1 While traveling on the island, you want to go to the capital, but aren't sure if you're going the right way. You meet someone. You ask them 2 questions:

A: Is this the correct way to the capital?

B: Did you just answer YES?

They answer NO and YES. Is this the correct way to the capital?

What is the answers are NO and NO? Can you determine if they are a knight or knave?

2 While traveling on the island, you want to go to the capital, but aren't sure if you're going the right way. You meet someone. You ask them 2 questions:

A: Is 2 larger than 22?

B: Is this the correct way to the capital?

What does YES and YES mean?

What does YES and NO mean?

What does NO and YES mean?

What does NO and NO mean?

3 While walking down the road, you meet 20 people(1 at a time). For each person, you can only ask them 1 question(20 questions total). Can you find out whether this is the right way to the capital?

What if you can ask them 2 questions? What questions would you ask?

4 Adam steals a secret message BCDEFGHIJKLM from Lilith to Eve. From the conversation he overheard earlier, he knows that the English message is either TODAYZZZZZZZ or TOMORROWZZZZ.

Adam knows that the two girls had agreed to encode each letter of the message differently. They agreed on a certain position of the wheel for the 1st letter, and another position of the wheel for the 2nd letter, and so on. **Can Adam break the code?**

What if they only change the position of the message every two letters?

5 We're back on Knight/Knave island, however instead of having people say their answers, they will write them down on a piece of paper. These answers will be encrypted, and you want to know how many of them could translate back to YES or NO. Assume the same wheel position is used for all letters.

You get 5 different messages: NOT, OUI, NET, ON, DE. Without the key, can you decide which of them may say YES or NO, and which may not?

Hint: Look at # of letters and how far apart letters are.