MATH 6: HOMEWORK 3 LOGIC I. KNIGHTS AND KNAVES

On the island there are two kinds of people: Knights, who always tell the truth, and Knaves, who always lie. Unfortunately, there is no easy way of knowing whether a person you meet is a knight or a knave...

Copyright notice: most of these problems come from books of Raymond Smullyan. If you liked them, get his books in the library and you will find there many more puzzles of the same sort. You can also find a number of such puzzles online at http://philosophy.hku.hk/think/logic/puzzles.php

<u>Please don't forget to show me in your submission exactly how you were solving the problems, your way of thinking. Just an answer is not enough!</u>	
1.	You meet two inhabitants: Bob and Bill. Bob says, 'Bill is a knave.' Bill says, 'Bob and I are different.' Can you determine who is a knight and who is a knave?
2	You meet two inhabitants: Zed and Alice. Zed tells you, 'Alice could say that I am a knight.'
۷.	Alice claims, 'It's not the case that Zed is a knave.' Can you determine who is a knight and who is a knave?
3.	Now imagine that the island also have normals, who can either say truth or lie. Amy, Bob, and Celine are from the island of knights, knaves, and normals. One of them is a knight, one is a knave, and one is normal. Amy says that Celine is a knave. Bob says that Amy is a knight. Celine says that she is a normal. Can you figure out who is who?

4. You are in a maze on the island of knights and knaves. There are two doors: you know that one leads to freedom and one leads to certain doom. There are two guards nearby, and you happen to know that one is a knight and one is a knave, but you don't know who is who. They allow you to ask one of them a single question before you choose a door — what do you ask?