1077-62-53   **Raymond N. Greenwell*** (`matrng@hofstra.edu`), Department of Mathematics, 103 Hofstra University, Hempstead, NY 11549, and **Anna E. Bargagliotti** (`abargag@yahoo.com`), Department of Mathematics, Loyola Marymount University, Los Angeles, CA 90045.
Combinatorics and statistical issues related to the Kruskal-Wallis statistic.

We examine combinatoric and statistical questions related to the Kruskal-Wallis statistic. We compare the number of possible combinations of ranks with the number of different column rank sums. There is a closed formula for the former, but not for the latter. We give inequalities that the column rank sums must satisfy, give a closed formula for the special case with 2 columns, and relate the general case to the number of score sequences in tournaments. We indicate that the rejection probability for the null hypothesis approaches 1 when random collections of column rank sums are taken. We give a continuity correction for the Kruskal-Wallis statistic that is useful in general and makes all of these calculations more accurate. Finally, we look at the special case where the matrix is row-ordered, and use the hook length theorem for Young tableaux to calculate the number of combinations of ranks when the matrix of ranks is both row- and column-ordered. (Received July 11, 2011)