

Mathematics 1550H – Introduction to probability

TRENT UNIVERSITY, Summer 2013

Assignment #1

Long, long ago, and far, far away . . .

Due on Wednesday, 3 July, 2013.

The planet Zardoz is populated exclusively by jedi, who always tell the truth, and sith, who always lie. Walking about the planet on a visit, you come across two inhabitants. The one on the left says, “Both of us are jedi,” to which the one on the right adds, “That’s not true!”

1. What is each inhabitant? Why? [2]

Continuing your walk, you seek the Temple of Indeterminacy. You come to a fork in the road with a tourist information booth staffed by two inhabitants. A sign on the booth tells you that one of the staff is a jedi and the other is a sith, but that you get to ask just one – either one! – of them a single question.

2. What should you ask one of the staffers to find out which fork of the road leads to the Hamlet of Indeterminacy? [2]

Suppose that the sign does not tell you that the staffers are a jedi and a sith (so you might have two jedi or two sith instead), but just that you can ask only a single question of just one of them.

3. Can you still find out which way to go by asking a single question? If so, what should you ask? If not, could you find out if you were allowed to ask two questions? (In which case, what are they?) [3]

4. Devise an original problem along these lines. [3]