

ORDER AND RANKING

It is an important topic of the Reasoning section, in this topic the data related to ranks of a person, which are in a particular order or well-arranged sequence are given. In some questions the total number of persons are given and the rank of the person from the left side/Right side/Top/Bottom are asked.

So, different types of Questions based on the rank /position of the persons in a row are as follows.

- 1) Total number of persons
- 2) Rank of a person from left or right side.
- 3) Number of persons in between two persons.
- 4) Minimum/Maximum number of persons
- 5) Rank of a person sitting exactly between two persons.
- 6) Rank of a person after interchanging the positions

Total Number of persons

Case-1

To find the total number of persons, when rank of a person is given from both sides of the Row.

Total number of persons= $(R1 + R2)-1$

R1 and R2 are the ranks of a person from both ends.

Example 1: - In a row of persons Position of Abhishek is 10th from left Corner and 15th from Right Corner. Find the total number of Persons in the row?

Solution: -

Total = $(R1+R2)-1$

= $(10+15)-1$

= 24

Example 2: - In a class, all students participated in a quiz competition. Albert ranks 6th from the top and 23rd from the bottom then, Find the total number of Students

Solution: -Total= (Top + Bottom)-1

$$= (6+23)-1$$

$$=29-1$$

$$=28$$

Case 2

To find the total number of persons in the row, when ranks of two persons and number of the persons who are sitting between these two persons are given.

There are two cases possible under this type which are as follows

1)Simple case

When total number of persons > (Left position of one person + Right position of another person)

Total number of persons= (Sum of positions of two different persons from both sides) + (Number of persons between two persons).

2)Overlapping Case

When (left position of one person) + (Right position of another person) > Total number of persons.

Total number of persons = (R1+R2) – (Number of persons between two persons + 2)

Example 1: -

In a row of persons. A is 12th from the left Corner and B is 17th from Right Corner. If 3 persons are there between A & B then find the total number of persons in between them.

1) 32

2) Either 30 or 25

3) 24

4) Either 32 or 24

Solution: - (4) Either 32 or 24.

Explanation: - we have taken both Simple and Overlapping cases.

Case1- Simple Case

Total number of persons= (Sum of positions of two different persons from both sides) + (Number of persons between two persons).

$$\text{Total} = 29 + 3 = 32$$

Case2- Overlapping case

Total number of persons = $(R1+R2) - (\text{Number of persons between two persons} + 2)$

$$\begin{aligned}\text{Total} &= (29) - (3+2) \\ &= 24\end{aligned}$$

Rank of a person from left or right side

To find the position of a person from the opposite side, when rank from one side and total number of persons are given.

Example 1

In a row of 40 persons. Q is 23rd from the right corner. What is the position of Q from the left corner?

- 1) 30
- 2) 28
- 3) 18
- 4) 22

Solution: -

Explanation: -(3) 18

Position of a person from opposite Side = (Total number of persons – Position of the same person from given Side) + 1.

$$= (40 - 23) + 1$$

$$= 17 + 1$$

$$= 18$$

Number of Person in between two persons

There are Two cases possible under this type which are as follows.

1) Simple Case: - When total number of persons $>$ (Left position of one person + Right position of Another Person)

Number of persons in between them = Total number of persons – (Sum of positions of two different persons from both Sides)

2) Overlapping Case: - When (Left position of one person + Right position of another Person) $>$ Total number of persons.

Number of persons between two persons = (Sum of positions of two different persons from both sides) – (Total + 2)

Example 1

In a row of 52 persons, A is 12th from the right corner and B is 24th from the left Corner then find the number of persons between A & B?

1- 16

2- 18

3- 12

4- 14

Solution: - (1) 16

Explanation: -

In this Question (Total $>$ R1 + R2) means this is a simple Case.

Number of persons in between them = Total number of persons – (Sum of positions of two different persons from both Sides)

$$= 52 - (36)$$

$$= 16$$

Example 2

In a row of 30 persons, A is 14th from the right corner and B is 20th from the left Corner then find the number of persons between A & B?

1) 5

2) 4

3) 3

4) 2

Solution: -(4) 2

Explanation: -

In this Question (Total < R1 + R2) means this is an Overlapping Case.

Number of persons between two persons = (Sum of positions of two different persons from both sides) – (Total + 2)

$$= 34 - (30 + 2)$$

$$= 2$$

Minimum/Maximum number of persons

Simple case always gives Maximum strength and an Overlapping case always gives Minimum strength.

If Minimum strength is asked then we have to consider the Overlapping case and if Maximum strength is asked in question, we have to take the Simple case.

Example 1: -

In a row P is 12th from left corner and Q is 15th from right corner then find the Minimum strength of the row if 5 persons are there in between P & Q.

1) 15

2) 20

3) 18

4) 14

Solution: - (2) 20

Explanation: -

Minimum means we have to take an Overlapping Case.

Total number of persons = $(R1+R2) - (\text{Number of persons between two persons} + 2)$

$= 27 - (5+2)$

$= 27 - 7$

$= 20$

Example 2: - In a row of Boys, Ashok is 19th from left corner and Devesh is 10th from right corner, 5 persons are there between them, then find the maximum strength of the row?

1) 34

2) 33

3) 36

4) 38

Solution: - (1) 34

Explanation: -

Maximum means we have to take a Simple Case.

Total number of persons = (Sum of positions of two different persons from both sides) + (Number of persons between two persons).

$= 29 + 5$

$= 34$

Rank of a person sitting exactly between two persons.

In this type of Questions, you need to find the rank of a person sitting exactly between the two persons

Example 1

In a row of 35 persons. Daisy is 5th from the left corner and Yashika is 9th from the right corner. Lipi is exactly in between Daisy and Yashika. Then find the rank of Lipi from the Right corner?

1) 12

2) 16

3) 18

4) 20

Solution: - (4) 20

Explanation: -

In this Question (Total > R1 + R2) means this is a simple Case.

Number of persons in between them = Total number of persons – (Sum of positions of two different persons from both Sides)

$$= 35 - 14$$

$$= 21$$

In 21 persons, lipi is sitting exactly in between means there are 10 persons between lipi and Yashika, and there are 10 persons between lipi and Daisy.

Therefore, the rank of lipi from the right corner is 20.

Rank of a person after interchanging the positions

When in a row, the position of two persons is given and their positions are interchanged and after interchanging the position of 1st person is given from the same side as before interchanging

New position of the 2nd person from the same side as before interchanging = Position of 2nd person from the same side before interchanging + (Position of the 1st person after interchanging – position of the 1st person before interchanging from the same side.

Total number of persons = Sum of the positions of a person (Common Person) from both sides – 1.

Number of persons between two persons = Difference in the positions of a person (Common person) whose position from the same side before and after interchanging is given – 1.

Example 1

In a row of Boys, Prabhas is 15th from the left and Kartik is 23rd from the right. If they interchange their positions, then Prabhas becomes 18th from the left. Then at what position will Kartik be from the right?

1)23

2)24

3)25

4)26

Solution: - (4) 26

Explanation: -

Total number of boys = (Left end + Right end) – 1

$$= (18 + 23) - 1$$

$$= 41 - 1$$

$$= 40$$

Kartik's position from right end = Total boys – left end + 1.

$$= (40 - 18) + 1$$

$$= 26$$