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3. R. D. Gordon, "Values of Mill's ratio of area to bounding ordinate of the normal probability integral for large values of the argument," *Ann. Math. Stat.*, v. 12, 1941, p. 364–366.

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Tables are provided for the exact coefficients of the best linear systematic statistics for estimating the scale parameter of a one-parameter single exponential distribution and the scale and location parameters of a two-parameter single exponential distribution. All possible combinations of samples of size n with the r_1 lowest and r_2 highest values censored are considered for $n \leqq 10$. Exact coefficients for the best linear systematic statistic for estimating the mean (equal to the location parameter plus the scale parameter) are also given for the two parameter case. Other tables give the variances, exact or to $7D$, of the estimates obtained and the efficiency relative to the best linear estimate to $4D$ based on the complete sample. These extensive tables are of immediate practical importance in many fields, such as life testing and biological experimentation.

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Let $x_1, \cdots, x_n$ be a random sample from a normal population with variance σ^2 and let

$$\delta^2 = \frac{1}{n-1}\sum_{i=1}^{n-1}(x_i - x_{i+1})^2, \qquad d = \frac{1}{n-1}\sum_{i=1}^{n-1}|x_i - x_{i+1}|,$$

$$\delta_2^2 = \frac{1}{n-2}\sum_{i=1}^{n-2}(x_i - 2x_{i+1} + x_{i+2})^2, \qquad d_2 = \frac{1}{n-2}\sum_{i=1}^{n-2}|x_i - 2x_{i+1} + x_{i+2}|.$$

The problem is to develop approximations to the distributions of these four types of statistics. Let u be any one of these statistics. The method followed is to assume that u is approximately distributed as $(\chi_\nu^2/c)^\alpha$, where χ_ν^2 has a chi-square distribution with ν degrees of freedom; that is, taking $\lambda = 1/\alpha$, that cu^λ is approximately distributed as χ^2 with ν degrees of freedom. The constants c, α (or λ), and ν are then determined by equating the first three moments of u to those of $(\chi_\nu^2/c)^\alpha$. The results show that a fixed value can be used for α (or λ) if $n \geqq 5$. This allows two independent measures of variability u_1 and u_2, based on the same type of statistic, to be compared by use of the F test when $n \geqq 5$ for both statistics. The basic results of the paper are given in Table 1. There, for each of δ^2/σ^2, d/σ, δ_2^2/σ^2, and d_2/σ, fixed values are stated for λ, while $3D$ values for ν and $4D$ values for $\log_{10} c$ are given for $n = 5(1)\,20, 25, 30, 40, 50$. Table 2 deals with an example. Table 3 lists the results of some approximations to δ^2/σ^2 by $(\chi_\nu^2/c)^\alpha$ for $n = 5, 10, 20, 30, 50$. Table 4 lists for comparison purposes, the upper and lower 1% and 5% points for four