

Mathematics 1110H – Calculus I: Limits, Derivatives, and Integrals

TRENT UNIVERSITY, Summer 2023 (S61)

Assignment #6

And now for something completely different![†]

Due just before midnight on Wednesday, 14 June.*

A very special island is inhabited only by knights and knaves. Knights always tell the truth, and knaves always lie.

You meet five inhabitants: Bozo, Alice, Zippy, Marge and Zoey. Bozo says that Zippy and Zoey are knaves. Alice says, “Zoey is a knave and I am a knight.” Zippy says that at least one of the following is true: that Marge is a knight or that Alice is a knight. Marge says that it’s false that Bozo is a knave. Zoey says that at least one of the following is true: that Marge is a knight or that Bozo is a knave.

Can you determine who is a knight and who is a knave?

1. Determine, as best you can, which of these five inhabitants is a knight and which is a knave. [10]

NOTE: This is Puzzle #151 from the list set up by the Department of Philosophy at Hong Kong University, which you can find at:

<https://philosophy.hku.hk/think/logic/knights.php>

[†] With apologies to Monty Python for using one of their signature phrases.

* You should submit your solutions via Blackboard’s Assignments module, preferably as a single pdf. If this fails, you may submit your work to the instructor on paper or by email to sbilaniuk@trentu.ca.