962-Q1-136   **Robert E Bradley*** (`bradley@adelphi.edu`), Dept. of Mathematics and Computer Science, Adelphi University, 1 South Ave., Garden City, NY 11530. *Euler and the Genoese Lottery.*

Most States in the USA sponsor lotteries of the following type: k numbers are randomly chosen from among the first n positive integers, and players are paid off at various rates if they have correctly guessed some of the k winning numbers. In New York's Lotto, for example, $n = 51$ and $k = 6$. Called the Genoese Lottery in the 18th century, Leonard Euler devoted a substantial portion of his writings in probability theory to the analysis of this game of chance. We survey these writings, which begin with a royal charge from Frederick the Great of Prussia, and summarize Euler's findings. (Received August 08, 2000)