



Ranking

- Ranking means arranging a set of objects/ persons in ascending or descending order on the basis of comparison parameters such as height, weight, size, age, rank based on determining the sequential order of arrangement of various objects/persons and determining the position of a person/object in a row/queue.
- Sometimes Rank/Position of a person(s) is given and total number of persons is to be calculated.

Following formulae are useful to solve such type of questions

Rank of a person/object from lower or right end
 $= (\text{Total number of persons/objects in row})$
 $- (\text{Rank of that person/object from upper or left end}) + 1$

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 $= (\text{Total number of persons/objects in row})$
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Total number of persons/objects in a row or class
 $= (\text{Rank of a person/object from upper or left end}) + (\text{Rank of that person/object from lower or right end}) - 1$

Example 1 In a list, Shikha is 15th from the upper end and 17th from the lower end, then find the total number of people in the list.

- (a) 41 (b) 33
 (c) 31 (d) 32

Sol. (c) Clearly, using formula,

Total number of people in a row or class

$= (\text{Rank of a person from upper end})$

$+ (\text{Rank of that person from lower end}) - 1$

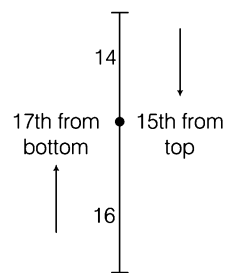
Total number of people in the list

$$\Rightarrow 15 + 17 - 1$$

$$\Rightarrow 32 - 1 = 31$$

Alternate Method

According to the question,



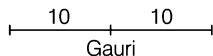
Clearly, Shikha is 15th from top, it means there are 14 people above her. Also, she is 17th from bottom it means there are 16 people below her. Therefore, total number of people

$$\begin{array}{ccccccc} 14 & + & 16 & + & 1 & = & 31 \\ \downarrow & & \downarrow & & \downarrow & & \\ \text{above} & & \text{below} & & \text{Shikha} & & \\ \text{Shikha} & & \text{Shikha} & & & & \end{array}$$

Example 2 In a row of girls, 'Gauri' is 11th from each end. How many girls are there in the row?

- (a) 20 (b) 21
(c) 22 (d) 23

Sol. (b) Gauri's rank is 11th from each end means she is 11th from the right end and also from the left end. Since, she is 11th from each end, it can be said, there are 10 girls on each side of Gauri.



$$\begin{aligned}\therefore \text{Total number of girls} &= 10 + \text{Gauri} + 10 \\ &= 10 + 1 + 10 \\ &= 21\end{aligned}$$

This question can be solved by formula also, total number of girls

$$\begin{aligned}&= (\text{Rank from left}) + (\text{Rank from right}) - 1 \\ &= 11 + 11 - 1 = 21\end{aligned}$$

Example 3 In a class of 42 students, Manoj's rank is 16th from the top. What is his rank from the bottom?

- (a) 24 (b) 25
(c) 27 (d) 26

Sol. (c) By formula,

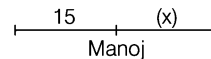
Manoj's rank from the bottom

$$\begin{aligned}&= (\text{Total number of students in class}) \\ &\quad - (\text{Manoj's rank from the top}) + 1 \\ &= 42 - 16 + 1 \\ &= 43 - 16 \\ &= 27\text{th}\end{aligned}$$

Alternate method,

Total number of student is 42 in the class.

Manoj's rank is 16th from the top means there are 15 students before him.



$$\begin{aligned}\therefore \text{Total number of students} \\ &= 42 = 15 + 1 + x = 16 + x\end{aligned}$$

(where x is the number of students after Manoj)

$$\therefore 42 = 16 + x$$

$$\therefore x = 42 - 16 = 26$$

Since, 26 students are below Manoj means his rank is 27th from the bottom.

Example 4 Five friends are standing in a row.

Amar is taller than Sameer. Prabhat is taller than Umesh but not so tall as Sameer.

Ashok is shorter than Umesh. Who among them is the shortest?

- (a) Ashok (b) Umesh (c) Sameer (d) Amar

Sol. (a) First arrange the given information in descending order of height

Amar is taller than Sameer.

$$\text{i.e. Amar} > \text{Sameer} \quad \dots(\text{i})$$

Prabhat is taller than Umesh but not so tall as Sameer.

$$\text{i.e. Sameer} > \text{Prabhat} > \text{Umesh} \quad \dots(\text{ii})$$

Ashok is shorter than Umesh.

$$\text{i.e. Umesh} > \text{Ashok} \quad \dots(\text{iii})$$

From Eqs. (i), (ii) and (iii), we get the complete order,

Amar > Sameer > Prabhat > Umesh > Ashok

Hence, Ashok is the shortest.

Practice Exercise

- In a class, Neha's rank is 21st from the top and 30th from the bottom. What is the total number of students in that class?
(a) 48 (b) 49 (c) 50 (d) 51
- In class of 45 students rank of Ayush is 15 from top, then rank of Ayush from bottom is
(a) 30 (b) 32 (c) 31 (d) 35
- In a queue, Soham is 10th from left and 28th from right. How many people are there in the queue?
(a) 38 (b) 35 (c) 37 (d) 42
- A class of girls stands in a single line. One girl is 19th in order from both the ends. How many girls are there in the class?
(a) 27 (b) 37 (c) 38 (d) 39

11. Shailendra is shorter than Keshav but taller than Rakesh, Madhav is the tallest. Aashish is a little shorter than Keshav and little taller than Shailendra. If they stand in the order of increasing heights , who will be the second?
(a) Aashish (b) Shailendra
(c) Rakesh (d) Madhav
12. Lakshmi is elder than Meenu. Leela is elder than Meenu but younger than Lakshmi. Latha is younger than both Meenu and Hari but Hari is younger than Meenu. Who is the youngest?
(a) Lakshmi (b) Meenu
(c) Leela (d) Latha
13. Each of J, K, L, M and N have different heights. M is only shorter than J.K is not as tall as N and N is shorter than L. Who is the shortest of them?
(a) J (b) N
(c) K (d) L
14. Ahmed is taller than Salim. Salim is not as tall as Ahmed but taller than Akbar. Sohan too is not as tall as Salim but taller than Akbar. Who is the tallest?
(a) Salim (b) Akbar
(c) Ahmed (d) Sohan
15. The cricket ball is heavier than the hockey ball and volleyball is lighter than the football. Hockey ball is heavier than the football and tennis ball. Which of the following is the heaviest ball?
(a) Hockey ball (b) Cricket ball
(c) Volleyball (d) Football

Answers

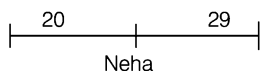
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Hints & Solutions

1. (c) By formula,

$$\begin{aligned} &\text{Total number of students in the class} \\ &= (\text{Neha's rank from the top}) \\ &\quad + (\text{Neha's rank from the bottom}) - 1 \\ &= 21 + 30 - 1 = 51 - 1 = 50 \end{aligned}$$

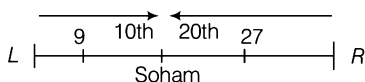
Alternate method Neha's rank is 21st from the top means there are 20 students before Neha. Her rank is 30th from the bottom means there are 29 students after her.



$$\therefore \text{Total number of students} = 20 + 1 + 29 = 50$$

2. (c) Ayush's rank from the bottom
 $= \text{Total number of students}$
 $\quad - \text{Rank of Ayush from top} + 1$
 $= 45 - 15 + 1 = 31$

3. (c) Total number of persons in the queue = (Sum of position of Soham from both ends) - 1



$$= (10 + 28) - 1 = 38 - 1 = 37$$

4. (b) The girl is at the 19th position from both ends.
Hence, there are, 18 girls on each side of her.
 $\therefore \text{Total number of girls} = 18 + 18 + 1 = 37$
5. (d) Surbhi ranks 18th in the class i.e. there are 17 students above her.
Hence, Surbhi's rank from last = $49 - 17 = 32$
6. (b) Number of letters in the row, $5 + 12 - 1 = 16$
7. (d) Now, position of Ashwini = $(15 + 6)$
 $= 21\text{st}$ from left
 \therefore Ashwini's position from right
 $= (37 + 1 - 21) = 17\text{th}$

8. (b) Ramesh's position from left
 $= 30 - 20 + 1 = 10 + 1 = 11\text{th}$
Mahesh's position from left = 14th
Clearly, there are 2 students in between Ramesh and Mahesh.

9. (c) According to the question,
Rajiv > Sunil > Abhinav
Abhinav > Jayesh
Rajiv > Kashi > Sunil

On arranging the above data, we get

Rajiv > Kashi > Sunil > Abhinav > Jayesh

Clearly, Rajiv is the heaviest.

10. (d) Vinay > Hansika, Hansika > Abhay
Aalok > Ashok, Ashok > Vinay

On arranging the above data, we get

Aalok > Ashok > Vinay > Hansika > Abhay

Clearly, Abhay is the shortest.

11. (b) According to the question,
 $K > S > R$

Madhav is the tallest.

$K > A > S$ Madhav

Here, M = Madhav K = Keshav, S = Shailendra,
R = Rakesh, A = Aashish

On arranging the above data, we get

$\therefore M > K > A > S > R$

or

R	S	A	K	M
↓	↓	↓	↓	↓
1	2	3	4	5

Hence, Shailendra will be the second.

12. (d) According to the question,
Lakshmi > Meenu

Lakshmi > Leela > Meenu

Meenu > Hari > Latha

On arranging the above data, we get

Lakshmi > Leela > Meenu > Hari > Latha

Hence, Latha is the youngest.

13. (c) According to the question,

$J > M \Rightarrow L > N > K$

$\therefore J > M > L > N > K$

So, K is the Shortest.

14. (c) According to the question,

Ahmed > Salim

Ahmed > Salim > Akbar

Now, Ahmed > Salim > Sohan > Akbar

Hence, Ahmed is the tallest.

15. (b) According to the question,

Cricket ball > Hockey ball ... (i)

Football > Volleyball ... (ii)

Hockey ball > Football, Tennis ball ... (iii)

From Eqs. (i), (ii) and (iii),

Cricket ball is the heaviest ball.