

Evaluating inferences (updated)

One of the most challenging areas in logical reasoning is evaluating inferences. Here a passage will be followed by a few statements. A student has to identify, whether the given statements are Definitely true, Probably true, uncertain, probably false or Definitely false in the light of the passage.

Before going through the examples, let us try to recap some fundamentals of logic. An inference is a conclusion based on the known facts. An inference is definitely true when all the facts clearly support the conclusion. But an inference is probably true, when an inference is almost true with a few exceptions.

Example:

In the last thirty years, the annual milk production has more than trebled to 69 million tonnes in 1996. This extraordinary transformation of dairying in what has been described as a rags - to - riches story has led to milk being compared to the 'cinderella' of Indian agriculture. While what has been achieved is impressive, the prospects ahead are challenging. In the Indian context, one dimension of dairy development that has been equally significant as has been the phenomenal growth in milk production is its impact in upgrading the life of the rural poor.

1. There has been a three hundred percent increase in milk production in India
2. India has always been a high quantity - milk producing nation
3. India produces more cow's milk than buffalo milk
4. The rural poor are happier than before
5. India has been producing milk for the last thirty years.

Analysis:

1. There has been a three hundred percent increase in milk production in India

In the last thirty years, the annual milk production has more than trebled to 69 million tonnes in 1996. This extraordinary transformation.....

From the above lines it is clear that the production has been trebled. That is the initial production could be $69/3 = 23$ million tonnes. So percentage increase in the production is $(69 - 23)/23 \times 100 = 200\%$.

So the above inference is clearly false.

2. India has always been a high quantity - milk producing nation

In the last thirty years, the annual milk production has more than trebled to 69 million tonnes in 1996. This extraordinary transformation of dairying in what has been described as a rags - to - riches story has.....

This extraordinary transformation suggests that India's milk production has increased in great quantity and the rags - to - riches line suggests that India is not producing milk in great quantities in the earlier days and our discussion is limited to the 30 year period in the above passage, and we don't have enough information about the earlier periods.

So the qualifier "always" in the question makes this a false statement. But may be 23 million tonnes is a great quantity too. So we should say this statement is "probably false".

3. India produces more cow's milk than buffalo milk

Simple one. No information was provided in the passage about types of milk. Uncertain

4. The rural poor are happier than before

This extraordinary transformation of dairying in what has been described as a rags - to - riches story While what has been achieved is impressive, the prospects ahead are challenging..... its impact in upgrading the life of the rural poor.

The rags to riches suggests that it created good income and we could say that there is a change in the life style of people. But the last line suggests the underlying challenge. So in the light of above two statements we could safely conclude that the statement is probably true.

5. India has been producing milk for the last thirty years.

In the last thirty years, the annual milk production has more than trebled to 69 million tonnes in 1996.

Definitely true.

Example:

Independent testing of certified products is an essential feature of the BIS certification Marks scheme. For this purpose, BIS has a network of eight laboratories in the country, Which are in a position to issue around 42000 test reports in a year. These laboratories are being constantly expanded and their testing facilities augmented and modernized. BIS has also recognized around 280 laboratories belonging to public and private sectors for testing products under its certification scheme.

1. The BIS Scheme does not test uncertified products.
2. Every laboratory of the BIS can issue more than 4000 test reports in a year
3. The BIS has no dynamism in its workings
4. The BIS is an autonomous body
5. Certification is a process that needs to be constantly modernized.

Analysis:

1. The BIS Scheme does not test uncertified products.

Independent testing of certified products is an essential feature of the BIS certification Marks scheme.

The wording in the red letters suggests that BIS testing of certified products is its essential feature. But it does not mean that it may not test uncertified products. So the statement is uncertain

2. Every laboratory of the BIS can issue more than 4000 test reports in a year

BIS has a network of eight laboratories in the country, Which are in a position to issue around 42000 test reports in a year.

42000 reports by 8 laboratories is 5250 reports on an average. But we could not say each laboratory may produce

more than 5250 reports or not. Some may be small and produce less than 5250, and some laboratories may be big to produce 10,000. Now the problem is shall we classify this statement as uncertain, or probably false, or probably true (Surely not definitely true or false).

Now look at the question statement.

Every laboratory of the BIS can issue more than 4000 test reports in a year

Here author is saying every laboratory "can issue". That means he is talking about possibility. Had he used only "issue" then the statement is uncertain as we need more information like whether all laboratories are in same magnitude or not. So here he is talking about possibility and there are more chances that this probability is true. But we are not certain that this is 100% true. So this statement is probably true.

3. The BIS has no dynamism in its workings

These laboratories are being constantly expanded and their testing facilities augmented and modernized.

This line suggests that the above statement is definitely false as the expansion and modernization suggests dynamism.

4. The BIS is an autonomous body

Independent testing of certified products is an essential feature of the BIS certification Marks scheme.

The independent testing suggests that it has autonomy to test products but we cannot safely conclude that it is an autonomous body or not. Probably true.

5. Certification is a process that needs to be constantly modernized.

These laboratories are being constantly expanded and their testing facilities augmented and modernized

If there is no necessity why BIS had constantly expanded and modernized its facilities? Definitely True

Example:

The economic reforms programme is going to affect not only the private industrial sector but also the public sector. Many people associate the economic restructuring programme with privatisation. This is one area of economic reforms where India has chosen to tread cautiously. The process of privatisation has been set in motion by the disinvestment campaign in the public sector. Public sector industries in India have been incurring losses over long periods while their counterparts in the private sector are making profits. The economic reforms programme in India will be incomplete without a restructuring of the public sector undertakings.

1. The greater emphasis of reforms is on the private sector probably true
2. India's approach towards reforms is cautious true
3. The reforms have not intended to restructure the public sector units false
4. Economic restructuring programme means privatisation false
5. Disinvestment of public sector is a part of economic restructuring true

Analysis:

1. The greater emphasis of reforms is on the private sector

The economic reforms programme is going to affect not only the private industrial sector but also the public sector.

It is clear from the above that economic reforms mainly intended for private sector, besides having some impact on the public sector. Not only --- but also is a co-ordinating conjunction which gives equal emphasis to both the clauses. So we cannot say that the emphasis is on private sector. It creates some ambiguity. So the above said statement is probably true

2. India's approach towards reforms is cautious true

This is one area of economic reforms where India has chosen to tread cautiously. Definitely true

3. The reforms have not intended to restructure the public sector units

The economic reforms programme is going to affect not only the private industrial sector but also the public sector.

.....The economic reforms programme in India will be incomplete without a restructuring of the public sector undertakings. Author clearly mentioned in the first line that the reforms are having some impact on the public sector too. and also in the last line he asserted that reforms program is incomplete without restructuring of public sector units. So the above said statement is definitely false

4. Economic restructuring programme means privatization false

Many people associate the economic restructuring programme with privatisation. This is one area of economic reforms where India has chosen to tread cautiously.

Even though many people think that economic restructuring and privatization are synonymous, but the author is correcting them in the succeeding line saying that this is only one area of economic reforms. Definitely false

5. Disinvestment of public sector is a part of economic restructuring

The process of privatization has been set in motion by the disinvestment campaign in the public sector. Definitely true