Problem #6   What is the largest number of zeros that could appear at the end of $1^n + 2^n + 3^n + 4^n$, where n can be any positive integer?

Problem #7   A tennis academy has 2023 members. For every group of 1011 people, there is a person outside of the group who played a match against everyone in it. Show there is someone who has played against all 2022 other members.