Somewhat Random Numbers

Prepared by Mark on February 10, 2025

Problem 1:
Alice generates 100 random numbers uniformly from $[0, 1]$.
Bob generates 101 random numbers from $[0, 1]$, but deletes the lowest result.

Say we have both of the resulting arrays, but do not know who generated each one.
We would like to guess which of the two was generated by Bob.

- Say we assign the array with the smallest mean to Alice.
  What is our probability of guessing correctly?
- How often do we guess correctly if we instead assign
  the array with the smaller *minimum* to Alice?