

For the past few weeks, we have been discussing conditional statements. Let's switch back to Quant today. I have been meaning to discuss a question for a while. We can easily solve it by plugging in the right values. The only issue is in figuring out the right values quickly. The point we are going to discuss is that there has to be a plan.

Question 1: Six countries in a certain region sent a total of 75 representatives to an international congress. No two countries sent the same number of representatives. Of the six countries, if Country A sent the second greatest number of representatives, did Country A send at least 10 representatives?

Statement 1: One of the six countries sent 41 representatives to the congress.

Statement 2: Country A sent fewer than 12 representatives to the congress.

Solution:

There is no straight and simple algebra method here. You need to plug in values and understand the different possible combinations. At the same time, it is not as hard as you might expect. Work with a plan and you might get your answer quickly. You should just know how to manipulate numbers and examples.

Let's elaborate a little.

6 countries, 75 people.

No two countries sent the same number of people.

Statement 1: One of the six countries sent 41 representatives to the congress.

If one country sent 41 people, the other 5 together sent $75 - 41 = 34$ people. Since this country sent more people than all the other countries put together, we can say that this country sent the maximum number of people.

Country 'A' sent the second greatest number of representatives so it sent the most number of people from the remaining 5 countries. Does country A need to send at least 10 people?

Here some number manipulation helps us.

34 divided by 5 is approximately 7. On average, every country sent 7 people. No two countries sent the same number of people. We can split 34 around 7 in various ways e.g. 4, 6, 7, 8, 9 (try and split 34 around 7 so that the average stays approximately 7). Country A sent 9 people in this case. Country A could have sent less than 10 people.

We can easily see that country A could have sent more than 10 people (Say if the other 4 countries sent 1, 2, 3 and 4 people).

Since country A could have sent more than 10 or less than 10 people, this statement alone is not sufficient.

Statement 2: Country A sent fewer than 12 representatives to the congress.

There is no condition on the number of people sent by the country that sent the maximum number of people. It could be anything 20, 30, 40 or even 41. There are many cases possible. All we have to show is that there are at least two cases – one in which country A sends less than 10 people and another in which it sends more than 10 people. It's best to work with the 41 example since we are already familiar with it. We already know that country A could have sent 9 people (as shown while analyzing statement 1 above). Let's find out whether the number of people sent by country A can be 11 (keeping in mind the less than 12 condition) in this case.

We need to figure out whether country A can send 11 people. For 9, we split 34 as 4, 6, 7, 8, 9. Try to make minimum changes to get what you want so that you can minimize the chances of error. Since we want to increase the last number, we just reduce the first one appropriately. The split could be 2, 6, 7, 8, 11. In this case, country A could have sent 11 people.

Again, since country A could have sent more than 10 or less than 10 people, this statement alone is not sufficient.

Using both statements together, A could have sent 9 or 11 people so both statements together are not sufficient.

Answer (E)