

Math 235 Fall 2000
Weekend Puzzles #1

The following puzzles are for your enjoyment only. I will never ask questions like these on quizzes or tests. You may do them or not do them as you see fit. Answers to these puzzles will be given on the next Weekend Puzzle sheet.

These problems are taken from Smullyan's book entitled "*What is the Name of this Book?*" Each scenerio takes place on the island of Wobble, all of whose inhabitants are either knights (who always tell the truth) or knaves (who always lie).

1. Allison and Bo, two Wobblians, are sitting under a tree. Allison says to you: "At least one of us is a knave." What are Allison and Bo?

2. One day you meet two of the Wobblians in the garden. You ask one of them whether the other one is a knight, and you get a (yes-or-no) answer. Then you ask the second one whether the first one is a knight, and you get a (yes-or-no) answer. Are the two answers necessarily the same?

3. Once I visited the island of Wobble and came across two of the inhabitants. I asked one of them, "Is either of you a knight?" He responded, and I knew the answer to my question. Is the person to whom I addressed my question a knight or a knave? And what is the other person? There is enough information given to determine the answers.

4. So many people have gone to the island of Wobble to play logic puzzles that now there are *three* types of inhabitants on the island: knights (who always tell the truth), knaves (who always lie), and normals (who sometimes tell the truth and sometimes lie). Suppose you meet three of these people: Arthur, Betsy, and Carl. You know that one of them is a knight, one of them is a knave, and one of them is a "normal" (not necessarily in that order). They make the following statements:

Arthur: I am normal.

Betsy: That is true.

Carl: I am not normal.

What are Arthur, Betsy, and Carl?