

The Liar and the Truth Teller

Names of students in your group:

Submission: Each student must submit their answer separately in PDF form to Moodle by the end of the class. No email submissions are allowed. Google how to convert a Google doc to a PDF if you haven't done it before.

The Problem

There are two guards and two doors. One door leads to freedom, and the other to death. One guard always lies, the other always tells the truth. They know which they are. They know where the two doors go. You do not know which guard is which or which door is which. You may ask one yes or no question.

Question 1

What do you ask to determine which door leads to freedom?

Question 2

If you do not know how many guards tell the truth and how many lie (they could both be liars!), what do you ask to determine which door leads to freedom?

Question 3

Now assume that there is only one guard, and you do not know whether he tells the truth or lies. What do you ask to determine which door leads to freedom?