

One horse racing story in ancient China, two types of card games, three theorems in matrix theory, and a number of consequences

Chi-Kwong Li, College of William and Mary, Williamsburg VA – 23185

Abstract

Motivated by a horse racing story in ancient China, we consider two types of card games, whose outcomes are related to the inertia of Hermitian matrices with prescribed eigenvalues. The study has interesting connections and implications to other areas such as probability, statistics, and algebraic combinatorics.

This is joint work with Yiu-Tung Poon of the Iowa State University.

Keywords: card game, matrix, eigenvalues.