

Chapter:1

Section:2

Problem:27

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Question :

this problem relate to 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.

*A* says “I am the knight,” *B* says “*A* is telling the truth,” and *C* says “I am the spy.

Answer: Suppose , *A* is a knight. Then his assertion is true that he is a knight. Then *B* must not be knight. Because if he is a knight, then his assertion would be true and there

will be two knight which cannot be. So he must be spy or a knave. Suppose as a spy, he is telling the truth. Then his assertion is true and A is knight. Then C must be knave

And his assertion that he is a spy is false.

So, the solution of the problem is: A is a knight, B is a spy and C is a knave.