

Problem 25

Three people are in a room. One person always tells the truth, one always lies, and one sometimes lies and sometimes tells the truth. The 1st person says, "I am the person who always tells the truth"; the 2nd says, "I am the person who always lies"; and the 3rd says, "I am the person who sometimes lies and sometimes tells the truth". Who is whom?

Answer

$1^{\text{st}} \rightarrow \text{Truth}; 2^{\text{nd}} \rightarrow \text{Lies and Truth}; 3^{\text{rd}} \rightarrow \text{Lies}$
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Explanation

The person who tells the truth can *only* claim he is the person who tells the truth. Hence, the 1st person is the one who tells the truth.

The person who claims to be the liar can *only* be the person who sometimes lies and sometimes tells the truth. Thus, the 2nd person is the one who sometimes lies and sometimes tells the truth.

That leaves the 3rd person as the liar.