

Mathematics 2200H – Mathematical Reasoning

TRENT UNIVERSITY, Fall 2025

Assignment #2

Knights and Knaves

*Due on Friday, 19 September.**

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

You meet nine inhabitants: Bozo, Zoey, Marge, Bart, Zed, Joe, Dave, Sue and Mel. Bozo claims that it's false that Dave is a knave. Zoey tells you that Marge is a knave and Sue is a knight. Marge claims that Bozo is a knave. Bart claims, "Zed could claim that I am a knight." Zed says that only a knave would say that Dave is a knave. Joe says, "It's not the case that Bart is a knave." Dave claims that Mel and Joe are both knights or both knaves. Sue tells you that Zed is a knave. Mel claims, "Neither Bozo nor Zoey are knaves."

1. Determine, as best you can, who is a knight and who is a knave. Please give your complete reasoning. [10]

Problems

Problems worthy
of attack
prove their worth
by hitting back.

A grook by Piet Hein.

* Please submit your solutions, preferably as a single pdf, via Blackboard's Assignments module. If that fails, please submit them to the instructor on paper or via email to sbilaniuk@trentu.ca as soon as you can,