

1. If n people are present in a room, what is the probability that no two of them celebrate their birthday on the same day of the year? How large need to be n so that this probability is less than $1/2$?
2. Delegates from 10 countries, including France, England, Spain, and the United States, are to be seated in a row. How many different seating arrangements are possible if the French and Spanish delegates are to be seated next to each other, and the English and U.S delegates are not to be next to each other?