The Case of John

This puzzle involves a judicial investigation of identical twins. It was known at least one of them never told the truth, but it was not known which. One of the twins was named John, and he had committed a crime. (John was not necessarily the one who always lied.) The purpose of the investigation was to find out which one was John.

"Are you John?" the judge asked the first twin.

"Yes, I am," was the reply.

"Are you John?" the judge asked the second twin.

The second twin then answered either yes or no, and the judge then knew which one was John.

Was John the first twin or the second?

You may not see the relationship between this problem and the FerryBoat problem but the problems are closely related.

For each twin, there are four possibilies:

1. The twin's reply is yes and the twin is truthful
2. The twin's reply is yes and the twin is lying
3. The twin's reply is no and the twin is truthful
4. The twin's reply is no and the twin is lying.

We can represent the possiblities as ordered pairs:

[1.1] means the first twin's reply is yes and the first twin is truth; and the second twin's replay is yes and the second twin is truthful.

[2,3] means the first twin's reply is yes and the first twin is lying; and the second twin's reply is yes and second twin is truthful

[3,4] means the first twin's reply is no and the first twin is truthful; and the second twin's reply is no and the second twin is lying

[4,1] means the first twin's reply is no and the first twin is lying; and the second twin's reply is no and the yes and the second twin is truthful.

[1,1], [1,2], [1,3], [1,4]
[2,1], [2,2], [2,3], [2,4]
[3,1], [3,2], [3,3], [3,4]
[4,1], [4,2], [4,3], [4,4]

The fact that at least one twin lies eliminates 4 pairs.

[1,2],[1,4]
[2,1], [2,2], [2,3],[2,4]
[3,2],[3,4]
[4,1], [4,2],[4,3],[4,4]

6 of the pairs contradict one of the problem's statements

If you eliminate these 6 pairs then 3 of the remaining pairs contradict another of the problem's statements

If you eliminate these 3 pairs then 3 pairs remain and 2 of these contract another of the problem's statements.

Was the first twin John? What the second twin John