

Binomial Coefficient

Question 1)

A certain population consists of $N=1000$ people. 500 of them support party A; 300 of them support party B; and 200 support party C. A group of 4 people is chosen at random from the population. What is the probability that all persons in the group support

- a) party A
- b) party B
- c) party C

Question 2)

A class of $4n$ children contains $2n$ boys and $2n$ girl. A group of $2n$ children is chosen at random. What is the probability that the group contains an equal number of boys and girls?

For:

- a) $n=10$
- b) $n=50$

Question 3)

In a lottery game, the player picks 4 numbers from a sequence of 1 through 20. At lottery drawing, 4 balls are drawn at random from a box containing 20 balls numbered 1 through 20. What is the probability that the player will win the lottery (i.e. getting 4 matches in any order)?