

Name: Rasman Mubtasim Swargo

Student ID: 1705051

1705081 will verify my answer.

**37.** Suppose there are signs on the doors to two rooms. The sign on the first door reads “In this room there is a lady, and in the other one there is a tiger”; and the sign on the second door reads “In one of these rooms, there is a lady, and in one of them there is a tiger.” Suppose that you know that one of these signs is true and the other is false. Behind which door is the lady?

**Answer:** The lady is behind the second door.

**Explanation:** There are two cases for the door signs. True-false and false-true.

- a) True-False: If the first statement is true, it implies that the two rooms have a tiger and a lady in them, so the second door sign cannot be false. So, this case cannot be true,
- b) False-True: If the second sign is true we know that in one of the room there is the lady. As we know the first door sign is false so the lady is in the second room. This logic satisfies all the conditions.