DTP-Math-Circle: Session 4—Probability, Inequalities and Quantum Mechanics

Oct 14 2022

3 Boole's inequality

Consider a group of children made up of your schoolmates. Let the probability of being good in sports be$P(S)$ where S denotes the set of children who are good in sports, and let the probability of being good in music be $P(M)$, where M denotes the set of children who are good at music. Then what does $P(S \cup M)$ stand for? Can you say something about its value relative to the sum of probabilities $P(S) + P(M)$?

Now if we have the probabilities $P(A_i)$ for $i = 1, 2, 3...$, can you say something about the value of $P(A_1 \cup A_2 ... \cup A_n)$ relative to the sum $P(A_1) + P(A_2) + ...P(A_n)$?