

CSE 103

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Chapter: 1

Section: 2

Exercise: 30

The exercise 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.

30. A says "I am not the spy," B says "I am not the spy," and C says "A is the spy."

Corrected Exercise ...

22 is replaced by 30

Solution:

Given : One knight , One knave and One spy

A says "I am not the spy"

B says "I am not the spy"
and
C says "A is the spy."

A cannot be the knave , because then A is lying and thus A should be spy .
B cannot be the knave, because then B is lying and B should be the spy
Thus C is then the only person than can be the kanve

C is the knave , thus C is lying and thus A cannot be the spy .The only
remaining position for A is then the knight , while B then has to be the spy

So , here

A is the knight
B is the spy
C is the knave.