

CSE 103: Discrete Mathematics

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Chapter 1, Section 2

Problem 22:

Exercises 19–23 relate to inhabitants of the island of knights and knaves created by Smullyan, where knights always tell the truth and knaves always lie. You encounter two people, A and B. Determine, if possible, what A and B are if they address you in the ways described. If you cannot determine what these two people are, can you draw any conclusions?

Both A and B say “I am a knight.”

Solution:

We cannot surely say who is the knight or who is the knave in this case. Because if A and B are both knights, they will both be telling the truth and saying that they are knights, which they did.

Also if A and B are both knaves, they will both be lying and saying that they are knights. (As knaves are always supposed to lie)

So basically both of the options are possibilities here. Meaning both of them could be either a knight or a knave.