

1154-60-1173 **Skip Garibaldi***, 4320 Westerra Ct, San Diego, CA 92121. *Uncovering lottery shenanigans.*

Mathematicians since Euler have been interested in studying lotteries. Analyzing the games is made easier because the probabilities involved are clearly defined, yet the very large number of participants and variances in outcomes lead to subtle questions. Focusing on specific games provides an additional source of interest, because each game has individual quirks. When looking at the outcomes of real games, it sometimes appears that people are up to shenanigans. Digging deeper, it may turn out that the apparent anomalies are not nefarious at all, just an illusion resulting from the oceans of tickets that are sold. Sometimes the scheme is real, but, surprisingly, entirely legal. And sometimes it is mostly illegal or an indicator of a larger criminal enterprise. This talk focuses on the latter kind of shenanigans. (Received September 13, 2019)