LOGIC
QUIZ #9

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Once again, we return to Islands of Knights and Knaves, but start with one with some differences.

Q1. [10] One of them is a bit strange, as it has male and female knights and knaves. The male knights and knaves act as before, but female knights lie and female knaves tell the truth. If all the inhabitants of this island said the same thing: "All inhabitants of this island are knights," what can you deduce?

Soln1. *If the statement is true, then female knights would have made true statements! If the statement is false, then everyone lied, and the island has male knaves and female knights!*

Q2. [10] Let's go back to our standard Island of Knights and Knaves. In this island, those called *knights* always tell the truth and *knaves* always lie. Furthermore, each inhabitant is either a knight or a knave. In one of our visits, we came across an inhabitant who said: "This is not the first time I have said what I am saying now." Is the inhabitant a knight or a knave?

Soln2. *If the statement is true, then we should be able to prove it by induction: It is true on the first day, and if it is true on a particular day, it is true on the successive day. But since it cannot be true on the first day, it is false. The inhabitant is a knave.*