CSE 103: DISCRETE MATHEMATICS:

CHAPTER 1.2:

Inhabitants of an island on which there are three kinds of people: knights who always tell the truth, knaves who always lie, and spies (called normals by Smullyan [Sm78]) who can either lie or tell the truth. You encounter three people, A, B, and C. You know one of these people is a knight, one is a knave, and one is a spy. Each of the three people knows the type of person each of other two is. For each of these situations, if possible, determine whether there is a unique solution and determine who the knave, knight, and spy are. When there is no unique solution, list all possible solutions or state that there are no solutions.

QUESTION: 26

A says, "I am the knave". A says, "I am the knave".

C says," I am the knave".

Solution:

We can't conclude anything from here. Because a knave will never say that he is a knave as he always lie. Similarly, a knight will never say that he is a knave, as he speaks truth. And the spy may speak truth or tells lies. So we can't say anything precisely about them who is knight ,who is knave and who is a spy.