

# STA112 ASSIGNMENT 1

Dr. Nifemi I. Badmus

February 13, 2025

1. In how many ways of the distinct permutations of the letters in **ACKNOWLEDGEMENT** do the four vowels not come together?
2. How many numbers are there between 99 and 1000, having at least one of the digits 7?
3. In a small village, there are 87 houses, of which 52 houses have at most 2 flats. In a rural development programme, 20 houses are to be chosen for upgrading, of which at least 18 houses must have at most 2 flats. In how many ways can the choice be made?
4. Determine the number of 5-card combinations out of a deck of 52 cards, if there is exactly one Ace in each combination.
5. A group consists of 7 girls and 4 boys. In how many ways can a team of 5 members be selected if the team has:
  - (a) no boys
  - (b) at least one girl and one boy
  - (c) at least 3 boys

**Submission:** Due Thursday, February 20, 2025, after lecture.