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Seating Arrangement for SBI PO Mains, IBPS PO Mains and RBI Grade B Exams.

SA Set No 140

Directions: Study the following information carefully and answer the questions given beside.

Eight persons are sitting around a square table in such a way that four of them are sitting at corners while four of them are sitting at the middle of each edge of the table. All of them are facing towards the centre of the table. Each of them weight is different in kg such that no two persons have the same weight. Weight of the persons sitting at corners of the table is in a multiple of 3kg and weight of the persons sitting at the edge of the table is in a multiple of 4kg.

R is sitting second to the left of P, whose weight is 36kg. Only one person is sitting between R and the one, whose weight is 72kg. Third lightest person and third heaviest person are not sitting adjacent to each other. V is sitting to the immediate right of Q, who is not sitting at corner of the table. The one, whose weight is 60kg, is sitting to the immediate right of the one, whose weight is 42kg. The one, who is sitting third to the left of the one, whose weight is 42kg, is 24kg lighter than Q. W is sitting to the immediate left of S, whose weight is 81kg. Two persons are sitting between W and the one, whose weight is 84kg. Difference between the weights of R and one of the immediate neighbors of R is 3kg. Weight of T is twice as the weight of U, who is sitting second to the right of T.

1. If the one, whose weight is 48kg, is related to W, the one, whose weight is 51kg, is related to U and in same way the one, whose weight is 84kg, is related to _____ of the following?

A. S   B. R   C. V   D. Q   E. None of these

2. Sum of the weights of T and the one, who is sitting to the immediate left of U, is equal to the sum of the weights of _____ and _____ respectively?

A. P and V   B. S and W   C. Q and R   D. T and U   E. None of the above

3. What is the position of third lightest person with respect to the heaviest person?

A. Immediately to the left   B. Second to the left   C. Immediately to the right
D. Second to the right   E. None of the above

4. How many persons are sitting between the one, whose weight is 51kg and second lightest person, when counted from right of second lightest person?

A. One   B. Two   C. Three   D. Four   E. None of the above

5. What is the weight of the one, who is sitting opposite to the one, whose weight is 42kg?

A. 45kg   B. 51kg   C. 39kg   D. 48kg   E. Can't be determined

Correct Answers:

1	2	3	4	5
A	C	A	C	B

Join us

Common explanation :

References:

Eight persons are sitting around a square table in such a way that four of them are sitting at corners while four of them are sitting in the middle of edge of the table.

All of them are facing towards the centre of the table.

Each of them weight is different in kg such that no two persons have the same weight.

Weight of the persons sitting at corners of the table is in a multiple of 3kg and weight of the persons sitting in the middle of edge of the table is in a multiple of 4kg.

Inferences:

From above statements,

By using the given weight condition we get the following square seating as shown. Keep all the above statements and below seating in mind while solving.

Let the positions of the persons be numbered from 1 to 8 in clockwise.
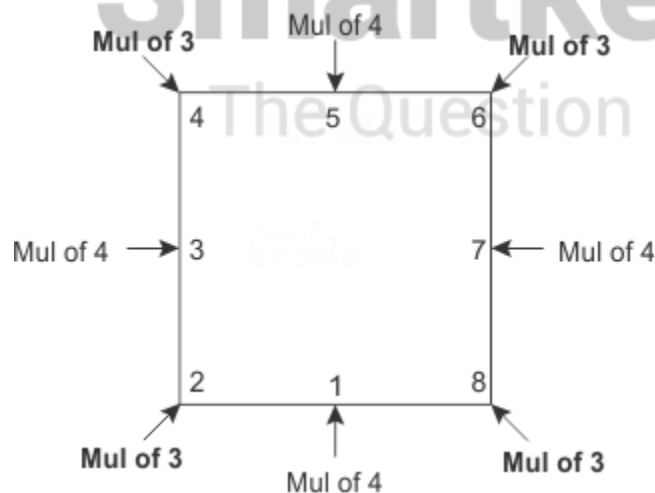
References:

R is sitting second to the left of P, whose weight is 36kg.

Only one person is sitting between R and the one, whose weight is 72kg.

Inferences:

From above statements,

Given, P's weight is 36kg i.e. both the multiple of 3 and 4. Thus P sits at corner or in the middle of edge of the table.

Similarly the one, whose weight is 72kg, can sit corner or middle of the table since 72kg is both the multiple of 3 and 4.

By combining above statements we get two possible cases as shown,

Case-1: Here P (weight is 36kg) and R will sit at 1 and 3 respectively. The one, whose weight is 72kg, sits at 5 (1st possibility)

Case-2: Here P (weight is 36kg) and R will sit at 8 and 2 respectively. The one, whose weight is 72kg, sits at 4 (2nd and final possibility)

By using above information we get the following seating,
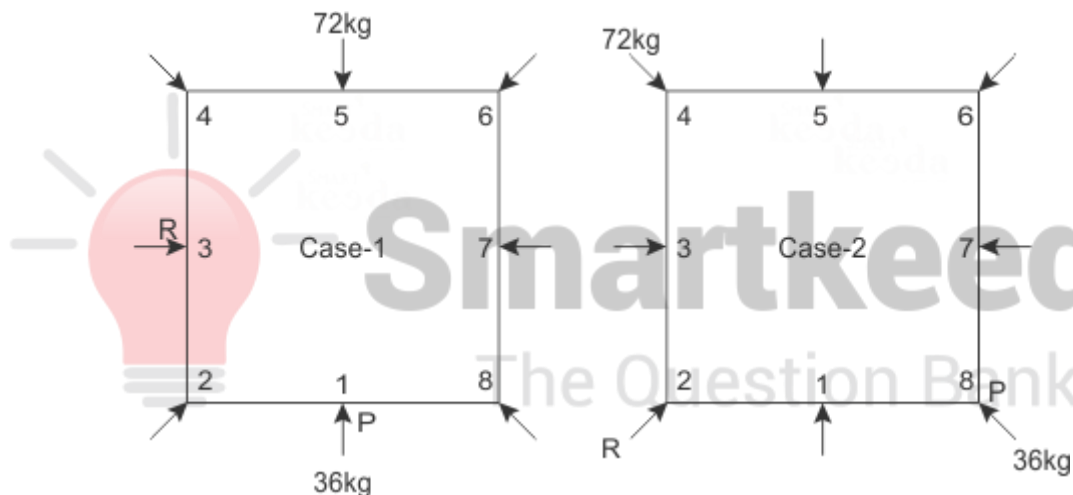
References:

W is sitting to the immediate left of S, whose weight is 81kg.

Two persons are sitting between W and the one, whose weight is 84kg.
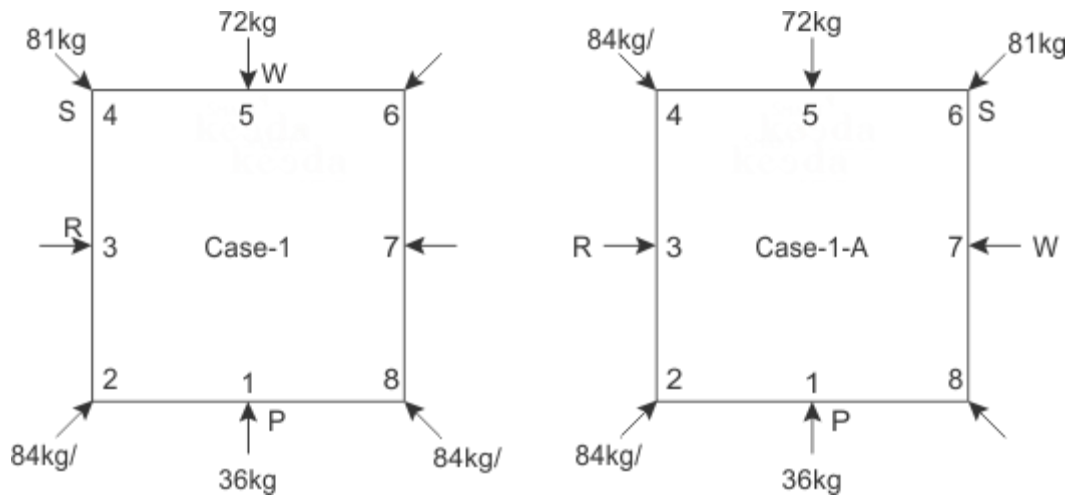
Inferences:

From above statements,

Given, S's weight is 81kg i.e. only a multiple of 3. This implies that S is sitting at corner of the table.

In case-1, we get two possibilities for S as shown,

Case-1: Here S (weight is 81kg) and W will sit at 4 and 5 respectively (1st possibility). As per ref point-2, the one, whose weight is 84kg, sits at 2 or 8.

Case-1-A: Here S (weight is 81kg) and W will sit at 6 and 7 respectively (2nd & final possibility). As per ref point-2, the one, whose weight is 84kg, sits at 2 or 4.

By using above information we get the following seating,

Case-1

81kg → S | 4
72kg → W | 5
6
R → 3 | Case-1 | 7 ←
2 | 1 (P ↑) | 8
84kg/ | 36kg | 84kg/

Case-1-A

84kg/ → 4
72kg → 5
81kg → 6 | S
R → 3 | Case-1-A | 7 ← W
2 | 1 (P ↑) | 8
84kg/ | 36kg

Case-2: Here S (weight is 81kg) and W will sit at 6 and 7 respectively (only possibility). As per ref point-2, the one, whose weight is 84kg, sits at 2 and the arrangement is shown below,

Case-2

72kg → 4
5
81kg → 6 | S
→ 3 | Case-2 | 7 ← W
R | 2
1 ↑
8 | P
84kg | 36kg
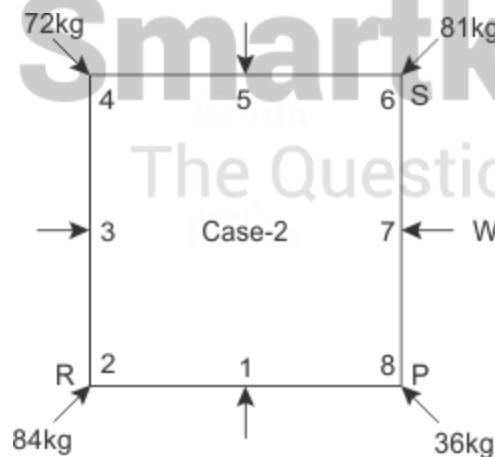
References:
V is sitting to the immediate right of Q, who is not sitting at corner of the table.

Weight of T is twice as the weight of U, who is sitting second to the right of T.

Inferences:
From above statements,

Given, Weight of T=2* weight of U. Keep this condition in mind while solving other statements for all 3 cases.

Case-1: Given, Q is not sitting at corner of the table. Therefore Q and V will sit at 7 and 6 respectively, only possibility (ref point-1). Given, U is sitting second to the right of T i.e. U and T will sit at 8 and 2 respectively, only possibility.

Case-1-A: Given, Q is not sitting at corner of the table. Therefore Q and V will sit at 5 and 4 respectively, only possibility (ref point-1). Given, U is sitting second to the right of T i.e. U and T will sit at 8 and 2 respectively, only possibility.

By using above information we get the following seating,
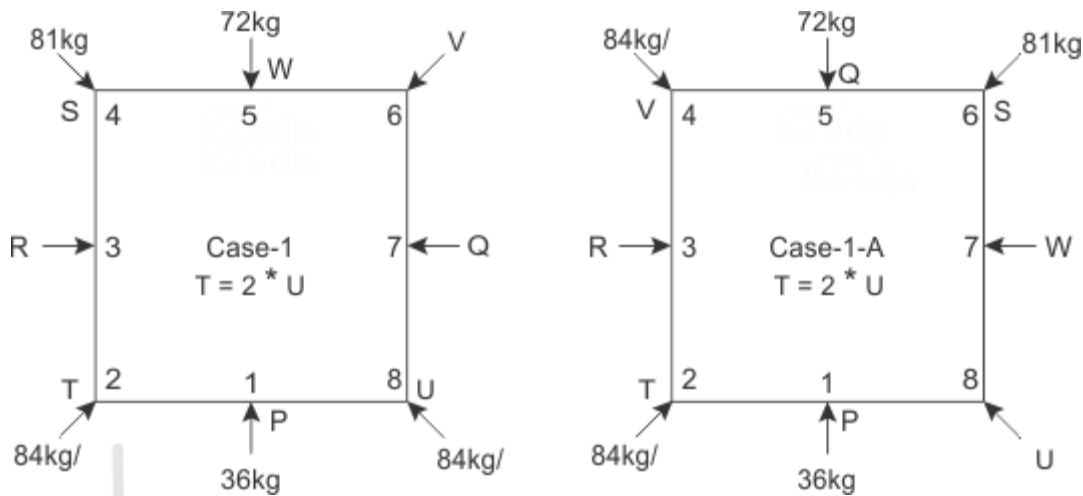
Case-2-A: Given, Q is not sitting at corner of the table. Therefore Q and V will sit at 5 and 4 respectively, only possibility (ref point-1). Given, U is sitting second to the right of T i.e. U and T will sit at 1 and 3 respectively, only possibility.

By using above information we get the following seating,
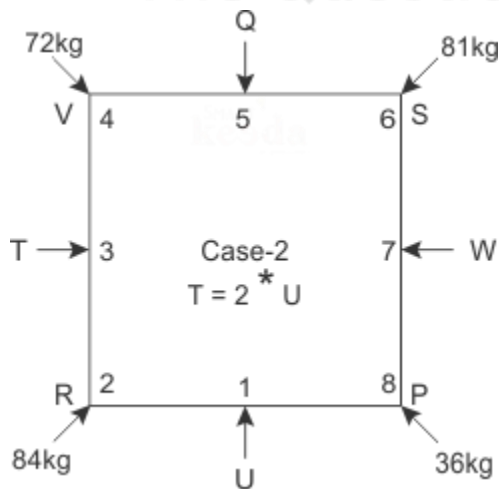
References:
The one, whose weight is 60kg, is sitting to the immediate right of the one, whose weight is 42kg.

Inferences:
From above statements,

The one, whose weight is 42kg, must sit at corner since 42kg is only a multiple of 3.

Case-1: To satisfy the above ref point, U's weight must be 42kg and Q's weight is 60kg (Q is sitting to the immediate right of U). Also we get that T's weight is 84kg, which satisfies the other given condition (i.e. weight of T is twice as the weight of U) as shown,

In case-1-A we get two possibilities for above said reference point.

Case-1-A: →If U's weight is 42kg, then W's weight is 60kg (W is sitting to the immediate right of U). Then we get T's weight is 84kg (2*42=84kg) since given weight of T is twice as the weight of U (note: Also given no two persons have same weight) as shown,
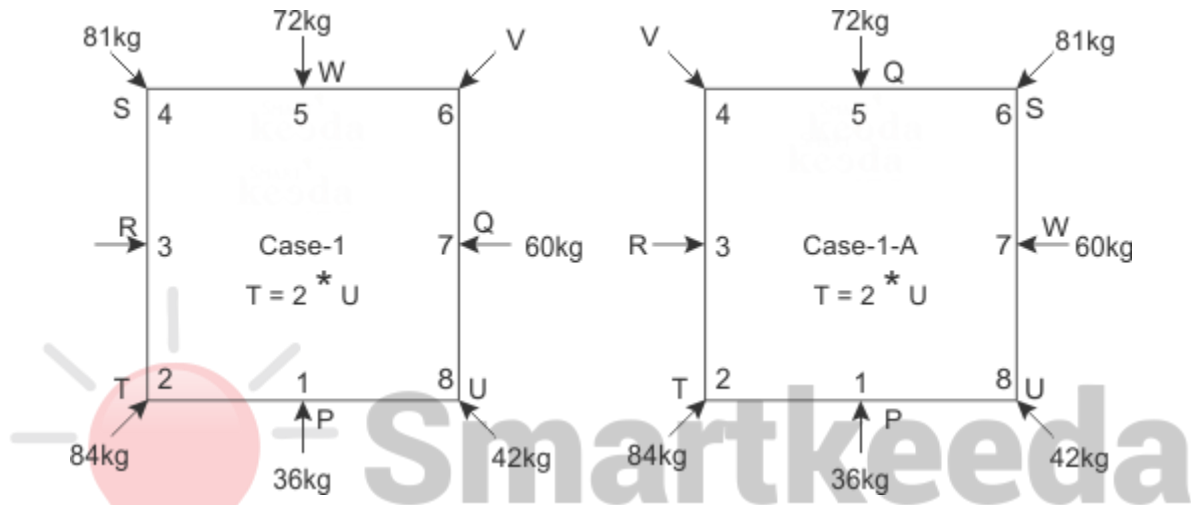
Case-1-B: →If V's weight is 42kg, then R's weight is 60kg (R is sitting to the immediate right of V). Then we get T's weight is 84kg as per given condition (i.e. Two persons are sitting between W and the one, whose weight is 84kg). Now given, weight of T is twice as the weight of U. Therefore U's weight is 42kg (T=2*U→U=T/2→84/2=42kg) which is not possible since given no two persons have same weight. **Hence case-1-B gets eliminated.**

Case-2 gets eliminated since the one, whose weight is 60kg, is sitting to the immediate right of the one, whose weight is 42kg, is not possible in this arrangement.
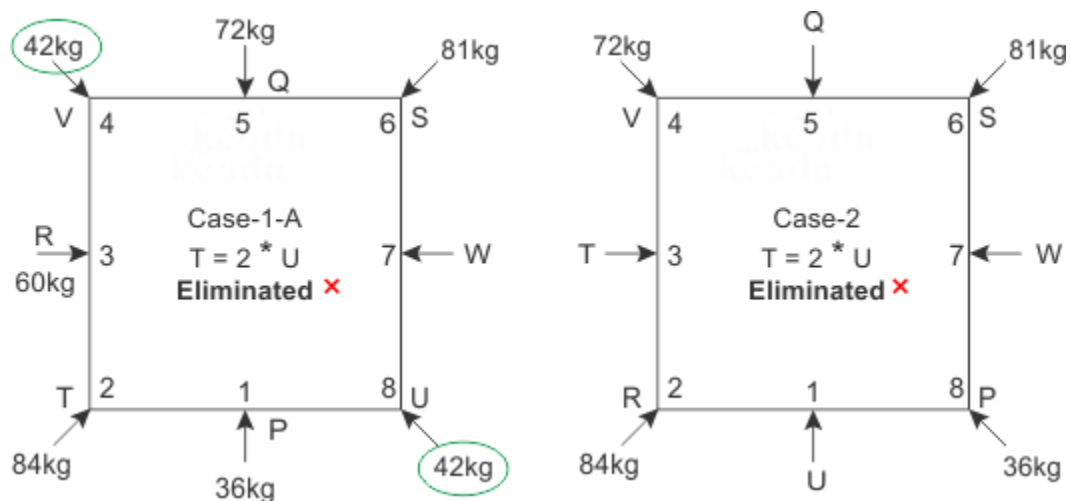
References:

The one, who is sitting third to the left of the one, whose weight is 42kg, is 24kg lighter than Q.

Difference between the weights of R and one of the immediate neighbors of R is 3kg.

Third lightest person and third heaviest person are not sitting adjacent to each other.

Inferences:

From above statements,

In both cases (Case-1 & 1-A), U's weight is 42kg & R is sitting third to the left of U. **Now as per 1st ref point, R is 24kg lighter than Q.**

Case-1: Here Q's weight is 60kg, and then R's weight is 36kg [60-24=36kg] which is not possible since P's weight is 36kg and given no two persons have same weight. **Hence case-1 gets eliminated.**
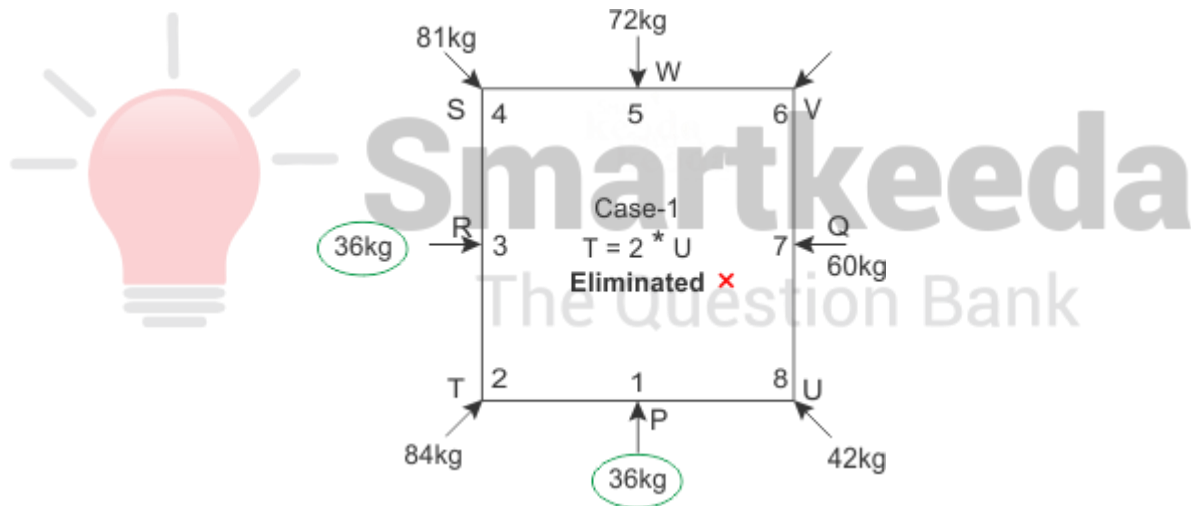
Case-1-A: Here Q's weight is 72kg, and then R's weight is 48kg [72-24=48kg]. Now R and V (V's weight is not known) are immediate neighbors as per arrangement.

As per 2nd ref point, V's weight is either 45kg [48-3=45kg] or 51kg [48+3=51kg].

If V's weight 45kg (3rd lightest person) and then Q's weight is 72kg (3rd heaviest person) are immediate neighbors, which is not possible as per 3rd ref point.
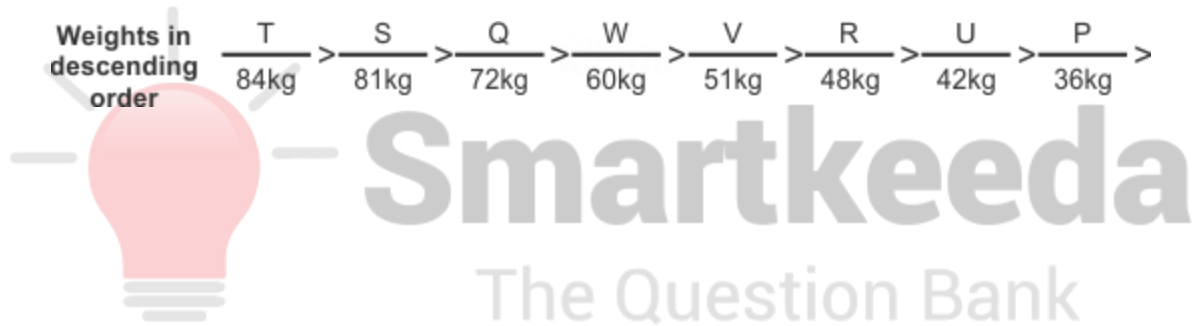
Thus we conclude that V's weight must be 51kg, only possibility i.e. 4th lightest person (V) and 3rd heaviest person (Q) are immediate neighbors.

All the given conditions get satisfied and we get the completed arrangement,
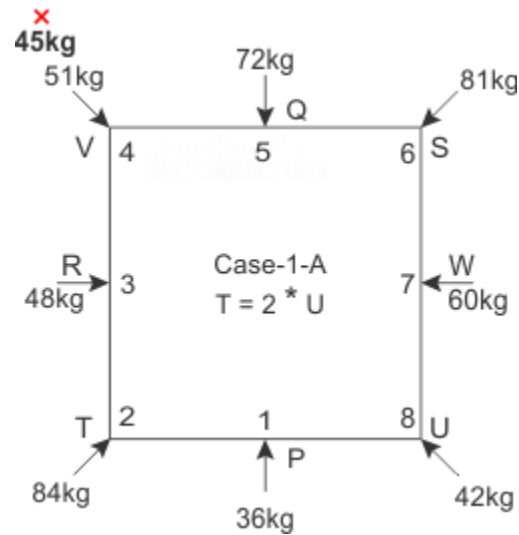
Weight of the persons in descending order is shown below,

Weights in descending order	T	S	Q	W	V	R	U	P	
	84kg	81kg	72kg	60kg	51kg	48kg	42kg	36kg	
	>	>	>	>	>	>	>	>	

Answers:

1. Following the common explanation, we get **"S".**

Relation: R's weight is 48kg and sitting opposite to W

V's weight is 51kg and sitting opposite to U

Similarly, T's weight is 84kg and sitting opposite to S

Hence, option A is correct.

2. Following the common explanation, we get **"Q and R".**

P is sitting to the immediate left of U & P's weight is 36kg. Also T's weight is 84kg

Sum = 36kg + 84kg = 120kg---- (1)

Q's weight is 72kg & R's weight is 48kg

Sum = 72kg + 48kg = 120kg-----(2)

Sum (1) and (2) are equal

Hence, option C is correct.

3. Following the common explanation, we get **"Immediately to the left".**

R (3rd lightest person i.e. 48kg) is sitting to the immediate left of T (heaviest person i.e. 84kg)

Hence, option A is correct.

4. Following the common explanation, we get **"Three".**

V's weight is 51kg and U is second lightest person (U's weight is 42kg)

Three persons are sitting between U and V, when counted from right or left of U.

Hence, option C is correct.

5.   Following the common explanation, we get **"51kg".**

U's weight is 42kg and V is sitting opposite to U

V's weight is 51kg

Hence, option B is correct.