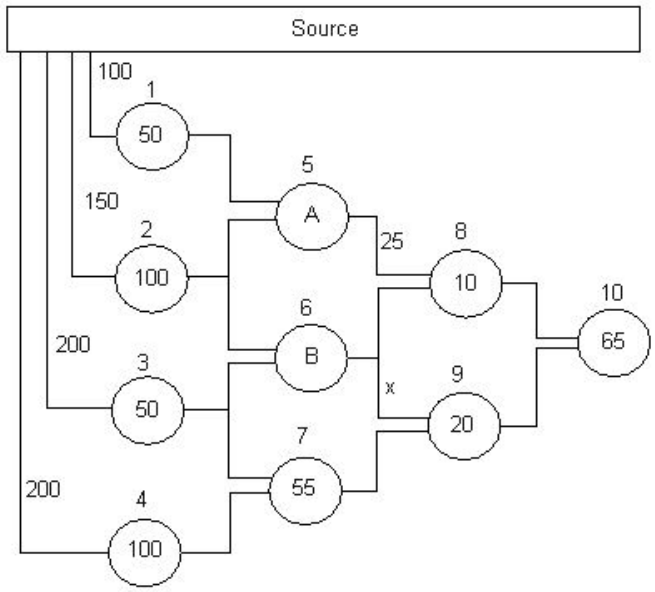
We define a set of the number of candies with the six students, when arranged in the ascending order i.e. T ≡ {S1, S2, S3, S4, S5, S6}, where S1, S2, ..., S6 are the number of candies with the six students such that S1 < S2 < S3 < S4 < S5 < S6.

Refer to the data below and answer the questions that follow.

Ten electrical equipments (denoted by circles) are connected using wire connections as shown below. The figures within the circles denote the electric energy that the equipment consumes. The figure next to a particular circle denotes its equipment number. For example: Equipment 1 consumes 50 units while equipment 5, consumes 'A' units. The figures next to a particular wire connection denote the electric energy the line carries. There was no loss of electric energy at any equipment i.e., the sum of the amount of electric energy leaving the equipment and that consumed by the equipment is equal to the amount of electric energy entering the equipment. At least one unit of electric energy must flow through all the lines. Also, the flow through each line has to be a positive integer.



1) What will be the average amount of electric energy consumed by equipment 5 and equipment 6?

- 75
- 100
- 125
- 150

Video Explanation:

Explanation:

As, there was no loss of energy,

100 + 150 + 200 + 200 = 50 + 100 + 50 + 100 + A + B + 55 + 10 + 20 + 65

On simplifying, we get A + B = 200

∴ The average amount of electric energy consumed by equipments A and B = 100.

Hence, [2].

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **339 secs**

Your Attempt: **Skipped**

% Students got it correct: **62 %**

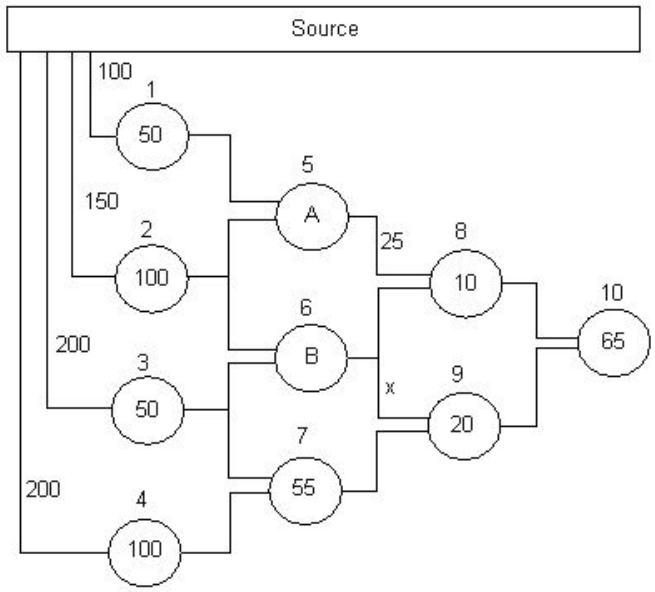
2) How many values can 'x' take?

- 3
- 23
- 68
- 28

Video Explanation:

Refer to the data below and answer the questions that follow.

Ten electrical equipments (denoted by circles) are connected using wire connections as shown below. The figures within the circles denote the electric energy that the equipment consumes. The figure next to a particular circle denotes its equipment number. For example: Equipment 1 consumes 50 units while equipment 5, consumes 'A' units. The figures next to a particular wire connection denote the electric energy the line carries. There was no loss of electric energy at any equipment i.e., the sum of the amount of electric energy leaving the equipment and that consumed by the equipment is equal to the amount of electric energy entering the equipment. At least one unit of electric energy must flow through all the lines. Also, the flow through each line has to be a positive integer.



Change Section here

The minimum value of x = 1

As, there was no loss of energy,

100 + 150 + 200 + 200 = 50 + 100 + 50 + 100 + A + B + 55 + 10 + 20 + 65

On simplifying, we get A + B = 200

Energy consumed by first 7 equipments = 50 + 100 + 50 + 100 + (A + B) + 55 = 50 + 100 + 50 + 100 + 200 + 55 = 555

Hence, energy outflow from equipment 5, 6, 7 = 650 – 555 = 95

As energy outflow from equipment A (i.e., the fifth equipment) was 25 units, 95 – 25 = 70 units flow out from the 6^{th} and the 7^{th} equipment.

Minimum energy inflow in the 7^{th} equipment = 100 + 1 = 101 units

⇒ Minimum outflow of energy from the 7^{th} equipment = 101 – 55 = 46

Thus, maximum outflow of energy from the 6^{th} equipment = 70 – 46 = 24 units

Of these 24 units, at least 1 unit of energy flows towards the 8^{th} equipment.

Therefore, the maximum value of x = 24 – 1 = 23 units

Thus, 'x' can take values from 1 to 23.

Hence, [2].

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **70 secs**

Your Attempt: **Skipped**

% Students got it correct: **40 %**

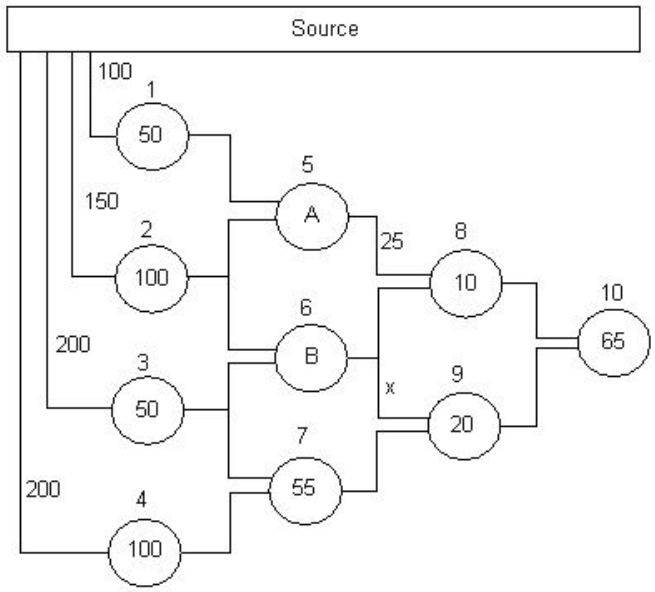
3) What can be the maximum amount of electric energy flowing through the line connecting equipment 8 and equipment 10?

- 13 units
- 64 units
- 38 units
- 39 units

Video Explanation:

Refer to the data below and answer the questions that follow.

Ten electrical equipments (denoted by circles) are connected using wire connections as shown below. The figures within the circles denote the electric energy that the equipment consumes. The figure next to a particular circle denotes its equipment number. For example: Equipment 1 consumes 50 units while equipment 5, consumes 'A' units. The figures next to a particular wire connection denote the electric energy the line carries. There was no loss of electric energy at any equipment i.e., the sum of the amount of electric energy leaving the equipment and that consumed by the equipment is equal to the amount of electric energy entering the equipment. At least one unit of electric energy must flow through all the lines. Also, the flow through each line has to be a positive integer.



Explanation:

Change Section here

As, there was no loss of energy,

100 + 150 + 200 + 200 = 50 + 100 + 50 + 100 + A + B + 55 + 10 + 20 + 65

On simplifying, we get A + B = 200

Energy consumed by first 7 equipments = 50 + 100 + 50 + 100 + (A + B) + 55 = 50 + 100 + 50 + 100 + 200 + 55 = 555

Hence, energy outflow from equipment 5, 6, 7 = 650 – 555 = 95

As energy outflow from equipment A (i.e., the fifth equipment) was 25 units, 95 – 25 = 70 units flow out from the 6^{th} and the 7^{th} equipment.

Minimum energy inflow in the 7^{th} equipment = 100 + 1 = 101 units

⇒ Minimum outflow of energy from the 7^{th} equipment = 101 – 55 = 46

Thus, maximum outflow of energy from the 6^{th} equipment = 70 – 46 = 24 units

The minimum value of x = 1

Therefore, the maximum inflow in equipment 8 = 25 + (24 – 1) = 48 units

10 units energy was consumed by equipment 8.

Therefore, a maximum of 48 – 10 = 38 units of energy could flow through the line connecting the equipment 8 and equipment 10.

Hence, [3].

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **67 secs**

Your Attempt: **Skipped**

% Students got it correct: **38 %**

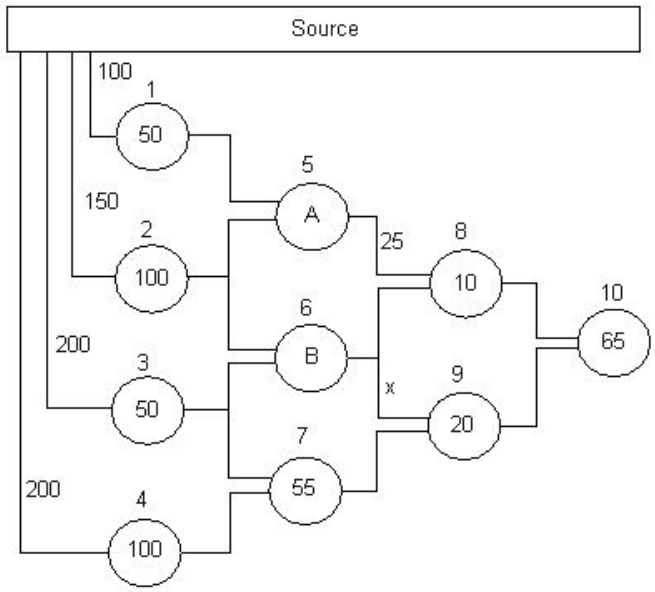
4) Which of the following cannot be the amount of electric energy flowing between equipment 6 and equipment 8?

- 1
- 13
- 14
- 24

Video Explanation:

Refer to the data below and answer the questions that follow.

Ten electrical equipments (denoted by circles) are connected using wire connections as shown below. The figures within the circles denote the electric energy that the equipment consumes. The figure next to a particular circle denotes its equipment number. For example: Equipment 1 consumes 50 units while equipment 5, consumes 'A' units. The figures next to a particular wire connection denote the electric energy the line carries. There was no loss of electric energy at any equipment i.e., the sum of the amount of electric energy leaving the equipment and that consumed by the equipment is equal to the amount of electric energy entering the equipment. At least one unit of electric energy must flow through all the lines. Also, the flow through each line has to be a positive integer.



Explanation:

The minimum value of x = 1

As, there was no loss of energy,

100 + 150 + 200 + 200 = 50 + 100 + 50 + 100 + A + B + 55 + 10 + 20 + 65

On simplifying, we get A + B = 200

Energy consumed by first 7 equipments = 50 + 100 + 50 + 100 + (A + B) + 55 = 50 + 100 + 50 + 100 + 200 + 55 = 555

Hence, energy outflow from equipment 5, 6, 7 = 650 – 555 = 95

As energy outflow from equipment A (i.e., the fifth equipment) was 25 units, 95 – 25 = 70 units flow out from the 6^{th} and the 7^{th} equipment.

Minimum energy inflow in the 7^{th} equipment = 100 + 1 = 101 units

⇒ Minimum outflow of energy from the 7^{th} equipment = 101 – 55 = 46

Thus, maximum outflow of energy from the 6^{th} equipment = 70 – 46 = 24 units

Of these 24 units, at least 1 unit of energy flows towards the 9^{th} equipment.

Therefore the maximum amount of energy that can flow between equipment 6 and equipment 8 must be 23.

Hence, [4].

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **51 secs**

Your Attempt: **Skipped**

% Students got it correct: **49 %**

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Refer to the data below and answer the questions that follow.

The sports coach of the Old Dermit sports team evaluated his four star players Avery, Barty, Crabbe and Draco on the basis of three parameters. These are a few facts he found:

i. No two players are equal on any of the parameters.

ii. The only one faster than Barty is the weakest.

iii. The tallest one is the slowest but is stronger than Crabbe.

iv. Avery is neither taller than Draco nor stronger than him.

v. One of the four is taller, faster as well as stronger than at least two others.

1) Who is the slowest?

- Avery
- Crabbe
- Draco
- Cannot be determined

Video Explanation:

Explanation:

From statements (iii) and (iv), Avery and Crabbe are not the tallest and hence are not the slowest. From statements (ii) and (iii), Barty is not the slowest and hence not the tallest. Thus, it can be concluded that Draco is the tallest and the slowest player. Hence, [3].

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **443 secs**

Your Attempt: **Skipped**

% Students got it correct: **75 %**

2) Who would rank 2nd on the basis of height (the 1st ranker being the tallest)?

- Avery
- Barty
- Crabbe
- Cannot be determined

Video Explanation:

Change Section here

Refer to the data below and answer the questions that follow.

The sports coach of the Old Dermit sports team evaluated his four star players Avery, Barty, Crabbe and Draco on the basis of three parameters. These are a few facts he found:

i. No two players are equal on any of the parameters.

ii. The only one faster than Barty is the weakest.

iii. The tallest one is the slowest but is stronger than Crabbe.

iv. Avery is neither taller than Draco nor stronger than him.

v. One of the four is taller, faster as well as stronger than at least two others.

Explanation:

From statements (iii) and (iv), Avery and Crabbe are not the tallest and hence are not the slowest. From statements (ii) and (iii), Barty is not the slowest and hence not the tallest. Thus, it can be concluded that Draco is the tallest and the slowest player.

Now from statement (ii), Barty is ranked 2nd on the basis of speed. Also, Barty and Draco are not the weakest players. Therefore, either Avery or Crabbe is the weakest player. If Avery is the fastest and the weakest, Crabbe must be at rank 3 on the basis of speed. So from statement (v), Avery and Crabbe cannot be the one who secured rank 1 or 2 in all the three parameters. Therefore, it has to be Barty. Thus Barty would rank 2nd on the basis of height.

Hence, [2].

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **73 secs**

Your Attempt: **Skipped**

% Students got it correct: **62 %**

3) If Crabbe does not have the same rank on any two of the parameters, who is the weakest?

- Avery
- Barty
- Crabbe
- Cannot be determined

Video Explanation:

Explanation:

Change Section here

Refer to the data below and answer the questions that follow.

The sports coach of the Old Dermit sports team evaluated his four star players Avery, Barty, Crabbe and Draco on the basis of three parameters. These are a few facts he found:

i. No two players are equal on any of the parameters.

ii. The only one faster than Barty is the weakest.

iii. The tallest one is the slowest but is stronger than Crabbe.

iv. Avery is neither taller than Draco nor stronger than him.

v. One of the four is taller, faster as well as stronger than at least two others.

From statements (iii) and (iv), Avery and Crabbe are not the tallest and hence are not the slowest. From statements (ii) and (iii), Barty is not the slowest and hence not the tallest. Thus, it can be concluded that Draco is the tallest and the slowest player.

Now from statement (ii), Barty is ranked 2nd on the basis of speed. Also, Barty and Draco are not the weakest players. Therefore, either Avery or Crabbe is the weakest player. If Avery is the fastest and the weakest, Crabbe must be at rank 3 on the basis of speed. So from statement (v), Avery and Crabbe cannot be the one who secured rank 1 or 2 in all the three parameters. Therefore, it has to be Barty. Thus Barty would rank 2nd on the basis of height. Also, his rank on the basis of strength would be 1 or 2.

As Draco is the tallest, he is stronger than Crabbe. Also from statement (iv) Draco is stronger than Avery. So, Draco's rank on the basis of strength would be 1 or 2.

Rank	Height	Strength	Speed
1	Draco	Draco/Barty	Avery/Crabbe
2	Barty	Barty/Draco	Barty
3	Avery/Crabbe	Avery/Crabbe	Crabbe/Avery
4	Crabbe/Avery	Crabbe/Avery	Draco

If Crabbe does not have the same rank on any 2 of the parameters, then he has to be the fastest and hence, the weakest. Hence, [3].

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **46 secs**

Your Attempt: **Skipped**

% Students got it correct: **48 %**

4) If the four players ran a race and the first two rankers then competed against each other in a tug-of-war, who would emerge as the winner?

- Barty
- Crabbe
- Draco ✗
- Cannot be determined

Video Explanation:

Change Section here

Refer to the data below and answer the questions that follow.

The sports coach of the Old Dermit sports team evaluated his four star players Avery, Barty, Crabbe and Draco on the basis of three parameters. These are a few facts he found:

i. No two players are equal on any of the parameters.

ii. The only one faster than Barty is the weakest.

iii. The tallest one is the slowest but is stronger than Crabbe.

iv. Avery is neither taller than Draco nor stronger than him.

v. One of the four is taller, faster as well as stronger than at least two others.

Explanation:

From statements (iii) and (iv), Avery and Crabbe are not the tallest and hence are not the slowest. From statements (ii) and (iii), Barty is not the slowest and hence not the tallest. Thus, it can be concluded that Draco is the tallest and the slowest player.

Now from statement (ii), Barty is ranked 2nd on the basis of speed. Also, Barty and Draco are not the weakest players. Therefore, either Avery or Crabbe is the weakest player. If Avery is the fastest and the weakest, Crabbe must be at rank 3 on the basis of speed. So from statement (v), Avery and Crabbe cannot be the one who secured rank 1 or 2 in all the three parameters. Therefore, it has to be Barty. Thus Barty would rank 2nd on the basis of height. Also, his rank on the basis of strength would be 1 or 2.

As Draco is the tallest, he is stronger than Crabbe. Also from statement (iv) Draco is stronger than Avery. So, Draco's rank on the basis of strength would be 1 or 2.

Rank	Height	Strength	Speed
1	Draco	Draco/Barty	Avery/Crabbe
2	Barty	Barty/Draco	Barty
3	Avery/Crabbe	Avery/Crabbe	Crabbe/Avery
4	Crabbe/Avery	Crabbe/Avery	Draco

The first two rankers of the running race would be (Avery/Crabbe, Barty). In any case Barty would win the tug-of-war. Hence, [1].

Correct Answer:

Time taken by you: **325 secs**

Avg Time taken by all students: **45 secs**

Your Attempt: **Wrong**

% Students got it correct: **76 %**

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Refer to the data below and answer the questions that follow.

Four couples, i.e., the Guptas, Patels, Khannas and Shahs join at a party. They sit on equally spaced chairs around a circular table facing the centre of the table. Following conditions are to be satisfied.

1. No husband and wife sit next to each other.

2. No two husbands sit next to each other.

3. Mrs. Patel sits opposite to Mrs. Khanna.

1) In how many ways, can these four couples can be seated?

- 8
- 4
- 16
- 2

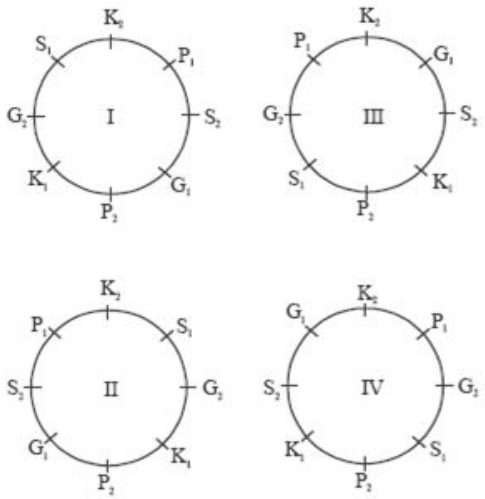
Video Explanation:

Explanation:

From statement 2, no two wives also sit next to each other. Hence, all men and women sit alternately on 8 chairs.

Now, it's given that Mrs. Patel and Mrs. Khanna sit opposite to each other. That means Mrs. Shah and Mrs. Gupta will occupy the other two chairs which are alternately placed between Mrs. Khanna and Mrs. Patel. Also, only either Mr. Shah or Mr. Patel or Mr. Gupta can sit next to Mrs. Khanna. Simiarly, only either Mr. Shah or Mr. Khanna or Mr. Gupta can sit next to Mrs. Patel.

This is shown in the following diagrams. P_1 and P_2 denote Mr. and Mrs. Patel respectively. Similar notations are used to denote other couples also.



The four couples can be seated in 4 ways. Hence, [2].

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **172 secs**

Your Attempt: **Skipped**

% Students got it correct: **38 %**

2) If Mrs. Shah and Mr. Patel sit next to each other, then who sits opposite to Mr. Shah?

Refer to the data below and answer the questions that follow.

Four couples, i.e., the Guptas, Patels, Khannas and Shahs join at a party. They sit on equally spaced chairs around a circular table facing the centre of the table. Following conditions are to be satisfied.

1. No husband and wife sit next to each other.

2. No two husbands sit next to each other.

3. Mrs. Patel sits opposite to Mrs. Khanna.

Mr. Khanna

Mrs. Patel

Mr. Gupta

Cannot be determined

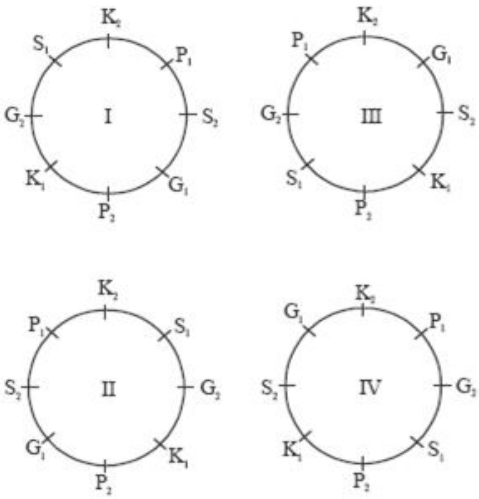
Video Explanation:

Explanation:

From statement 2, no two wives also sit next to each other. Hence, all men and women sit alternately on 8 chairs.

Now, it's given that Mrs. Patel and Mrs. Khanna sit opposite to each other. That means Mrs. Shah and Mrs. Gupta will occupy the other two chairs which are alternately placed between Mrs. Khanna and Mrs. Patel. Also, only either Mr. Shah or Mr. Patel or Mr. Gupta can sit next to Mrs. Khanna. Simiarly, only either Mr. Shah or Mr. Khanna or Mr. Gupta can sit next to Mrs. Patel.

This is shown in the following diagrams. P_1 and P_2 denote Mr. and Mrs. Patel respectively. Similar notations are used to denote other couples also.



If Mrs. Shah and Mr. Patel sit next to each other, then Mr. Gupta will sit opposite to Mr. Shah. Hence, [3].

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **172 secs**

Your Attempt: **Skipped**

% Students got it correct: **65 %**

3) If Mr. Gupta and Mrs. Khanna are adjacent to each other, then who among the following is to the right of Mr. Shah?

Mrs. Gupta

Mrs. Patel

Mrs. Khanna

Refer to the data below and answer the questions that follow.

Four couples, i.e., the Guptas, Patels, Khannas and Shahs join at a party. They sit on equally spaced chairs around a circular table facing the centre of the table. Following conditions are to be satisfied.

1. No husband and wife sit next to each other.

2. No two husbands sit next to each other.

3. Mrs. Patel sits opposite to Mrs. Khanna.

Either Mrs. Gupta or Mrs. Patel

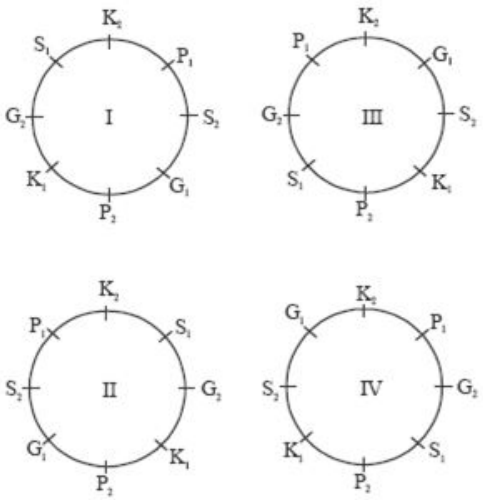
Video Explanation:

Explanation:

From statement 2, no two wives also sit next to each other. Hence, all men and women sit alternately on 8 chairs.

Now, it's given that Mrs. Patel and Mrs. Khanna sit opposite to each other. That means Mrs. Shah and Mrs. Gupta will occupy the other two chairs which are alternately placed between Mrs. Khanna and Mrs. Patel. Also, only either Mr. Shah or Mr. Patel or Mr. Gupta can sit next to Mrs. Khanna. Simiarly, only either Mr. Shah or Mr. Khanna or Mr. Gupta can sit next to Mrs. Patel.

This is shown in the following diagrams. P_1 and P_2 denote Mr. and Mrs. Patel respectively. Similar notations are used to denote other couples also.



If Mr. Gupta and Mrs. Khanna are adjacent to each other, then either Mrs. Gupta or Mrs. Patel is to the right of Mr. Shah. Hence, [4].

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **103 secs**

Your Attempt: **Skipped**

% Students got it correct: **60 %**

4) If all the female members are made to face outside and all the male members face inside, then which of the following is definitely false?

- Mrs. Khanna is third to the right of Mr. Khanna.
- Mr. Gupta is second to the left of Mr. Patel.
- Mrs. Shah is always to right of Mr. Gupta.
- Mrs. Khanna is to the immediate left of Mr. Gupta.

Refer to the data below and answer the questions that follow.

Four couples, i.e., the Guptas, Patels, Khannas and Shahs join at a party. They sit on equally spaced chairs around a circular table facing the centre of the table. Following conditions are to be satisfied.

1. No husband and wife sit next to each other.

2. No two husbands sit next to each other.

3. Mrs. Patel sits opposite to Mrs. Khanna.

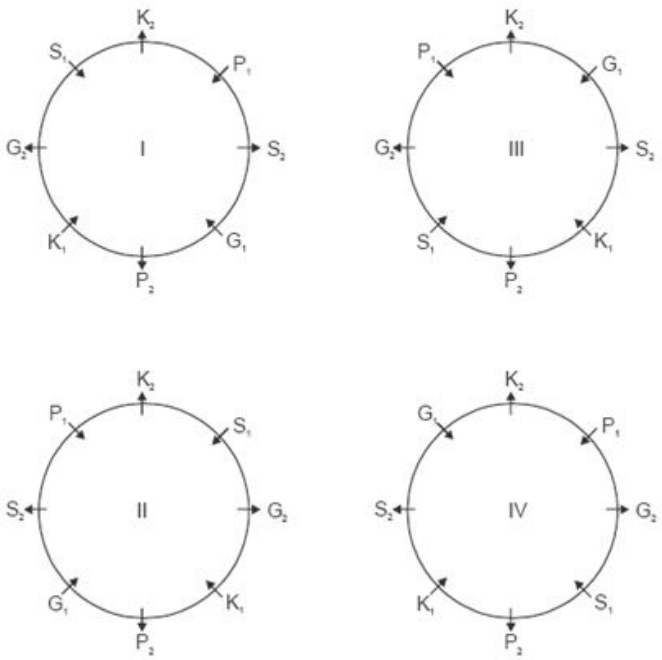
Explanation:

From statement 2, no two wives also sit next to each other. Hence, all men and women sit alternately on 8 chairs.

Now, it's given that Mrs. Patel and Mrs. Khanna sit opposite to each other. That means Mrs. Shah and Mrs. Gupta will occupy the other two chairs which are alternately placed between Mrs. Khanna and Mrs. Patel. Also, only either Mr. Shah or Mr. Patel or Mr. Gupta can sit next to Mrs. Khanna. Simiarly, only either Mr. Shah or Mr. Khanna or Mr. Gupta can sit next to Mrs. Patel.

This is shown in the following diagrams. P_1 and P_2 denote Mr. and Mrs. Patel respectively. Similar notations are used to denote other couples also.

Also, since all the female members are made to face outside and all the male members face inwards, the possible arrangements can be shown as,



Hence, [3].

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **111 secs**

Your Attempt: **Skipped**

% Students got it correct: **63 %**

Refer to the data below and answer the questions that follow.

Four couples, i.e., the Guptas, Patels, Khannas and Shahs join at a party. They sit on equally spaced chairs around a circular table facing the centre of the table. Following conditions are to be satisfied.

1. No husband and wife sit next to each other.

2. No two husbands sit next to each other.

3. Mrs. Patel sits opposite to Mrs. Khanna.

Refer to the data below and answer the questions that follow.

Nine friends, named A, B, C, D, E, F, G, H and I participated in a tournament involving five races of 100 m each. In each race, the winner of the race got five points, the first runner up got three points and the second runner up got one point. It is known that in none of the five races, there was a tie for the first three places.

Following table shows the number of points won by the nine friends in the tournament:

Friend	A	B	C	D	E	F	G	H	I
Points	6	4	10	0	5	5	8	2	5

It is known that E did not win any race.

1) If {p, q, r, s, t} denotes the set of the points won by a friend in the five races, when arranged in the ascending order, for how many of nine friends, can the five elements of the set be uniquely determined?

- 9
- 7
- 6
- Less than 6

Video Explanation:

Explanation:

In each of the races one person got 5 points, one person got 3 points, one person got 1 point and 6 persons got 0 points.

The total points of H = 2, it has to be in the form of 1 + 1, thus he was 2nd runner up in two races. The total points of B = 4, it has to be in the form of (3 + 1), thus he was 1st runner up in one race and 2nd runner up in one race. E did not win any race, so 5 points must be in the form (3 + 1 + 1), thus he was 1st runner up in one race and 2nd runner up in two races. So here we have got the 2nd runner up for all the five races.

Now among A, C, F, G and I, no one got 1 point in any race. Thus C won two races and A got 3 points in two races. F, G and I won one race. The points distribution will be as follows:

A	3+3+0+0+0	6
B	3+1+0+0+0	4
C	5+5+0+0+0	10
D	0+0+0+0+0	0
E	3+1+1+0+0	5
F	5+0+0+0+0	5
G	5+3+0+0+0	8
H	1+1+0+0+0	2
I	5+0+0+0+0	5

It can be seen that the five elements of the set of all the nine friends can be uniquely determined. Hence, [1].

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **246 secs**

Your Attempt: **Skipped**

% Students got it correct: **47 %**

2) How many of the nine friends were the first runner up in more than one race?

Refer to the data below and answer the questions that follow.

Nine friends, named A, B, C, D, E, F, G, H and I participated in a tournament involving five races of 100 m each. In each race, the winner of the race got five points, the first runner up got three points and the second runner up got one point. It is known that in none of the five races, there was a tie for the first three places.

Following table shows the number of points won by the nine friends in the tournament:

Friend	A	B	C	D	E	F	G	H	I
Points	6	4	10	0	5	5	8	2	5

It is known that E did not win any race.

0

1

2

More than 2

Video Explanation: ⌄

Explanation: ⌄

In each of the races one person got 5 points, one person got 3 points, one person got 1 point and 6 persons got 0 points.

The total points of H = 2, it has to be in the form of 1 + 1, thus he was 2nd runner up in two races. The total points of B = 4, it has to be in the form of (3 + 1), thus he was 1st runner up in one race and 2nd runner up in one race. E did not win any race, so 5 points must be in the form (3 + 1 + 1), thus he was 1st runner up in one race and 2nd runner up in two races. So here we have got the 2nd runner up for all the five races.

Now among A, C, F, G and I, no one got 1 point in any race. Thus C won two races and A got 3 points in two races. F, G and I won one race. The points distribution will be as follows:

A	3+3+0+0+0	6
B	3+1+0+0+0	4
C	5+5+0+0+0	10
D	0+0+0+0+0	0
E	3+1+1+0+0	5
F	5+0+0+0+0	5
G	5+3+0+0+0	8
H	1+1+0+0+0	2
I	5+0+0+0+0	5

It can be seen that only A stood first runner up (scored 3) in more than one race. Hence, [2].

Correct Answer: ⌄

Time taken by you: **0 secs**

Avg Time taken by all students: **84 secs**

Your Attempt: **Skipped**

% Students got it correct: **49 %**

3) How many of the nine friends scored 0 points in more than two rounds?

Enter your response (as an integer) using the virtual keyboard in the box provided below.

Refer to the data below and answer the questions that follow.

Nine friends, named A, B, C, D, E, F, G, H and I participated in a tournament involving five races of 100 m each. In each race, the winner of the race got five points, the first runner up got three points and the second runner up got one point. It is known that in none of the five races, there was a tie for the first three places.

Following table shows the number of points won by the nine friends in the tournament:

Friend	A	B	C	D	E	F	G	H	I
Points	6	4	10	0	5	5	8	2	5

It is known that E did not win any race.

Explanation:

In each of the races one person got 5 points, one person got 3 points, one person got 1 point and 6 persons got 0 points.

The total points of H = 2, it has to be in the form of 1 + 1, thus he was 2nd runner up in two races. The total points of B = 4, it has to be in the form of (3 + 1), thus he was 1st runner up in one race and 2nd runner up in one race. E did not win any race, so 5 points must be in the form (3 + 1 + 1), thus he was 1st runner up in one race and 2nd runner up in two races. So here we have got the 2nd runner up for all the five races.

Now among A, C, F, G and I, no one got 1 point in any race. Thus C won two races and A got 3 points in two races. F, G and I won one race. The points distribution will be as follows:

A	3+3+0+0+0	6
B	3+1+0+0+0	4
C	5+5+0+0+0	10
D	0+0+0+0+0	0
E	3+1+1+0+0	5
F	5+0+0+0+0	5
G	5+3+0+0+0	8
H	1+1+0+0+0	2
I	5+0+0+0+0	5

It can be seen that A, B, C, G and H scored 0 in three races. F and I scored 0 in four races, while D scored 0 in all the five races.

Therefore the required answer is 8.

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **28 secs**

Your Attempt: **Skipped**

% Students got it correct: **32 %**

4) How many of the nine friends scored exactly 1 in at least one race?

Enter your response (as an integer) using the virtual keyboard in the box provided below.

Video Explanation:

Refer to the data below and answer the questions that follow.

Nine friends, named A, B, C, D, E, F, G, H and I participated in a tournament involving five races of 100 m each. In each race, the winner of the race got five points, the first runner up got three points and the second runner up got one point. It is known that in none of the five races, there was a tie for the first three places.

Following table shows the number of points won by the nine friends in the tournament:

Friend	A	B	C	D	E	F	G	H	I
Points	6	4	10	0	5	5	8	2	5

It is known that E did not win any race.

In each of the races one person got 5 points, one person got 3 points, one person got 1 point and 6 persons got 0 points.

The total points of H = 2, it has to be in the form of 1 + 1, thus he was 2nd runner up in two races. The total points of B = 4, it has to be in the form of (3 + 1), thus he was 1st runner up in one race and 2nd runner up in one race. E did not win any race, so 5 points must be in the form (3 + 1 + 1), thus he was 1st runner up in one race and 2nd runner up in two races. So here we have got the 2nd runner up for all the five races.

Now among A, C, F, G and I, no one got 1 point in any race. Thus C won two races and A got 3 points in two races. F, G and I won one race. The points distribution will be as follows:

A	3 + 3 + 0 + 0 + 0	6
B	3 + 1 + 0 + 0 + 0	4
C	5 + 5 + 0 + 0 + 0	10
D	0 + 0 + 0 + 0 + 0	0
E	3 + 1 + 1 + 0 + 0	5
F	5 + 0 + 0 + 0 + 0	5
G	5 + 3 + 0 + 0 + 0	8
H	1 + 1 + 0 + 0 + 0	2
I	5 + 0 + 0 + 0 + 0	5

It can be seen that B, E and H scored 1 in at least one race.

Therefore, the required answer is 3.

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **30 secs**

Your Attempt: **Skipped**

% Students got it correct: **44 %**

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Refer to the data below and answer the questions that follow.

South Pacific Conference on Social Sciences was held in the campus of the University of South Pacific in Suva. Papers on seven Social Science subjects, namely Economics, History, Sociology, Political Science, Law, Foreign Policy and International Finance were presented at the conference.

The conference was held over five days: Monday to Friday. On each day, there were six sessions of one hour each, out of which the first three sessions are held before the lunch break and the next three sessions are held after the lunch break. Paper on exactly one subject was presented in each session.

Following were the constraints on scheduling the paper presentations:

1. The first session held every day had a paper either on Economics or History.
2. Whenever the papers on Sociology were presented, they were presented in two consecutive sessions without any lunch break between the two sessions.
3. At least one paper on History was presented every day. However, the papers on History were not presented in consecutive sessions.
4. At most one paper on Foreign Policy, International Finance and Law could be presented on each day.
5. The paper on Political Science was presented in the last session of the day, whenever it was presented.
6. The papers on Law were presented in the 3rd session of the day, whenever it was presented. No paper on Law was presented on Tuesday.
7. The paper on Foreign Policy was not presented on Monday or Tuesday.
8. In all, 6 papers on Economics, 8 papers on History, 6 papers on Sociology, 3 papers on Political Science, 2 papers on Law, 3 papers on Foreign Policy and 2 papers on International Finance were presented in the conference.

Following is the partially filled schedule of the papers presented in the conference:

	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Monday	History		International Finance	Economics		Political Science
Tuesday				Economics	History	
Wednesday			Foreign Policy			History
Thursday	Economics			Sociology		
Friday				History		

1) Out of the six papers on Sociology presented in the conference, the days and the sessions of their presentation can be determined for how many of the papers?

- 0
- 2
- 4
- 6

Video Explanation:

Explanation:

From point 7, the two papers on Law were presented in the 3rd sessions on Thursday and Friday.

From points 1 and 2, papers on Sociology were presented in the 2nd and 3rd sessions on Tuesday, 4th and 5th sessions on Wednesday and 4th and 5th sessions on Thursday.

From point 8, we need to account for exactly one paper on Foreign policy on Wednesday, Thursday and Friday.

From point 3, at least one paper on History was presented everyday.

From point 6, on two days out of Tuesday, Thursday and Friday, the 6th session had a paper on Political Science.

So far we have the following:

	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Monday	History	Economics	International Finance	Economics		Political Science
Tuesday		Sociology	Sociology	Economics	History	Political Science
Wednesday			Foreign Policy	Sociology	Sociology	History
Thursday	Economics	History / Foreign policy	Law	Sociology	Sociology	Foreign policy/History
Friday			Law	History		Political Science

We have yet to account for one paper on International Finance, one paper on Foreign policy, two papers on Economics and three papers on History.

Hence, [4].

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **330 secs**

Your Attempt: **Skipped**

% Students got it correct: **41 %**

Refer to the data below and answer the questions that follow.

South Pacific Conference on Social Sciences was held in the campus of the University of South Pacific in Suva. Papers on seven Social Science subjects, namely Economics, History, Sociology, Political Science, Law, Foreign Policy and International Finance were presented at the conference.

The conference was held over five days: Monday to Friday. On each day, there were six sessions of one hour each, out of which the first three sessions are held before the lunch break and the next three sessions are held after the lunch break. Paper on exactly one subject was presented in each session.

Following were the constraints on scheduling the paper presentations:

1. The first session held every day had a paper either on Economics or History.
2. Whenever the papers on Sociology were presented, they were presented in two consecutive sessions without any lunch break between the two sessions.
3. At least one paper on History was presented every day. However, the papers on History were not presented in consecutive sessions.
4. At most one paper on Foreign Policy, International Finance and Law could be presented on each day.
5. The paper on Political Science was presented in the last session of the day, whenever it was presented.
6. The papers on Law were presented in the 3rd session of the day, whenever it was presented. No paper on Law was presented on Tuesday.
7. The paper on Foreign Policy was not presented on Monday or Tuesday.
8. In all, 6 papers on Economics, 8 papers on History, 6 papers on Sociology, 3 papers on Political Science, 2 papers on Law, 3 papers on Foreign Policy and 2 papers on International Finance were presented in the conference.

Following is the partially filled schedule of the papers presented in the conference:

	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Monday	History		International Finance	Economics		Political Science
Tuesday				Economics	History	
Wednesday			Foreign Policy			History
Thursday	Economics			Sociology		
Friday				History		

2) Which of the following cannot be the paper presented in the 2nd session on Friday?

- International Finance
- Economics
- Sociology ✓
- History

Video Explanation:

Explanation:

From point 7, the two papers on Law were presented in the 3rd sessions on Thursday and Friday.

From points 1 and 2, papers on Sociology were presented in the 2nd and 3rd sessions on Tuesday, 4th and 5th sessions on Wednesday and 4th and 5th sessions on Thursday.

From point 8, we need to account for exactly one paper on Foreign policy on Wednesday, Thursday and Friday.

From point 3, at least one paper on History was presented everyday.

From point 6, on two days out of Tuesday, Thursday and Friday, the 6th session had a paper on Political Science.

So far we have the following:

	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Monday	History	Economics	International Finance	Economics		Political Science
Tuesday		Sociology	Sociology	Economics	History	Political Science
Wednesday			Foreign Policy	Sociology	Sociology	History
Thursday	Economics	History / Foreign policy	Law	Sociology	Sociology	Foreign policy/History
Friday			Law	History		Political Science

We have yet to account for one paper on International Finance, one paper on Foreign policy, two papers on Economics and three papers on History.

Hence, [3].

Correct Answer:

Time taken by you: **2219 secs**

Avg Time taken by all students: **178 secs**

Your Attempt: **Correct**

% Students got it correct: **70 %**

3) Additional information for Q.31 and Q.32

A paper on History was presented in the 1st session on

Refer to the data below and answer the questions that follow.

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The conference was held over five days: Monday to Friday. On each day, there were six sessions of one hour each, out of which the first three sessions are held before the lunch break and the next three sessions are held after the lunch break. Paper on exactly one subject was presented in each session.

Following were the constraints on scheduling the paper presentations:

1. The first session held every day had a paper either on Economics or History.
2. Whenever the papers on Sociology were presented, they were presented in two consecutive sessions without any lunch break between the two sessions.
3. At least one paper on History was presented every day. However, the papers on History were not presented in consecutive sessions.
4. At most one paper on Foreign Policy, International Finance and Law could be presented on each day.
5. The paper on Political Science was presented in the last session of the day, whenever it was presented.
6. The papers on Law were presented in the 3rd session of the day, whenever it was presented. No paper on Law was presented on Tuesday.
7. The paper on Foreign Policy was not presented on Monday or Tuesday.
8. In all, 6 papers on Economics, 8 papers on History, 6 papers on Sociology, 3 papers on Political Science, 2 papers on Law, 3 papers on Foreign Policy and 2 papers on International Finance were presented in the conference.

Following is the partially filled schedule of the papers presented in the conference:

	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Monday	History		International Finance	Economics		Political Science
Tuesday				Economics	History	
Wednesday			Foreign Policy			History
Thursday	Economics			Sociology		
Friday				History		

Wednesday, a paper on International Finance was presented in the 2nd session on Fri

Change Section here

Out of the eight papers on History presented in the conference, the days and the sessions of their presentation can be determined for how many of the papers?

Enter your response (as an integer) using the virtual keyboard in the box provided below.

Video Explanation:

Explanation:

From point 7, the two papers on Law were presented in the 3rd sessions on Thursday and Friday.

From points 1 and 2, papers on Sociology were presented in the 2nd and 3rd sessions on Tuesday, 4th and 5th sessions on Wednesday and 4th and 5th sessions on Thursday.

From point 8, we need to account for exactly one paper on Foreign policy on Wednesday, Thursday and Friday.

From point 3, at least one paper on History was presented everyday.

From point 6, on two days out of Tuesday, Thursday and Friday, the 6th session had a paper on Political Science.

So far we have the following:

	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Monday	History	Economics	International Finance	Economics		Political Science
Tuesday		Sociology	Sociology	Economics	History	Political Science
Wednesday			Foreign Policy	Sociology	Sociology	History
Thursday	Economics	History / Foreign policy	Law	Sociology	Sociology	Foreign policy/History
Friday			Law	History		Political Science

We have yet to account for one paper on International Finance, one paper on Foreign policy, two papers on Economics and three papers on History.

As a paper on History was presented in the first session on Wednesday and the papers on History cannot be presented in consecutive sessions we get the following:

Refer to the data below and answer the questions that follow.

South Pacific Conference on Social Sciences was held in the campus of the University of South Pacific in Suva. Papers on seven Social Science subjects, namely Economics, History, Sociology, Political Science, Law, Foreign Policy and International Finance were presented at the conference.

The conference was held over five days: Monday to Friday. On each day, there were six sessions of one hour each, out of which the first three sessions are held before the lunch break and the next three sessions are held after the lunch break. Paper on exactly one subject was presented in each session.

Following were the constraints on scheduling the paper presentations:

1. The first session held every day had a paper either on Economics or History.
2. Whenever the papers on Sociology were presented, they were presented in two consecutive sessions without any lunch break between the two sessions.
3. At least one paper on History was presented every day. However, the papers on History were not presented in consecutive sessions.
4. At most one paper on Foreign Policy, International Finance and Law could be presented on each day.
5. The paper on Political Science was presented in the last session of the day, whenever it was presented.
6. The papers on Law were presented in the 3rd session of the day, whenever it was presented. No paper on Law was presented on Tuesday.
7. The paper on Foreign Policy was not presented on Monday or Tuesday.
8. In all, 6 papers on Economics, 8 papers on History, 6 papers on Sociology, 3 papers on Political Science, 2 papers on Law, 3 papers on Foreign Policy and 2 papers on International Finance were presented in the conference.

Following is the partially filled schedule of the papers presented in the conference:

	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Monday	History		International Finance	Economics		Political Science
Tuesday				Economics	History	
Wednesday			Foreign Policy			History
Thursday	Economics			Sociology		
Friday				History		

	Session 1	Session 2	Session			
Monday	History	Economics	International Finance	Economics		Political Science
Tuesday		Sociology	Sociology	Economics	History	Political Science
Wednesday	History		Foreign Policy	Sociology	Sociology	History
Thursday	Economics	History/Foreign policy	Law	Sociology	Sociology	Foreign policy/History
Friday		International Finance	Law	History		Political Science

The remaining blank spaces can account for the remaining two papers on History and one paper on Economics, in any order.

Therefore, the required answer is 5.

Correct Answer:

Time taken by you: **0 secs**

Avg Time taken by all students: **52 secs**

Your Attempt: **Skipped**

% Students got it correct: **33 %**

4) Additional information for Q.31 and Q.32

A paper on History was presented in the 1st session on Wednesday, a paper on International Finance was presented in the 2nd session on Friday.

What can be the maximum possible number of instances where the papers on Economics and History were presented consecutively, not necessarily in the same order?

Enter your response (as an integer) using the virtual keyboard in the box provided below.

Video Explanation:

Explanation:

Refer to the data below and answer the questions that follow.

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The conference was held over five days: Monday to Friday. On each day, there were six sessions of one hour each, out of which the first three sessions are held before the lunch break and the next three sessions are held after the lunch break. Paper on exactly one subject was presented in each session.

Following were the constraints on scheduling the paper presentations:

1. The first session held every day had a paper either on Economics or History.
2. Whenever the papers on Sociology were presented, they were presented in two consecutive sessions without any lunch break between the two sessions.
3. At least one paper on History was presented every day. However, the papers on History were not presented in consecutive sessions.
4. At most one paper on Foreign Policy, International Finance and Law could be presented on each day.
5. The paper on Political Science was presented in the last session of the day, whenever it was presented.
6. The papers on Law were presented in the 3rd session of the day, whenever it was presented. No paper on Law was presented on Tuesday.
7. The paper on Foreign Policy was not presented on Monday or Tuesday.
8. In all, 6 papers on Economics, 8 papers on History, 6 papers on Sociology, 3 papers on Political Science, 2 papers on Law, 3 papers on Foreign Policy and 2 papers on International Finance were presented in the conference.

Following is the partially filled schedule of the papers presented in the conference:

	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Monday	History		International Finance	Economics		Political Science
Tuesday				Economics	History	
Wednesday			Foreign Policy			History
Thursday	Economics			Sociology		
Friday				History		

From point 7, the two papers on Law were presented in the 3rd sessions on Thursday and Friday.

From points 1 and 2, papers on Sociology were presented in the 2nd and 3rd sessions on Tuesday, 4th and 5th sessions on Wednesday and 4th and 5th sessions on Thursday.

From point 8, we need to account for exactly one paper on Foreign policy on Wednesday, Thursday and Friday.

From point 3, at least one paper on History was presented everyday.

From point 6, on two days out of Tuesday, Thursday and Friday, the 6th session had a paper on Political Science.

So far we have the following:

	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Monday	History	Economics	International Finance	Economics		Political Science
Tuesday		Sociology	Sociology	Economics	History	Political Science
Wednesday			Foreign Policy	Sociology	Sociology	History
Thursday	Economics	History / Foreign policy	Law	Sociology	Sociology	Foreign policy/History
Friday			Law	History		Political Science

We have yet to account for one paper on International Finance, one paper on Foreign policy and two papers on Economics and three papers on History.

As a paper on History was presented in the first session on Wednesday and the papers on History cannot be presented in consecutive sessions we get the following:

	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Monday	History	Economics	International Finance	Economics		Political Science
Tuesday		Sociology	Sociology	Economics	History	Political Science
Wednesday	History		Foreign Policy	Sociology	Sociology	History
Thursday	Economics	History/Foreign policy	Law	Sociology	Sociology	Foreign policy/History
Friday		International Finance	Law	History		Political Science

The remaining blank spaces can account for the remaining two papers on History and one paper on Economics, in any order.

In order to maximize the number of instances where the papers on Economics and History were presented consecutively, a paper on History must be presented in the 5th session on Monday and the 2nd session on Thursday. This would give us the maximum possible number of instances as 5.

Therefore, the required answer is 5.

Correct Answer:

Refer to the data below and answer the questions that follow.

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Following were the constraints on scheduling the paper presentations:

1. The first session held every day had a paper either on Economics or History.
2. Whenever the papers on Sociology were presented, they were presented in two consecutive sessions without any lunch break between the two sessions.
3. At least one paper on History was presented every day. However, the papers on History were not presented in consecutive sessions.
4. At most one paper on Foreign Policy, International Finance and Law could be presented on each day.
5. The paper on Political Science was presented in the last session of the day, whenever it was presented.
6. The papers on Law were presented in the 3rd session of the day, whenever it was presented. No paper on Law was presented on Tuesday.
7. The paper on Foreign Policy was not presented on Monday or Tuesday.
8. In all, 6 papers on Economics, 8 papers on History, 6 papers on Sociology, 3 papers on Political Science, 2 papers on Law, 3 papers on Foreign Policy and 2 papers on International Finance were presented in the conference.

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Following is the partially filled schedule of the papers presented in the conference:

	Session 1	Session 2	Session 3	Session 4	Session 5	Session 6
Monday	History		International Finance	Economics		Political Science
Tuesday				Economics	History	
Wednesday			Foreign Policy			History
Thursday	Economics			Sociology		
Friday				History		