A CASE STUDY ON THE MODEL OF DIVIDING SAMPLE SPACE

----From Gardner's Problem to Bertrand's Paradox

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Abstract: In this article, we made an in-depth study on a Gardner's Problem about coin partitioning by carrying out a series of generalizations. We then offered the solutions that included a variety of extreme probabilities and the corresponding ways of coin partitioning. The idea behind these generalizations could be perceived as Bayesian: that the probability of the sample points was varied. We could obtain this end through the division of sample space based on certain classical probability models. This approach is therefore intuitive and feasible. We applied these generalized results both to reinterpret Bertrand's paradox and to solve a real world problem.

Key words Sample space Classical probability models Bertrand's paradox