CSE-103

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Chapter: 1

Section: 2

Exercise No: 29

Exercises 24–31 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.

29. *A* says "I am the knight," *B* says "I am the knight," and
C says "I am the knight."

Answer:

29. We can tell nothing here; each of the six permutations is possible. The knight will always say that he is the knight; the knave will always lie, so he might also say that he is the knight; and the spy may lie and say that he is the knight.