THE DISTRIBUTION OF THE LONGEST RUN UNDER BINOMIAL SAMPLING

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ABSTRACT

Assume that we have a sequence of N independent repeated Bernoulli trials with outcomes success(+) or failure(-) on each trial, where $p = Pr(+)$ and $q = Pr(-)$ is the same for all trials. In this thesis we consider the distribution of R_+, the length of the longest run of + signs, and of R, the length of the longest run of either + or - signs. A brief history of the general theory of runs is given in Chapter 1. In Chapter 2 we develop the theory for the distribution of the numbers of runs of +ve signs and of -ve signs, and for the total number of runs. Using similar methods, expressions for the distributions of R and of R_+ are developed in Chapter 3. Extensive tables of these distributions, and some related measures, are given in Appendix A. In Chapter 4 we describe the tables, give examples of their use, and give some details of the computational method. In appendix B and C we list the FORTRAN programs that were used to compute the tables.

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DEDICATION

Dedicated to my mother
and the memory of my father

Chapter 1

INTRODUCTION

Statistics first appeared as a science in the 17th century. Although the growth of nonparametric statistics began in the early 1900's, the major developments have occured within the last 35 years. In his "Bibliography of Nonparametric Statistics and Related Topics", I.R. Savage (1953) suggests that 1936 is the "true beginning" of distribution–free statistics. Lehmann (1975) comments in reference to Savage's paper, which lists about 3000 items, that "If brought up to date, it probably would contain twice that many entries."

Classical procedures in statistical inference usually assume that the distribution of the observed population depends in a known way on certain parameters. Generally speaking, a nonparametric procedure is one which makes no assumptions about the value of a parameter in a statistical model, whereas a distribution–free procedure is one which makes no assumptions about the precise form of the sampled population distribution. "Nonparametric" or "distribution–free" procedures do not assume that the observations come from a specific family of distributions and hence are valid under less restrictive assumptions.

Nonparametric procedures may be preferable precisely because of the weaker set of assumptions necessary for their validity. Weaker assumptions imply a broader range of applicability, and clearly, the risk of making unjustified assumptions decreases as they become less demanding. Moreover, nonparametric procedures often require less computational work than their parametric counterparts, so they are often easier to apply. The rationale behind the use of nonparametric procedures is usually easy to grasp, in contrast to classical parametric procedures which are often justified by sophisticated mathematical results. This distinction is important in practice, for a person who understands the theory behind a statistical procedure is less likely to use it incorrectly.

Procedures based on runs are an important class of distribution–free procedures. For example, one might consider runs of the same kind when the outcomes are one of two kinds of elements, runs above or below the median of the sample values, or runs of increasing or decreasing sequences of values. The distribution theory of runs seems to have been started towards the end of the nineteenth century rather than in days of Laplace when there was so much interest in games of chance. In a discussion of data taken from the roulette tables at Monte Carlo, Karl Pearson (1897) wrote "... the theory of runs is a very simple one." Pearson did not present any theory but regarded the distribution of runs as an application of the multinomial distribution. In this thesis most of the results presented in Chapters 2 and 3 are based on the theory for the distribution of runs given by Gibbons (1985) and by Bateman (1948).

A few studies early in the century were concerned with the distribution of runs from random arrangements of two kinds of elements under binomial sampling. Grünbaum (1904), derived the mean of the number of runs of given length when sampling from binomial and multinomial populations. Later, von Bortkiewicz (1917) derived the mean and variance of the number of runs when sampling from a binomial population.

Subsequent studies were concerned with random arrangements of two or more kinds of elements when the number of elements of each kind is fixed. Stevens (1939) presented the distribution of the total number of runs, without regard to length, from arrangements of two kinds of elements. Wald and Wolfowitz (1940) presented the same distribution and proved that it was asymptotically normal; they also described an interesting application of the distribution to the problem of testing the hypothesis that two samples have come from the same continuous distribution. Mood (1940) has thoroughly investigated the general distribution theory of runs of given length from random arrangements of fixed numbers of elements of two or more kinds. He also showed that these distributions are asymptotically normal. By considering the case of runs above and below the median for a sample of even size, Mosteller (1941) derived a formula for the probability of getting at least one run of a given length or greater when the number of elements of each two kinds is the same. Swed and Eisenhart (1943) gave tables of the exact distribution of total number of runs for $m \leq n \leq 20$ (where $n+m=N$) and later, Bradley (1968), Owen (1962), Daniel (1978), Gibbons (1985) and others presented these in textbooks on applied nonparametric and distribution–free statistics. Levene and Wolfowitz

(1944) described the means, variances and covariances of the lengths of runs up (increasing values) and down (decreasing values). Wolfowitz (1944a) also showed that the limiting distribution for a particular length of run up or down is the Poisson distribution. Bateman (1948) generalized Mosteller's formula, to obtain the distribution of the length of the longest run under the hypothesis of randomness, both for unequal and equal numbers of elements of the two kinds, and also discussed the power function for various tests based on the length of the longest run and on the number of runs.

At the same time a number of studies considered random arrangements of two kinds of elements under binomial sampling. von Mises (1921) showed that, for large samples, the number of long runs of given length was approximately distributed according to the Poisson law. Wishart and Hirshfeld (1936) derived the distribution of the total number of runs, without regard to length, when sampling from a binomial population and showed this total to be asymptotically normal. In the study mentioned above, Mood (1940) investigated the distribution theory of runs of given length under both binomial and multinomial sampling. Bateman (1948) also derived the distribution of the length of the longest run of +ve signs under binomial sampling.

The randomness of an ordered set of data or elements can be tested by using the theory of runs. A test for randomness enables us to determine whether or not a set of observations or measurements is random. Tests for randomness are applicable to either qualitative or quantitative data. Such procedures have been found

particularly useful in time–series and quality control studies and are an important part of statistical methodology. Because of the presence of many different kinds of nonrandomness, e.g. a serial correlation or autocorrelation, a trend, a tendency to cluster or bunch, a tendency to mix or alternate direction, etc., we usually assume the general form of the alternative to the hypothesis that the sequence of observations is random.

In a sequence of two kinds of elements, the randomness of an arrangement can be tested statistically using the distribution of runs. Too many runs, too few runs, or a run of excessive length rarely occur in a truly random sequence. Thus, the total number of runs and the lengths of runs provide information about the degree of randomness. Since the total number of runs and the lengths of runs are interrelated, procedures to test for randomness can be based on either criterion separately or on some combination. Usually the test for randomness is based on the total number of runs whose null distribution has been given by Stevens (1939) and by Wald and Wolfowitz (1940). However, the test of randomness can also be based on the distribution of the length of the longest run whose null distribution has been given by Bateman (1948). In either case the distribution used is the conditional distribution given the numbers of each of the two kinds of elements in a sequence of specified length.

Whenever we assume binomial sampling, namely that dichotomous outcomes $+$ and $-$ arise independently and with constant probabilities p and $q = 1 - p$ respectively, then by assumption the sequence of outcomes is random. In this

situation we may wish to test a hypothesis about the probability p, for example that $p = \frac{1}{2}$ in which case the two outcomes are equally likely. This test of hypothesis can be based on the length of the longest run and its distribution under binomial sampling. Thus, our objective is to determine the distribution of the length of the longest run from a binomial population with p specified.

Since the distributions of the total number of runs and the length of the longest run in random arrangements are interrelated, we will discuss both distributions in this thesis. In Chapter 2, we develop the distributions of the total number of runs and the number of runs of each kind in random arrangements where the number of elements of each kind are fixed. In Chapter 3, we derive the distribution of the length of the longest run of each kind and the length of the longest run of either kind when sampling from a binomial population. In Chapter 4, we discuss the computational procedures and present some examples of the use of the tables that have been developed for the distributions described in Chapter 3. The computation of the six tables, which are presented in appendix A, represent the major objective of this thesis. The programs used to generate the tables were written in FORTRAN and are presented in appendices B and C.

Chapter 2

DISTRIBUTION OF RUNS OF +VE AND –VE SIGNS

A run of an ordered sequence of a dichotomous variable may be defined as a succession of symbols of one type preceded and succeeded by symbols of a second type or no symbol at all. The number of symbols in a run will be referred to as its length. Before presenting a general formulation, some examples are given below.

(i) If the seats in a meeting of statisticians and mathematicians are numbered and occupied by n_1 statisticians and n_2 mathematicians, and if we list the members of the occupied seats in ascending order and replace each number by S or M according to whether the seat is occupied by a statistician or mathematician, then we have a sequence of $N = n_1 + n_2$ symbols consists of n_1 S's and n_2 M's. For instance, if $n_1 = 6$ and $n_2 = 8$, such a sequence might be the following:

MMMSMMSSSMSSMM

Any subsequence of L consecutive M's or S's which cannot be increased in length is called a run of length L. In this example there are in all 3 runs of S and 4 runs of M: one run of S's of length 1, one run of S's of length 2, one run of S's of length 3, one run of M's of length 1, two runs of M's of length 2, and one run of M's of length 3. If we use the symbol '/' to separate the runs, the

above sequence can be written as follows:

MMM/S/MM/SS/M/SS/MM
3 1 2 2 1 2 2

(ii) Suppose N persons, of which n_1 are males and n_2 are females, are waiting in a line to buy a ticket at a movie theatre. If we denote each of the N persons by M or F according to whether they are male or female, then we have a sequence of $N = n_1 + n_2$ symbols, n_1 M's and n_2 F's. For instance, if $n_1 = 8$ and $n_2 = 7$, such a sequence of symbols might be the following:

MMFFFMFMMMMFFMF

In this sequence there are 8 runs: two runs of M's of length 1, one run of M's of length 2, one run of M's of length 4, two runs of F's of length 1, one run of F's of length 2, one run of F's of length 3.

MM/FFF/M/F/MMMM/FF/M/F
2 3 1 1 4 2 1 1

(iii) Suppose a coin is tossed 15 times and the results H(head) or T(tail) are recorded in the order in which they occur, as follows:

TTHHHHTTTHTHTTH

Then, using the run separator symbol '/', we can express the above sequence as:

TT/HHHH/TTT/H/T/H/TT/H
2 4 3 1 1 1 2 1

In this example there are 4 runs of T's and 4 runs of H's, the length of the longest run of T's is 3 and the length of the longest run without regard to outcome is 4.

With only two kinds of outcomes as we have with S and M, M and F or H and T, the number of runs of the one kind will always be within one run of the number of runs of the other kind, because each run of one kind is preceded and followed by a run of the other kind, except at the beginning or end of the sequence.

A general formulation of this situation will now be presented. Let us consider a sequence of N +ve and –ve signs of which n_1 are +ve and n_2 are –ve, where $n_1 + n_2 = N$ and $n_1, n_2 \geq 0$. These signs are postulated to occur in random order. Given such a sequence it is easy to record the number of sets of +ve and –ve signs. Thus, according to this general formulation, the symbols S, M, T and M, F, T in the previous examples correspond to + and − respectively.

Let r_{1j}, r_{2j} $(j = 1,2,...,n_i; i = 1,2)$ denote the numbers of runs of +ve and –ve signs of length j respectively and let $r_1 = \sum_{j=1}^{n_1} r_{1j}$ and $r_2 = \sum_{j=1}^{n_2} r_{2j}$ be the total numbers of runs of each sign. In general $|r_1 - r_2| = 0$ or 1. Furthermore, let

$\mathbf{r}_1 = (r_{11},r_{12},\ldots,r_{1n_1})$ and $\mathbf{r}_2 = (r_{21},r_{22},\ldots,r_{2n_2})$ be the ordered sets of length frequencies. Any ordered set $\mathbf{r}_i = (r_{i1},r_{i2},\ldots,r_{in_i})$ of n_i integers with $\sum_{j=1}^{n_i} jr_{ij} = n_i$, for $i = 1,2$ is a feasible set of length frequencies.

2.1 Distribution of (R_1,R_2)

We will now describe the joint distribution of $(\mathbf{R}_1,\mathbf{R}_2)$, the length frequencies for runs of +ve sign and –ve sign respectively. The numbers of different arrangements of runs of +ve signs with length frequencies $\mathbf{r}_1$ and –ve signs with length frequencies $\mathbf{r}_2$ are $[r_1;\mathbf{r}_1]$ and $[r_2;\mathbf{r}_2]$ respectively, where

$$[r_i;\mathbf{r}_i] = \begin{bmatrix} r_i \\ r_{i1}r_{i2}\ldots r_{in_i} \end{bmatrix} = \frac{r_i!}{r_{i1}!r_{i2}!\ldots r_{in_i}!} \qquad (i = 1,2).$$

denote the multinomial coefficients.

For example, in the sequence

++-+--+

$N = 7$, $n_1 = 4$, $n_2 = 3$, $\mathbf{r}_1 = (2,1,0,0)$ with $r_1 = 3$ and $\mathbf{r}_2 = (1,1,0)$ with $r_2 = 2$ and there are $[r_1;\mathbf{r}_1] = 3$ and $[r_2;\mathbf{r}_2] = 2$ different arrangements of +ve and –ve

signs as tabulated below:

+ve signs	−ve signs
++-+--+	++-+--+
+-++--+	++--+-+
+-+--++	

So all possible arrangements are:

```
++-+--+  +-++--+  +-+--++
++--+-+  +--++-+  +--+-++
```

Thus the total number of arrangements with length frequencies $\mathbf{r_1}$ and $\mathbf{r_2}$ is 6 which is equivalent to $1[3;\mathbf{r_1}][2;\mathbf{r_2}]$.

As a second example consider the sequence

```
+++-+-+--
```

$N = 9$, $n_1 = 5$, $n_2 = 4$, $\mathbf{r_1} = (2,0,1,0,0)$ with $r_1 = 3$ and $\mathbf{r_2} = (2,1,0,0)$ with $r_2 = 3$ and there are $[r_1;\mathbf{r_1}] = 3$ and $[r_2;\mathbf{r_2}] = 3$ arrangements of +ve and −ve signs:

+ve signs	−ve signs
+++-+-+--	+++-+-+--
+-+++-+--	+++-+--+-
+-+-+++--	+++--+-+-

So all possible arrangements are as follows:

```
+++-+-+--  +-+++-+--  +-+-+++--  +++--+-+-  +++-+--+-  +--+++-+-
+-+++--+-  +--+-+++-  +-+--+++-  -+--+++-+  -+++-+--+  -++--+--+
--+++-+-+  -+-+++--+  --+-+++-+  -+-+--+++  --+-+-+++  -+--+-+++
```

Thus, the total number of arrangements with length frequencies $\mathbf{r_1}$ and $\mathbf{r_2}$ is 18 which is equivalent to $2[3;r_1][3;r_2]$.

In general, the total number of arrangements of n_1 +ve signs and n_2 −ve signs with length frequencies $\mathbf{r_1}$ and $\mathbf{r_2}$ respectively, is as follows:

$$N(\mathbf{r_1},\mathbf{r_2}) = [r_1;r_1][r_2;r_2]C(r_1,r_2) \tag{2.1}$$

where $C(r_1,r_2)$ is the number of ways of arranging r_1 runs of +ve signs and r_2 runs of −ve signs, so that no two adjacent runs are of the same signs. Thus $C(r_1,r_2) = 2$ if $r_1 = r_2$ and $C(r_1,r_2) = 1$ if $|r_1-r_2| = 1$.

Since we have n_1 +ve signs and n_2 −ve signs, hence there are $\begin{bmatrix} N \\ n_1 \end{bmatrix} = \begin{bmatrix} N \\ n_2 \end{bmatrix} = \frac{N!}{(n_1!\, n_2!)}$ possible arrangements of the +ve and −ve signs. Thus the joint distribution of the length frequencies $(\mathbf{R_1},\mathbf{R_2})$ is as follows:

$$P\{\mathbf{R_1}=\mathbf{r_1},\mathbf{R_2}=\mathbf{r_2}\} = \frac{[r_1;r_1]\,[r_2;r_2]}{\begin{bmatrix} N \\ n_1 \end{bmatrix}} C(r_1,r_2) \tag{2.2}$$

2.2 Distribution of (R_1,R_2)

We are now interested in deriving the joint distribution of (R_1,R_2), the numbers of runs of +ve and –ve signs. In order to do so, we first obtain the distribution of (R_1,R_2) by summing $[r_2;r_2]$ over all partitions of n_2 –ve signs into r_2 runs. By a result due to Euler, this sum is the coefficient of x^{n_2} in the expansion of $(x+x^2+x^3+\ldots)^{r_2}$. By use of the identity

$$(x+x^2+x^3+\ldots)^{r_2} = x^{r_2} \sum_{j=0}^{\infty} \binom{r_2+j-1}{r_2-1} x^j$$

it follows that the coefficient of x^{n_2} is $\binom{n_2-1}{r_2-1}$. Hence,

$$\sum [r_2;r_2] = \binom{n_2-1}{r_2-1} \tag{2.3}$$

where the sum is over the set $\left\{r_2: \sum_{j=0}^{n_2} j r_{2j} = n_2\right\}$. Therefore, the joint distribution of (R_1,R_2) is as follows:

$$P\{R_1=r_1,R_2=r_2\} = \frac{[r_1;r_1]\binom{n_2-1}{r_2-1} C(r_1,r_2)}{\binom{N}{n_1}} \tag{2.4}$$

Now, summing (2.4) over r_2, we obtain the marginal distribution of r_1. Noting that the only possible values of r_2 are r_1, (r_1-1), (r_1+1) for any given r_1, this results in

$$P\{R_1=r_1\} = [r_1;r_1]\frac{\left\{2\binom{n_2-1}{r_1-1}+\binom{n_2-1}{r_1-2}+\binom{n_2-1}{r_1}\right\}}{\binom{N}{n_1}}$$

which by use of the identity $\binom{m}{k} + \binom{m}{k-1} = \binom{m+1}{k}$, can be expressed as follows:

$$P\{R_1=r_1\} = \frac{[r_1;r_1]\binom{n_2+1}{r_1}}{\binom{N}{n_1}} \tag{2.5}$$

Similarly, the joint distribution of (R_1,R_2) is

$$P\{R_1=r_1,R_2=r_2\} = \frac{[r_2;r_2]\binom{n_1-1}{r_1-1}C(r_1,r_2)}{\binom{N}{n_1}} \tag{2.6}$$

and the marginal distribution of R_2 is the following:

$$P\{R_2=r_2\} = \frac{[r_2;r_2]\binom{n_1+1}{r_2}}{\binom{N}{n_1}} \tag{2.7}$$

Using (2.3) and summing the distribution (2.6) over r_2 for fixed r_2 we obtain the joint distribution of (R_1,R_2), namely

$$P\{R_1=r_1,R_2=r_1\} = \frac{\binom{n_1-1}{r_1-1}\binom{n_2-1}{r_2-1}C(r_1,r_2)}{\binom{N}{n_1}} \tag{2.8}$$

a result given by Wald and Wolfowitz (1940) and later by Mood (1940).

Furthermore, summing the distribution (2.8) over r_2, we obtain the marginal distribution of R_1 as follows:

$$P\{R_1=r_1\} = \frac{\binom{n_1-1}{r_1-1}\binom{n_2+1}{r_1}}{\binom{N}{n_1}} \tag{2.9}$$

Similarly, the marginal distribution of R_2 is the following:

$$P\{R_2=r_2\} = \frac{\binom{n_2-1}{r_2-1}\binom{n_1+1}{r_2}}{\binom{N}{n_1}} \tag{2.10}$$

2.3 Distribution of T

The distribution of the total number of runs $T = R_1 + R_2$ can be obtained from the joint distribution of (R_1,R_2) given in (2.8). To do so we need to distinguish the outcomes (r_1,r_2) for which t is even from those for which t is odd. Specifically

1) t is even only when $r_1 = r_2$, in which case $r_1 = r_2 = \frac{1}{2}t$

2) t is odd only when $|r_1-r_2| = 1$, in which case the two possible values of (r_1,r_2) are as follows:

$$r_1 = \tfrac{1}{2}(t-1) \text{ and } r_2 = \tfrac{1}{2}(t+1)$$

$$r_1 = \tfrac{1}{2}(t+1) \text{ and } r_2 = \tfrac{1}{2}(t-1)$$

The distribution of T can then be written as follows:

$$P\{T=t\} = \begin{cases} \dfrac{2\binom{n_1-1}{\frac{1}{2}t-1}\binom{n_2-1}{\frac{1}{2}t-1}}{\binom{N}{n_1}} & \text{for } t \text{ even} \\ \dfrac{\binom{n_1-1}{\frac{1}{2}(t-1)}\binom{n_2-1}{\frac{1}{2}(t-3)} + \binom{n_1-1}{\frac{1}{2}(t-3)}\binom{n_2-1}{\frac{1}{2}(t-1)}}{\binom{N}{n_1}} & \text{for } t \text{ odd} \end{cases} \qquad (2.11)$$

Chapter 3

LENGTH OF THE LONGEST RUN

Closely allied to runs of two kinds of elements, where n_1 and n_2 are fixed, are runs where n_1 and n_2 are chance variables that come from a binomial distribution. We will refer to the former as runs of two kinds of elements and to the latter as runs under binomial sampling. In this chapter we will describe the distribution of R, the length of the longest run of either +ve or −ve signs, and of R_+, the length of the longest run of +ve signs under binomial sampling.

Let us consider a sequence of N independent repeated Bernoulli trials with outcomes success (+) or failure (−) on each trial. Let $p = Pr(+)$ and $q = 1 - p = Pr(-)$ for each trial. Then the probability that a sequence of N trials will result in n_1 +ve signs and n_2 −ve signs is given by the binomial distribution

$$b(n_1,n_2;p) = \binom{n_1+n_2}{n_1} p^{n_1} q^{n_2}$$

The distribution of the length of the longest run of two kinds of elements has been thoroughly investigated by Bateman (1948). When we multiply the distribution of the length of the longest run of two kinds of elements with n_1 and n_2 fixed by the binomial probability $b(n_1,n_2;p)$ and sum over n_1 and n_2, we get

the corresponding distribution for the length of the longest run under binomial sampling.

In order to determine the distribution of R, we must first determine for the set of $\binom{N}{n_1}$ sequences of n_1 +ve and n_2 –ve signs, the number of sequences for which the longest run of either sign has length r. Similarly, to determine the distribution of R_+, we must first determine the number of sequences for which the longest run of +ve signs has length r.

For example, in a sequence of 5 independent repeated Bernoulli trials that result in 2 successes(+) and 3 failures(–) there are 10 possible outcomes:

++---, +-+--, +--+-, +---+, -++--, -+-+-, -+--+, --++-, --+-+, ---++

These sequences can be partitioned into the following subsets according to the lengths of the longest runs of +ve and of –ve signs

Sequences	Longest run (+)	Longest run (–)
-+-+-	1	1
-++--, --++-	2	2
+-+--, +--+-, -+--+, --+-+	1	2
++---, ---++	2	3
+---+	1	3

In considering R, the length of the longest run of either sign, there is 1 sequence with r = 1, 6 sequences where r = 2 and 3 sequences where r = 3. Similarly, in

considering R_+, the length of the longest run of +ve signs, there are 6 sequences with $r = 1$ and 4 sequences with $r = 2$.

In general we must consider the partitions of the n_1 +ve signs into t_1 runs whose longest run has length k_1 and the partitions of the n_2 –ve signs into t_2 runs whose longest run has length k_2, where as noted in Chapter 2 $|t_1-t_2| = 0$ or 1. To obtain the distribution R_+, we must determine the number of such partitions for which $k_1 = r$, while to determine the distribution of R we require the number of such partitions for which $\max\{k_1,k_2\} = r$. In order to accomplish this we appeal to the combinatorial results discussed below:

Let $f_i(t,k)$ where $i = 1$ or 2, be the number of partitions of n_i elements into t runs, where the longest run contains k elements. This quantity follows at once from Whitworth (1965), Choice and Chance proposition xxviii:

> "The number of ways in which M different things can be distributed into L different parcels, no parcel to contain less than Q things, nor more than $Q + Z - 1$ things, is the coefficient of x^{M-QL} in the expansion of $(1+x+...+x^{Z-1})^L$."

For our purpose, we can modify this result as follows: the number of ways in which n_i elements can be distributed into t runs so that no run contains more than r elements is the coefficient of x^{n_i} in the expansion of $(x+x^2+...+x^r)^t$.

Therefore,

$$(x+x^2+\ldots+x^r)^t = x^t(1-x^r)^t(1-x)^{-t}$$

$$= x^t \sum_{j=0}^{t} (-1)^j \begin{bmatrix} t \\ j \end{bmatrix} x^{jr} \sum_{c=0}^{\infty} \begin{bmatrix} t-1+c \\ t-1 \end{bmatrix} x^c$$

and the terms corresponding to $c = (n_i - jr - t)$ gives the coefficient of x^{n_i}:

$$\sum_{j=0}^{t} (-1)^j \begin{bmatrix} t \\ j \end{bmatrix} \begin{bmatrix} n_i - jr - 1 \\ t-1 \end{bmatrix} \tag{3.1}$$

Therefore,

$$\sum_{k \le r} f_i(t,k) = \sum_{j=0}^{t} (-1)^j \begin{bmatrix} t \\ j \end{bmatrix} \begin{bmatrix} n_i - jr - 1 \\ t-1 \end{bmatrix} \tag{3.2}$$

Thus, we can write

$$f_i(t,r) = \sum_{k \le r} f_i(t,k) - \sum_{k \le r-1} f_i(t,k)$$

$$= \sum_{j=1}^{t} (-1)^{j+1} \begin{bmatrix} t \\ j \end{bmatrix} \left\{ \begin{bmatrix} n_i - jr + j - 1 \\ t-1 \end{bmatrix} - \begin{bmatrix} n_i - jr - 1 \\ t-1 \end{bmatrix} \right\} \tag{3.3}$$

3.1 Distribution of R_+

We will now use these results to develop the distribution of R_+, the length of the longest run of +ve signs. Let us define $g(r|n_1,n_2)$ to be the number of sequences of n_1 +ve signs and n_2 –ve signs where at least one run of +ve signs has r elements and no run of +ve signs contains more than r elements. For any sequence containing n_1 +ve signs and n_2 –ve signs, the total number of runs must satisfy precisely one of the following:

(i) t runs of +ve signs and (t–1) runs of –ve signs

(ii) t runs of +ve signs and t runs of –ve signs

(iii) t runs of +ve signs and (t+1) runs of –ve signs

The number of arrangements of n_2 –ve signs into (t–1), t and (t+1) runs of the above cases are $\binom{n_2-1}{t-2}$, $\binom{n_2-1}{t-1}$ and $\binom{n_2-1}{t}$ respectively. This follows at once from the following lemma.

Lemma: The number of distinguishable ways of distributing m like objects into k distinguishable cells with no cell empty is $\binom{m-1}{k-1}$, $m \geq k$.

Therefore, we can write,

$$g(r|n_1,n_2) = \sum_{t=1}^{n_1-r+1} f_1(t,r)\left\{\binom{n_2-1}{t-2}+2\binom{n_2-1}{t-1}+\binom{n_2-1}{t}\right\} \qquad (3.4)$$

where $f_1(t,r)$ is the number of partitions of n_1 +ve signs into t runs where the

longest run has r +ve signs. By using the identity $\binom{m}{k} + \binom{m}{k-1} = \binom{m+1}{k}$, equation (3.4) reduces to the following:

$$g(r|n_1,n_2) = \sum_{t=1}^{n_1-r-1} f_1(t,r)\binom{n_2+1}{t} \tag{3.5}$$

Hence in a sequence of N trials that result in n_1 +ve signs and n_2 −ve signs, where $n_1 + n_2 = N$, the probability that the longest run of +ve signs has length r can be expressed as follows:

$$P\{R_+=r|n_1,n_2\} = \frac{g(r|n_1,n_2)}{\binom{N}{n_1}} = \frac{1}{\binom{N}{n_1}} \sum_{t=1}^{n_1-r+1} f_1(t,r)\binom{n_2+1}{t} \tag{3.6}$$

This is the probability distribution of R_+, the length of the longest run of +ve signs of two kinds of elements given by Bateman (1948).

The upper cumulative probabilities in the distribution of R_+ are then given by

$$P\{R_+ \geq r|n_1,n_2\} = \frac{1}{\binom{N}{n_1}} \sum_{t=1}^{n_1-r+1} \binom{n_2+1}{t} \sum_{j=1}^{t} (-1)^{j+1}\binom{t}{j}\binom{n_1-j(r-1)-1}{t-1} \tag{3.7}$$

Using the identity that $\binom{a}{j}\binom{b}{a} = \binom{b}{j}\binom{b-j}{a-j}$ and the relation that

$$\sum_{m=0}^{M} \binom{M}{k+m}\binom{N}{m} = \binom{M+N}{k+N}$$

we can write (3.7) as

$$P\{R_+ \geq r \mid n_1,n_2\} = \frac{1}{\binom{N}{n_1}} \left\{ \sum_{j=1}^{[n_1/r]} (-1)^{j+1} \binom{n_2+1}{j} \binom{N-jr}{n_2} \right\} \tag{3.8}$$

As discussed earlier, the binomial distribution is

$$b(n_1,n_2;p) = \binom{n_1+n_2}{n_1} p^{n_1} q^{n_2} \tag{3.9}$$

Therefore, from (3.8) and (3.9) we obtain

$$P\{R_+ \geq r;p\} = \sum_{n_1=r}^{N} P\{R_+ \geq r \mid n_1,n_2\} b(n_1,n_2;p)$$

$$= \sum_{n_1=r}^{N} \left\{ \sum_{j=1}^{[n_1/r]} (-1)^{j+1} \binom{n_2+1}{j} \binom{N-jr}{n_2} \right\} p^{n_1} q^{n_2}$$

$$= \sum_{n_1=r}^{N} \sum_{j=1}^{[n_1/r]} (-1)^{j+1} \frac{n_2+1}{j} \binom{N-jr}{n_2} \binom{n_2}{j-1} p^{n_1} q^{n_2}$$

$$= \sum_{j=1}^{[N/r]} (-1)^{j+1} p^{jr} q^{j-1} \binom{N-jr}{j-1} \sum_{n_1 \geq jr} \binom{N-j(r+1)+1}{n_1-jr} \frac{N-n_1+1}{j} \times p^{n_1-jr} q^{N-n_1-j+1}$$

since $n_2 = N - n_1$ and

$$\binom{N-jr}{N-n_1} \binom{N-n_1}{j-1} = \binom{N-jr}{j-1} \binom{N-j(r+1)+1}{n_1-jr}$$

Using the relation

$$\sum_{k=0}^{m} \left(1 + \frac{m-k}{j}\right) \binom{m}{k} p^k q^{m-k} = \left(1 + \frac{m}{j} q\right)$$

we obtain

$$P\{R_+ \geq r;p\} = \sum_{j=1}^{[N/r]} (-1)^{j+1} \binom{N-jr}{j-1} p^{jr} q^{j-1} \left(1 + \frac{N-j(r+1)+1}{j} q\right)$$

$$= \sum_{j=1}^{[N/r]} (-1)^{j+1} \left(p + \frac{N-jr+1}{j} q\right) \binom{N-jr}{j-1} p^{jr} q^{j-1} \qquad (3.10)$$

Equation (3.10) gives an expression for the upper cumulative distribution of R_+.

We can obtain the exact probability distribution of R_+ by using the following relationship.

$$P\{R_+ = r;p\} = P\{R_+ \geq r;p\} - P\{R_+ \geq r+1;p\} \tag{3.11}$$

Similarly, if R_- is the length of the longest run of –ve signs, then

$$P\{R_- \geq r;p\} = \sum_{j=1}^{[N/r]} (-1)^{j+1}\left[q + \frac{N-jr+1}{j} p\right]\binom{N-jr}{j-1} q^{jr}p^{j-1} \tag{3.12}$$

which is obtain by interchanging p and q in (3.10) and

$$P\{R_- = r;p\} = P\{R_- \geq r;p\} - P\{R_- \geq r+1;p\}$$

It should be noted that the probability distribution of R_- is related to that of R_+ as follows:

$$P\{R_- = r;p\} = P\{R_+ = r;q\}. \tag{3.13}$$

3.2 Distribution of R

We will now develop the distribution of R, the length of the longest run of either +ve or –ve signs. Once again, we make use of the results (3.2) and (3.3) presented previously. Let us define $g(2t,r|n_1,n_2)$ to be the number of sequences of

t runs of +ve signs and t runs of –ve signs, where at least one run contains r elements of the same sign and no run contains more than r elements. Then we may write

$$g(2t,r\,|\,n_1,n_2) = 2\left\{f_1(t,r)\sum_{k\le r} f_2(t,k) + f_2(t,r)\sum_{k\le r-1} f_1(t,k)\right\} \tag{3.14}$$

The factor 2 is introduced because the sequence may begin with +ve or with –ve sign. Similarly, we define $g(2t+1,r\,|\,n_1,n_2)$ to be the number of sequences of t runs of one sign and $(t+1)$ runs of opposite sign, where at least one run contains r elements of the same sign and no run contains more than r elements. Then we may write

$$g(2t+1,r\,|\,n_1,n_2) = \left\{f_1(t+1,r)\sum_{k\le r} f_2(t,k) + f_2(t,r)\sum_{k\le r-1} f_1(t+1,k)\right\}$$

$$+\left\{f_1(t,r)\sum_{k\le r} f_2(t+1,k) + f_2(t+1,r)\sum_{k\le r-1} f_1(t,k)\right\} \tag{3.15}$$

If we now let $g(r\,|\,n_1,n_2)$ be the total number of sequences of n_1 +ve signs and n_2 –ve signs, where at least one run of either sign has r elements and no run of either sign contains more than r elements, then equations (3.14) and (3.15) give

$$g(r|n_1,n_2) = \sum_{t=1}^{n_1-r+1} \left\{ g(2t,r|n_1,n_2) + g(2t+1,r|n_1,n_2) \right\} \tag{3.16}$$

Hence, for a sequence of N trials which results in n_1 +ve and n_2 −ve signs, where $n_1 + n_2 = N$, the probability distribution of R is given by

$$P\{R=r|n_1,n_2\} = \frac{g(r|n_1,n_2)}{\binom{N}{n_1}} \tag{3.17}$$

a result first given by Bateman (1948).

Therefore, from (3.17) and (3.9) we obtain

$$P\{R = r;p\} = \sum_{n_1=0}^{N} P\{R=r|n_1,n_2\} b(n_1,n_2;p)$$

$$= \sum_{n_1=0}^{N} g(r|n_1,n_2) p^{n_1} q^{n_2} \tag{3.18}$$

where $g(r|n_1,n_2)$ is obtained from (3.16) using (3.3), (3.14) and (3.15). This expression gives the probability distribution for R, the length of the longest run of either sign under binomial sampling.

Chapter 4

DESCRIPTION OF THE TABLES WITH EXAMPLES

Suppose we perform an experiment consisting of N independent repeated Bernoulli trials, with outcomes + or − on each trial. Let p and $q = 1 - p$ be the probability of + and − respectively on each trial.

For given N, r and p, Table 1 gives values of the quantity $P\{R_+ = r;p\}$, the exact probability distribution of R_+, the length of the longest run of +ve signs. Values are given for N = 2(1)25; p = 0.05, 0.10(0.10)0.90, 0.95, 0.99 and r = 0(1)N.

For the same range of values of N, r and p as listed above, Table 2 gives values of $P\{R_+ \geq r;p\}$, the upper cumulative probability distribution of R_+.

Also, for values of N = 25(1)50 and the same range of values of p as listed earlier, Table 3 gives values of the mean, variance, standard deviation and upper 50, 25, 10, 5, 2 and 1 percentiles of the distribution of R_+. These quantities are labelled $E(R_+)$, $V(R_+)$, $S(R_+)$, $^+U100\alpha\%$ ($\alpha = 0.50, 0.25, 0.10, 0.05, 0.02, 0.01$) respectively, where $^+U100\alpha\%$ is the smallest value of r such that $P\{R_+ \geq r;p\} \leq \alpha$. This value of r is tabulated in parentheses and followed by the

corresponding probability. Table entries (**)***** indicate that the corresponding upper percentiles are undefined. It should be noted that, similar tables may be obtained for –ve signs by using equation (3.13).

For given N, r and p, Table 4 gives values of $P\{R = r;p\}$, the exact probability distribution of R, the length of the longest run of either +ve or –ve signs. Values of $P\{R = r;p\}$ are given for $N = 2(1)25$; $p = 0.05, 0.10(0.10)0.50$; and $r = 1(1)N$. For $p > 0.50$, the values of $P\{R = r;p\}$ are equal to the entries $P\{R = r;1-p\}$ by virtue of symmetry.

For the same range of values of N, r and p as listed above, Table 5 gives values of $P\{R \geq r;p\}$, the upper cumulative probability distribution R.

For values of $N = 25(1)50$ and the same range of values of p as listed above, Table 6 gives values of the mean, variance, standard deviation and upper 50, 25, 10, 5, 2 and 1 percentiles of the distribution of R. These quantities are labelled E(R), V(R), S(R), U100α% (α = 0.50, 0.25, 0.10, 0.05, 0.02, 0.01) respectively, where U100α% is the smallest value of r such that $P\{R \geq r;p\} \leq \alpha$. This value of r is tabulated in parentheses and is followed by the corresponding probability.

4.1 Examples of use of tables

(i) Suppose we toss a fair coin 25 times. Denote the outcome "head" by + and the outcome "tail" by −. Since the coin is fair, we have $p = \frac{1}{2}$. From Table 1, the probability that the longest run of heads is of length 8 is 0.019359. It should be noted that it is possible to have two longest run of heads of length 8, but not three since each run of heads must be separated by at least one tail.

From Table 2, the probability that the longest run of heads is of length 8 or longer equals 0.036903.

From Table 5, the probability that the longest run of heads or tails is of length 7 or longer equals 0.150781.

(ii) As another example, suppose that we are interested in whether or not a coin is fair. That is we wish to test the null hypothesis H_0: $p = \frac{1}{2}$ against the two–sided alternative hypothesis H_1: $p \neq \frac{1}{2}$. It seems reasonable to reject H_0 at level α, when R, the length of the longest run of heads or tails equals or exceeds $U100\alpha\%$, the upper 100α–percentile of the distribution of R. For example, if $N = 50$, and the nominal value of $\alpha = 0.05$, from Table 6 we find $U5\% = 10$ and $P\{R \geq 10;p=0.5\} = 0.04051$ which is the true value of α. That is, we will reject H_0 when $R \geq 10$.

(iii) If, instead, in example (ii), we are interested in testing H_0: $p = 0.4$ against the one–sided alternative H_1: $p < 0.4$, we would reject H_0 at level α, when R_-, the length of the longest run of tails equals or exceeds $^-U100\alpha\%$, the upper 100α–percentile of the distribution of R_-. For nominal $\alpha = 0.05$, we find from Table 3 that $P\{R_- \geq 12;p=0.4\} = 0.03497 = P\{R_+ \geq 12;p=0.6\}$ which is the true value of α. In this case we will reject H_0 when $R_- \geq 12$.

4.2 Details of computation

The entries in Table 2 were obtained by evaluating equation (3.10), which gives $P\{R_+ \geq r;p\}$, for specified N, r and p. The entries $P\{R_+=r;p\}$ in Table 1 were obtained by computing $P\{R_+ \geq r;p\} - P\{R_+ \geq r+1;p\}$. For given N and p, the mean $E(R_+)$ and variance $V(R_+)$ given in Table 3 were found by evaluating

$$\sum_{r=0}^{N} rP\{R_+=r;p\} \quad \text{and} \quad \sum_{r=0}^{N} r^2P\{R_+=r;p\} - [E(R_+)]^2,$$

respectively.

The entries in Table 4 were obtained by evaluating equation (3.18), which gives $P\{R=r;p\}$, for specified N, r and p. The entries $P\{R \geq r;p\}$ in Table 5 were obtained by computing $\sum_{k=r}^{N} P\{R=k;p\}$. For given N and p, the mean E(R)

and variance V(R) given in Table 6 were found by evaluating

$$\sum_{r=1}^{N} rP\{R=r;p\}, \text{ and } \sum_{r=1}^{N} r^2P\{R=r;p\} - [E(R)]^2,$$

respectively.

The tables presented here were computed on an IBM 3083 at the University of Victoria. The computations were all done using double–precision arithmetic (about 16 decimal places). The programs used were written in the FORTRAN language. A listing of the FORTRAN programs used to evaluate the expressions given by equations (3.10) and (3.18) are given in the appendix.

The expressions involve many combinatorial terms. These terms were evaluated in terms of the gamma function, since $\Gamma(m+1) = m!$ for any nonnegative integer m. The built–in function DLGAMA(X) was used and gives the value of the natural logarithm of $\Gamma(X)$.

Computations based on equation (3.10) are much faster than those for equation (3.18) because equation (3.10) has been expressed in a simple form, which contains a single summation, and one combinatorial term, whereas equation (3.18) involves multiple summations in order to evaluate the quantities described in equations (3.2), (3.3), (3.14), (3.15) and (3.16).

BIBLIOGRAPHY

Barton, D. E. and F. N. David (1957). Multiple runs. *Biometrika,* 44, 168-178 and 534.

Barton, D. E. and F. N. David (1958). Non-randomness in a sequence of two alternatives II, Runs test. *Biometrika,* 45, 253-256.

Bateman, G. (1948). On the power function of the longest run as a test for randomness in a sequence of alternatives. *Biometrika,* 35, 97-112.

Bradley, J. V. (1968). *Distribution-Free Statistical Tests.* Prentice-Hall, Englewood Cliffs, New Jersey.

Burr, E. J. and G. Cane (1961). Longest run of consecutive observations having a specified attribute. *Biometrika,* 48, 461-465.

Daniel, W. (1978). *Applied Nonparametric Statistics.* Houghton Mifflin, Boston, Mass.

David, F. N. (1947). On a power function for test of randomness in a sequence of two alternatives. *Biometrika,* 34, 335-339.

Edgington, E. S. (1961). Probability tables for number of runs of signs of first differences in ordered series. *Journal of the American Statistical Association,* 56, 156-159.

Gibbons, J. D. (1985). *Nonparametric Statistical Inference.* 2nd edition. McGraw-Hill, New York.

Grünbaum, H. (1904). *Isolierte und reine Gruppen und die Marbe'sche Zahl "p".* Würzburg.

Lehmann, E. L. (1975). *Nonparametrics: Statistical Methods based on Ranks.* McGraw-Hill, New York.

Levene, H. (1952). On the power function of the tests of randomness based on runs up and down. *Annals of Mathematical Statistics,* 23, 34-56.

Levene, H. and J. Wolfowitz (1944). The covariance matrix of runs up and down. *Annals of Mathematical Statistics,* 15, 58-69.

Mood, A. M. (1940). The distribution theory of runs. *Annals of Mathematical Statistics,* 11, 367-392.

Mosteller, F. (1941). Note on an application of runs to quality control charts. *Annals of Mathematical Statistics,* 12, 228-232.

Nijenhuis, A. and H. S. Wilf (1978). *Combinatorial Algorithms.* Academic Press, New York.

Olmstead, P. S. (1946). Distribution of sample arrangements for runs up and down. *Annals of Mathematical Statistics,* 17, 24-33.

Owen, D. B. (1962). *Handbook of Statistical Tables.* Addison-Wesley, Reading, Mass.

Pearson, K. (1897). *The Chances of Death and other Studies in Evolution.* Vol. I, Chap. 2. London.

Savage, I. R. (1953). Bibliography of nonparametric statistics and related topics. *Journal of the American Statistical Association,* 48, 844-906.

Stevens, W. L. (1939). *Annals of Eugenics,* 9, 10-17.

Swed, F. S. and C. Eisenhart (1943). Tables for the testing the randomness of grouping in a sequence of alternatives. *Annals of Mathematical Statistics,* 14, 66-87.

von Bortkiewicz, L. (1917). *Die Iteration,* Berlin.

von Mises, R. (1921). *Zeit.f.angew. Math. u. Mech.*, Vol. 1, 298.

Wald, A. and J. Wolfowitz (1940). On a test whether two samples are from the same population. *Annals of Mathematical Statistics,* 11, 147-162.

Whitworth, W. A. (1965). *Choice and Chance.* 5th edition. Hafner, New York.

Wishart, J. and H. O. Hirshfeld (1936). A theorem concerning the distribution of joins between line segments. *The Journal of the London Mathematical Society,* 11, 227-235.

Wolfowitz, J. (1943). On the theory of runs with some application to quality control. *Annals of Mathematical Statistics,* 14, 280-288.

Wolfowitz, J. (1944a). Asymptotic distribution of runs up and down. *Annals of Mathematical Statistics,* 15, 163-172.

Wolfowitz, J. (1944b). Note on runs of consecutive elements. *Annals of Mathematical Statistics,* 15, 97-98.

APPENDIX A

TABLES

TABLE 1

PROBABILITY DISTRIBUTION OF THE LENGTH OF

THE LONGEST RUN OF +VE SIGNS

TABLE 1

PROBABILITY DISTRIBUTION OF THE LENGTH OF THE LONGEST RUN OF +VE SIGNS

N	r_+	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
2	0	0.902500	0.810000	0.640000	0.490000	0.360000	0.250000
2	1	0.095000	0.180000	0.320000	0.420000	0.480000	0.500000
2	2	0.002500	0.010000	0.040000	0.090000	0.160000	0.250000
3	0	0.857375	0.729000	0.512000	0.343000	0.216000	0.125000
3	1	0.137750	0.252000	0.416000	0.504000	0.528000	0.500000
3	2	0.004750	0.018000	0.064000	0.126000	0.192000	0.250000
3	3	0.000125	0.001000	0.008000	0.027000	0.064000	0.125000
4	0	0.814506	0.656100	0.409600	0.240100	0.129600	0.062500
4	1	0.178244	0.315900	0.486400	0.543900	0.518400	0.437500
4	2	0.007006	0.026100	0.089600	0.170100	0.249600	0.312500
4	3	0.000237	0.001800	0.012800	0.037800	0.076800	0.125000
4	4	0.000006	0.000100	0.001600	0.008100	0.025600	0.062500
5	0	0.773781	0.590490	0.327680	0.168070	0.077760	0.031250
5	1	0.216600	0.372600	0.537600	0.558600	0.489600	0.375000
5	2	0.009257	0.034110	0.113920	0.208530	0.291840	0.343750
5	3	0.000350	0.002610	0.017920	0.051030	0.099840	0.156250
5	4	0.000012	0.000180	0.002560	0.011340	0.030720	0.062500
5	5	0.000000	0.000010	0.000320	0.002430	0.010240	0.031250
6	0	0.735092	0.531441	0.262144	0.117649	0.046656	0.015625
6	1	0.252926	0.422820	0.573440	0.555660	0.449280	0.312500
6	2	0.011501	0.042039	0.137216	0.242991	0.324864	0.359375
6	3	0.000463	0.003420	0.023040	0.064260	0.122880	0.187500
6	4	0.000018	0.000261	0.003584	0.015309	0.039936	0.078125
6	5	0.000001	0.000018	0.000512	0.003402	0.012288	0.031250
6	6	0.000000	0.000001	0.000064	0.000729	0.004096	0.015625
7	0	0.698337	0.478297	0.209715	0.082354	0.027994	0.007813
7	1	0.287322	0.467216	0.597197	0.541563	0.405734	0.257812
7	2	0.013740	0.049888	0.159539	0.273993	0.351130	0.367188
7	3	0.000576	0.004229	0.028109	0.076980	0.143462	0.210938

TABLE 1 (continued)

N	r_+	p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
2	0	0.160000	0.090000	0.040000	0.010000	0.002500	0.000100
2	1	0.480000	0.420000	0.320000	0.180000	0.095000	0.019800
2	2	0.360000	0.490000	0.640000	0.810000	0.902500	0.980100
3	0	0.064000	0.027000	0.008000	0.001000	0.000125	0.000001
3	1	0.432000	0.336000	0.224000	0.108000	0.052250	0.010098
3	2	0.288000	0.294000	0.256000	0.162000	0.090250	0.019602
3	3	0.216000	0.343000	0.512000	0.729000	0.857375	0.970299
4	0	0.025600	0.008100	0.001600	0.000100	0.000006	0.000000
4	1	0.326400	0.207900	0.102400	0.027900	0.007244	0.000298
4	2	0.345600	0.338100	0.281600	0.170100	0.092506	0.019700
4	3	0.172800	0.205800	0.204800	0.145800	0.085737	0.019406
4	4	0.129600	0.240100	0.409600	0.656100	0.814506	0.960596
5	0	0.010240	0.002430	0.000320	0.000010	0.000000	0.000000
5	1	0.249600	0.138600	0.057600	0.012600	0.002850	0.000103
5	2	0.351360	0.310170	0.225280	0.112590	0.054037	0.010192
5	3	0.207360	0.236670	0.225280	0.153090	0.087881	0.019503
5	4	0.103680	0.144060	0.163840	0.131220	0.081451	0.019212
5	5	0.077760	0.168070	0.327680	0.590490	0.773781	0.950990
6	0	0.004096	0.000729	0.000064	0.000001	0.000000	0.000000
6	1	0.184320	0.086940	0.028160	0.003780	0.000487	0.000004
6	2	0.336384	0.260631	0.152576	0.048519	0.013532	0.000588
6	3	0.241920	0.267540	0.245760	0.160380	0.090024	0.019600
6	4	0.124416	0.165669	0.180224	0.137781	0.083487	0.019308
6	5	0.062208	0.100842	0.131072	0.118098	0.077378	0.019020
6	6	0.046656	0.117649	0.262144	0.531441	0.735092	0.941480
7	0	0.001638	0.000219	0.000013	0.000000	0.000000	0.000000
7	1	0.136090	0.055698	0.014899	0.001513	0.000160	0.000001
7	2	0.319334	0.224778	0.115917	0.031031	0.007745	0.000303
7	3	0.257818	0.263115	0.213811	0.114526	0.055413	0.010282

TABLE 1 (continued)

N	r_+	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
7	4	0.000023	0.000342	0.004608	0.019278	0.049152	0.093750
7	5	0.000001	0.000026	0.000717	0.004593	0.015974	0.039063
7	6	0.000000	0.000002	0.000102	0.001021	0.004915	0.015625
7	7	0.000000	0.000000	0.000013	0.000219	0.001638	0.007813
8	0	0.663420	0.430467	0.167772	0.057648	0.016796	0.003906
8	1	0.319887	0.506378	0.611451	0.520489	0.362465	0.210937
8	2	0.015974	0.057657	0.180920	0.301741	0.371128	0.367188
8	3	0.000689	0.005037	0.033137	0.089342	0.162570	0.230469
8	4	0.000029	0.000423	0.005632	0.023247	0.058368	0.109375
8	5	0.000001	0.000034	0.000922	0.005783	0.019661	0.046875
8	6	0.000000	0.000003	0.000143	0.001378	0.006390	0.019531
8	7	0.000000	0.000000	0.000020	0.000306	0.001966	0.007813
8	8	0.000000	0.000000	0.000003	0.000066	0.000655	0.003906
9	0	0.630249	0.387420	0.134218	0.040354	0.010078	0.001953
9	1	0.350712	0.540836	0.618267	0.495365	0.321574	0.171875
9	2	0.018202	0.065348	0.201392	0.326484	0.385745	0.361328
9	3	0.000801	0.005845	0.038126	0.101393	0.180597	0.248047
9	4	0.000034	0.000504	0.006654	0.027170	0.067191	0.123047
9	5	0.000001	0.000042	0.001126	0.006974	0.023347	0.054688
9	6	0.000000	0.000003	0.000184	0.001735	0.007864	0.023438
9	7	0.000000	0.000000	0.000029	0.000413	0.002556	0.009766
9	8	0.000000	0.000000	0.000004	0.000092	0.000786	0.003906
9	9	0.000000	0.000000	0.000001	0.000020	0.000262	0.001953
10	0	0.598737	0.348678	0.107374	0.028248	0.006047	0.000977
10	1	0.379883	0.571069	0.619289	0.468164	0.283967	0.139648
10	2	0.020424	0.072961	0.220987	0.348473	0.395864	0.351562
10	3	0.000914	0.006652	0.043075	0.113120	0.197385	0.262695
10	4	0.000040	0.000585	0.007674	0.031061	0.075778	0.135742
10	5	0.000002	0.000050	0.001331	0.008165	0.027034	0.062500
10	6	0.000000	0.000004	0.000225	0.002092	0.009339	0.027344
10	7	0.000000	0.000000	0.000037	0.000521	0.003146	0.011719
10	8	0.000000	0.000000	0.000006	0.000124	0.001022	0.004883
10	9	0.000000	0.000000	0.000001	0.000028	0.000315	0.001953
10	10	0.000000	0.000000	0.000000	0.000006	0.000105	0.000977
11	0	0.568800	0.313811	0.085899	0.019773	0.003628	0.000488
11	1	0.407485	0.597505	0.615829	0.440216	0.249977	0.113281
11	2	0.022640	0.080497	0.239737	0.367925	0.402135	0.338867
11	3	0.001027	0.007457	0.047986	0.124530	0.213028	0.274902
11	4	0.000046	0.000666	0.008693	0.034924	0.084191	0.147949

TABLE 1 (continued)

N	r_+	p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
7	4	0.145152	0.187278	0.196608	0.144342	0.085523	0.019404
7	5	0.074650	0.115968	0.144179	0.124003	0.079313	0.019115
7	6	0.037325	0.070589	0.104858	0.106288	0.073509	0.018830
7	7	0.027994	0.082354	0.209715	0.478297	0.698337	0.932065
8	0	0.000655	0.000066	0.000003	0.000000	0.000000	0.000000
8	1	0.099656	0.035120	0.007496	0.000492	0.000031	0.000000
8	2	0.296479	0.188492	0.083845	0.017611	0.003597	0.000110
8	3	0.266250	0.248102	0.171377	0.063357	0.018964	0.000870
8	4	0.165888	0.208887	0.212992	0.150903	0.087559	0.019500
8	5	0.087091	0.131095	0.157286	0.129908	0.081247	0.019210
8	6	0.044790	0.081178	0.115343	0.111603	0.075347	0.018924
8	7	0.022395	0.049413	0.083886	0.095659	0.069834	0.018641
8	8	0.016796	0.057648	0.167772	0.430467	0.663420	0.922745
9	0	0.000262	0.000020	0.000001	0.000000	0.000000	0.000000
9	1	0.072917	0.022279	0.003885	0.000185	0.000009	0.000000
9	2	0.270803	0.154951	0.058458	0.008790	0.001180	0.000010
9	3	0.273936	0.239795	0.152011	0.049921	0.013849	0.000592
9	4	0.179906	0.213202	0.195822	0.114417	0.056425	0.010369
9	5	0.099533	0.146221	0.170394	0.135813	0.083181	0.019305
9	6	0.052255	0.091766	0.125829	0.116917	0.077185	0.019018
9	7	0.026874	0.056824	0.092275	0.100442	0.071580	0.018735
9	8	0.013437	0.034589	0.067109	0.086093	0.066342	0.018455
9	9	0.010078	0.040354	0.134218	0.387420	0.630249	0.913517
10	0	0.000105	0.000006	0.000000	0.000000	0.000000	0.000000
10	1	0.053241	0.014073	0.001977	0.000063	0.000002	0.000000
10	2	0.245293	0.127331	0.041853	0.005100	0.000587	0.000004
10	3	0.276845	0.226088	0.128870	0.035475	0.008554	0.000311
10	4	0.191236	0.212328	0.171940	0.073627	0.023631	0.001145
10	5	0.111974	0.161347	0.183501	0.141718	0.085116	0.019400
10	6	0.059720	0.102355	0.136315	0.122231	0.079022	0.019112
10	7	0.031353	0.064236	0.100663	0.105225	0.073325	0.018828
10	8	0.016124	0.039777	0.073820	0.090398	0.068001	0.018547
10	9	0.008062	0.024212	0.053687	0.077484	0.063025	0.018270
10	10	0.006047	0.028248	0.107374	0.348678	0.598737	0.904382
11	0	0.000042	0.000002	0.000000	0.000000	0.000000	0.000000
11	1	0.038860	0.008904	0.001017	0.000023	0.000001	0.000000
11	2	0.220248	0.103620	0.029416	0.002767	0.000249	0.000001
11	3	0.276588	0.210612	0.107323	0.023894	0.004656	0.000120
11	4	0.202297	0.214740	0.162823	0.063400	0.019116	0.000873

TABLE 1 (continued)

N	r_+	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
11	5	0.000002	0.000058	0.001536	0.009351	0.030657	0.069824
11	6	0.000000	0.000005	0.000266	0.002449	0.010813	0.031250
11	7	0.000000	0.000000	0.000045	0.000628	0.003736	0.013672
11	8	0.000000	0.000000	0.000007	0.000156	0.001258	0.005859
11	9	0.000000	0.000000	0.000001	0.000037	0.000409	0.002441
11	10	0.000000	0.000000	0.000000	0.000008	0.000126	0.000977
11	11	0.000000	0.000000	0.000000	0.000002	0.000042	0.000488
12	0	0.540360	0.282430	0.068719	0.013841	0.002177	0.000244
12	1	0.433595	0.620532	0.608929	0.412397	0.219589	0.091797
12	2	0.024852	0.087956	0.257672	0.385046	0.405158	0.324219
12	3	0.001140	0.008263	0.052858	0.135632	0.227584	0.284912
12	4	0.000051	0.000747	0.009710	0.038758	0.092407	0.159424
12	5	0.000002	0.000067	0.001741	0.010535	0.034243	0.076904
12	6	0.000000	0.000006	0.000307	0.002807	0.012288	0.035156
12	7	0.000000	0.000001	0.000053	0.000735	0.004325	0.015625
12	8	0.000000	0.000000	0.000009	0.000188	0.001494	0.006836
12	9	0.000000	0.000000	0.000001	0.000047	0.000503	0.002930
12	10	0.000000	0.000000	0.000000	0.000011	0.000164	0.001221
12	11	0.000000	0.000000	0.000000	0.000002	0.000050	0.000488
12	12	0.000000	0.000000	0.000000	0.000001	0.000017	0.000244
13	0	0.513342	0.254187	0.054976	0.009689	0.001306	0.000122
13	1	0.458289	0.640497	0.599420	0.385276	0.192619	0.074341
13	2	0.027057	0.095340	0.274820	0.400024	0.405452	0.308350
13	3	0.001252	0.009067	0.057691	0.146432	0.241109	0.292969
13	4	0.000057	0.000828	0.010726	0.042562	0.100425	0.170166
13	5	0.000003	0.000075	0.001945	0.011716	0.037801	0.083862
13	6	0.000000	0.000007	0.000348	0.003163	0.013752	0.038940
13	7	0.000000	0.000001	0.000061	0.000842	0.004915	0.017578
13	8	0.000000	0.000000	0.000011	0.000220	0.001730	0.007813
13	9	0.000000	0.000000	0.000002	0.000056	0.000598	0.003418
13	10	0.000000	0.000000	0.000000	0.000014	0.000201	0.001465
13	11	0.000000	0.000000	0.000000	0.000003	0.000065	0.000610
13	12	0.000000	0.000000	0.000000	0.000001	0.000020	0.000244
13	13	0.000000	0.000000	0.000000	0.000000	0.000007	0.000122
14	0	0.487675	0.228768	0.043980	0.006782	0.000784	0.000061
14	1	0.481637	0.657714	0.587960	0.359203	0.168795	0.060181
14	2	0.029257	0.102648	0.291211	0.413035	0.403460	0.291809
14	3	0.001365	0.009870	0.062486	0.156937	0.253654	0.299255
14	4	0.000063	0.000909	0.011740	0.046337	0.108250	0.180237
14	5	0.000003	0.000083	0.002150	0.012895	0.041327	0.090637

TABLE 1 (continued)

N	r_+	p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
11	5	0.121997	0.167999	0.175133	0.112755	0.057114	0.010451
11	6	0.067185	0.112943	0.146801	0.127546	0.080860	0.019206
11	7	0.035832	0.071648	0.109052	0.110008	0.075071	0.018921
11	8	0.018812	0.044965	0.080531	0.094703	0.069659	0.018639
11	9	0.009675	0.027844	0.059056	0.081358	0.064601	0.018362
11	10	0.004837	0.016949	0.042950	0.069736	0.059874	0.018088
11	11	0.003628	0.019773	0.085899	0.313811	0.568800	0.895338
12	0	0.000017	0.000001	0.000000	0.000000	0.000000	0.000000
12	1	0.028347	0.005628	0.000520	0.000008	0.000000	0.000000
12	2	0.196503	0.083881	0.020560	0.001463	0.000094	0.000000
12	3	0.273812	0.194458	0.088444	0.015564	0.002233	0.000020
12	4	0.211639	0.214506	0.151290	0.052355	0.014440	0.000599
12	5	0.131053	0.172109	0.162471	0.080305	0.027614	0.001412
12	6	0.074650	0.123531	0.157286	0.132860	0.082698	0.019300
12	7	0.040311	0.079060	0.117441	0.114791	0.076817	0.019014
12	8	0.021499	0.050154	0.087242	0.099007	0.071318	0.018732
12	9	0.011287	0.031476	0.064425	0.085233	0.066176	0.018453
12	10	0.005805	0.019491	0.047245	0.073222	0.061371	0.018178
12	11	0.002902	0.011864	0.034360	0.062762	0.056880	0.017907
12	12	0.002177	0.013841	0.068719	0.282430	0.540360	0.886385
13	0	0.000007	0.000000	0.000000	0.000000	0.000000	0.000000
13	1	0.020675	0.003559	0.000267	0.000003	0.000000	0.000000
13	2	0.174465	0.067712	0.014429	0.000814	0.000043	0.000000
13	3	0.269160	0.178715	0.073306	0.010874	0.001363	0.000010
13	4	0.219260	0.211626	0.137340	0.040492	0.009601	0.000323
13	5	0.140012	0.177829	0.159257	0.072611	0.023636	0.001147
13	6	0.081244	0.129967	0.154028	0.109932	0.057518	0.010531
13	7	0.044790	0.086472	0.125829	0.119574	0.078563	0.019107
13	8	0.024186	0.055342	0.093952	0.103312	0.072976	0.018824
13	9	0.012899	0.035108	0.069793	0.089107	0.067752	0.018544
13	10	0.006772	0.022033	0.051540	0.076709	0.062867	0.018269
13	11	0.003483	0.013644	0.037796	0.065900	0.058302	0.017996
13	12	0.001741	0.008305	0.027488	0.056486	0.054036	0.017728
13	13	0.001306	0.009689	0.054976	0.254187	0.513342	0.877521
14	0	0.000003	0.000000	0.000000	0.000000	0.000000	0.000000
14	1	0.015077	0.002250	0.000136	0.000001	0.000000	0.000000
14	2	0.154264	0.054470	0.010071	0.000439	0.000018	0.000000
14	3	0.262929	0.163226	0.060234	0.007386	0.000776	0.000005
14	4	0.225510	0.207346	0.123724	0.030635	0.005952	0.000134
14	5	0.148351	0.182252	0.154497	0.064255	0.019512	0.000879

TABLE 1 (continued)

N	r+	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
14	6	0.000000	0.000007	0.000389	0.003520	0.015211	0.042664
14	7	0.000000	0.000001	0.000070	0.000949	0.005505	0.019531
14	8	0.000000	0.000000	0.000012	0.000253	0.001966	0.008789
14	9	0.000000	0.000000	0.000002	0.000066	0.000692	0.003906
14	10	0.000000	0.000000	0.000000	0.000017	0.000239	0.001709
14	11	0.000000	0.000000	0.000000	0.000004	0.000081	0.000732
14	12	0.000000	0.000000	0.000000	0.000001	0.000026	0.000305
14	13	0.000000	0.000000	0.000000	0.000000	0.000008	0.000122
14	14	0.000000	0.000000	0.000000	0.000000	0.000003	0.000061
15	0	0.463291	0.205891	0.035184	0.004748	0.000470	0.000031
15	1	0.503708	0.672464	0.575071	0.334385	0.147819	0.048706
15	2	0.031452	0.109882	0.306870	0.424240	0.399569	0.275024
15	3	0.001478	0.010673	0.067244	0.167153	0.265267	0.303955
15	4	0.000068	0.000990	0.012752	0.050084	0.115887	0.189667
15	5	0.000003	0.000091	0.002354	0.014071	0.044822	0.097229
15	6	0.000000	0.000008	0.000430	0.003876	0.016665	0.046356
15	7	0.000000	0.000001	0.000078	0.001056	0.006093	0.021454
15	8	0.000000	0.000000	0.000014	0.000285	0.002202	0.009766
15	9	0.000000	0.000000	0.000002	0.000076	0.000786	0.004395
15	10	0.000000	0.000000	0.000000	0.000020	0.000277	0.001953
15	11	0.000000	0.000000	0.000000	0.000005	0.000096	0.000854
15	12	0.000000	0.000000	0.000000	0.000001	0.000032	0.000366
15	13	0.000000	0.000000	0.000000	0.000000	0.000010	0.000153
15	14	0.000000	0.000000	0.000000	0.000000	0.000003	0.000061
15	15	0.000000	0.000000	0.000000	0.000000	0.000001	0.000031
16	0	0.440127	0.185302	0.028147	0.003323	0.000282	0.000015
16	1	0.524565	0.685001	0.561167	0.310926	0.129390	0.039413
16	2	0.033641	0.117042	0.321825	0.433790	0.394112	0.258316
16	3	0.001590	0.011475	0.071963	0.177086	0.275997	0.307236
16	4	0.000074	0.001071	0.013763	0.053802	0.123339	0.198486
16	5	0.000003	0.000099	0.002559	0.015244	0.048285	0.103638
16	6	0.000000	0.000009	0.000471	0.004233	0.018114	0.050003
16	7	0.000000	0.000001	0.000086	0.001163	0.006680	0.023361
16	8	0.000000	0.000000	0.000016	0.000317	0.002438	0.010742
16	9	0.000000	0.000000	0.000003	0.000085	0.000881	0.004883
16	10	0.000000	0.000000	0.000000	0.000023	0.000315	0.002197
16	11	0.000000	0.000000	0.000000	0.000006	0.000111	0.000977
16	12	0.000000	0.000000	0.000000	0.000002	0.000038	0.000427
16	13	0.000000	0.000000	0.000000	0.000000	0.000013	0.000183
16	14	0.000000	0.000000	0.000000	0.000000	0.000004	0.000076
16	15	0.000000	0.000000	0.000000	0.000000	0.000001	0.000031
16	16	0.000000	0.000000	0.000000	0.000000	0.000000	0.000015

TABLE 1 (continued)

N	r_+	p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
14	6	0.087490	0.135158	0.148021	0.084179	0.030986	0.001672
14	7	0.049269	0.093884	0.134218	0.124357	0.080309	0.019201
14	8	0.026874	0.060530	0.100663	0.107617	0.074635	0.018916
14	9	0.014512	0.038739	0.075162	0.092981	0.069327	0.018636
14	10	0.007740	0.024575	0.055835	0.080196	0.064364	0.018359
14	11	0.004063	0.015423	0.041232	0.069038	0.059724	0.018086
14	12	0.002090	0.009550	0.030237	0.059310	0.055387	0.017816
14	13	0.001045	0.005813	0.021990	0.050837	0.051334	0.017550
14	14	0.000784	0.006782	0.043980	0.228768	0.487675	0.868746
15	0	0.000001	0.000000	0.000000	0.000000	0.000000	0.000000
15	1	0.010995	0.001422	0.000070	0.000000	0.000000	0.000000
15	2	0.135958	0.043718	0.007021	0.000236	0.000007	0.000000
15	3	0.255487	0.148334	0.049203	0.004923	0.000415	0.000002
15	4	0.230528	0.202039	0.110990	0.023067	0.003559	0.000033
15	5	0.156072	0.185379	0.148191	0.055237	0.015242	0.000610
15	6	0.093701	0.141137	0.148062	0.078479	0.027488	0.001413
15	7	0.053434	0.099261	0.133810	0.106263	0.057671	0.010606
15	8	0.029561	0.065719	0.107374	0.111921	0.076293	0.019009
15	9	0.016124	0.042371	0.080531	0.096855	0.070903	0.018727
15	10	0.008707	0.027118	0.060130	0.083683	0.065861	0.018449
15	11	0.004644	0.017203	0.044668	0.072176	0.061146	0.018175
15	12	0.002438	0.010796	0.032985	0.062134	0.056738	0.017905
15	13	0.001254	0.006685	0.024189	0.053379	0.052618	0.017638
15	14	0.000627	0.004069	0.017592	0.045754	0.048767	0.017375
15	15	0.000470	0.004748	0.035184	0.205891	0.463291	0.860058
16	0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
16	1	0.008017	0.000899	0.000036	0.000000	0.000000	0.000000
16	2	0.119508	0.035031	0.004896	0.000129	0.000003	0.000000
16	3	0.247142	0.134269	0.040076	0.003280	0.000219	0.000000
16	4	0.234452	0.196080	0.099689	0.018071	0.002491	0.000020
16	5	0.163173	0.187209	0.140339	0.045556	0.010826	0.000339
16	6	0.099689	0.146481	0.147113	0.072242	0.023858	0.001152
16	7	0.057474	0.104028	0.131644	0.085882	0.033814	0.001925
16	8	0.032249	0.070907	0.114085	0.116226	0.077952	0.019101
16	9	0.017737	0.046003	0.085899	0.100729	0.072479	0.018818
16	10	0.009675	0.029660	0.064425	0.087170	0.067358	0.018540
16	11	0.005224	0.018982	0.048104	0.075315	0.062568	0.018265
16	12	0.002786	0.012042	0.035734	0.064959	0.058089	0.017994
16	13	0.001463	0.007557	0.026388	0.055921	0.053901	0.017726
16	14	0.000752	0.004680	0.019351	0.048041	0.049987	0.017462
16	15	0.000376	0.002849	0.014074	0.041178	0.046329	0.017201
16	16	0.000282	0.003323	0.028147	0.185302	0.440127	0.851458

TABLE 1 (continued)

N	r_+	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
17	0	0.418120	0.166772	0.022518	0.002326	0.000169	0.000008
17	1	0.544269	0.695553	0.546575	0.288866	0.113224	0.031891
17	2	0.035824	0.124130	0.336100	0.441822	0.387375	0.241920
17	3	0.001703	0.012276	0.076645	0.186742	0.285888	0.309250
17	4	0.000080	0.001152	0.014773	0.057491	0.130609	0.206718
17	5	0.000004	0.000107	0.002763	0.016414	0.051716	0.109871
17	6	0.000000	0.000010	0.000512	0.004588	0.019558	0.053604
17	7	0.000000	0.000001	0.000094	0.001270	0.007267	0.025261
17	8	0.000000	0.000000	0.000017	0.000349	0.002674	0.011711
17	9	0.000000	0.000000	0.000003	0.000095	0.000975	0.005371
17	10	0.000000	0.000000	0.000001	0.000026	0.000352	0.002441
17	11	0.000000	0.000000	0.000000	0.000007	0.000126	0.001099
17	12	0.000000	0.000000	0.000000	0.000002	0.000044	0.000488
17	13	0.000000	0.000000	0.000000	0.000000	0.000015	0.000214
17	14	0.000000	0.000000	0.000000	0.000000	0.000005	0.000092
17	15	0.000000	0.000000	0.000000	0.000000	0.000002	0.000038
17	16	0.000000	0.000000	0.000000	0.000000	0.000001	0.000015
17	17	0.000000	0.000000	0.000000	0.000000	0.000000	0.000008
18	0	0.397214	0.150095	0.018014	0.001628	0.000102	0.000004
18	1	0.562878	0.704325	0.531550	0.268199	0.099056	0.025803
18	2	0.038002	0.131145	0.349720	0.448463	0.379606	0.226009
18	3	0.001816	0.013076	0.081290	0.196128	0.294982	0.310135
18	4	0.000085	0.001233	0.015780	0.061153	0.137701	0.214390
18	5	0.000004	0.000115	0.002967	0.017582	0.055117	0.115932
18	6	0.000000	0.000011	0.000553	0.004944	0.020997	0.057159
18	7	0.000000	0.000001	0.000102	0.001378	0.007853	0.027149
18	8	0.000000	0.000000	0.000019	0.000381	0.002909	0.012676
18	9	0.000000	0.000000	0.000003	0.000105	0.001070	0.005859
18	10	0.000000	0.000000	0.000001	0.000029	0.000390	0.002686
18	11	0.000000	0.000000	0.000000	0.000008	0.000141	0.001221
18	12	0.000000	0.000000	0.000000	0.000002	0.000050	0.000549
18	13	0.000000	0.000000	0.000000	0.000001	0.000018	0.000244
18	14	0.000000	0.000000	0.000000	0.000000	0.000006	0.000107
18	15	0.000000	0.000000	0.000000	0.000000	0.000002	0.000046
18	16	0.000000	0.000000	0.000000	0.000000	0.000001	0.000019
18	17	0.000000	0.000000	0.000000	0.000000	0.000000	0.000008
18	18	0.000000	0.000000	0.000000	0.000000	0.000000	0.000004
19	0	0.377354	0.135085	0.014412	0.001140	0.000061	0.000002
19	1	0.580448	0.711502	0.516295	0.248890	0.086648	0.020876
19	2	0.040175	0.138088	0.362708	0.453833	0.371017	0.210703
19	3	0.001928	0.013876	0.085898	0.205249	0.303322	0.310017

TABLE 1 (continued)

N	r_+	p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
17	0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
17	1	0.005846	0.000568	0.000018	0.000000	0.000000	0.000000
17	2	0.104818	0.028028	0.003409	0.000070	0.000001	0.000000
17	3	0.238152	0.121149	0.032609	0.002222	0.000126	0.000000
17	4	0.237348	0.189413	0.088962	0.013869	0.001657	0.000011
17	5	0.169730	0.188170	0.132348	0.037271	0.007423	0.000152
17	6	0.105455	0.151190	0.145174	0.065468	0.020096	0.000888
17	7	0.061502	0.109181	0.133347	0.081743	0.030744	0.001672
17	8	0.034823	0.075098	0.115166	0.102001	0.057604	0.010679
17	9	0.019349	0.049635	0.091268	0.104604	0.074054	0.018910
17	10	0.010642	0.032202	0.068719	0.090656	0.068855	0.018630
17	11	0.005805	0.020762	0.051540	0.078453	0.063990	0.018354
17	12	0.003135	0.013288	0.038483	0.067783	0.059440	0.018082
17	13	0.001672	0.008429	0.028587	0.058463	0.055184	0.017814
17	14	0.000878	0.005290	0.021111	0.050329	0.051206	0.017549
17	15	0.000451	0.003276	0.015481	0.043237	0.047487	0.017287
17	16	0.000226	0.001994	0.011259	0.037060	0.044013	0.017029
17	17	0.000169	0.002326	0.022518	0.166772	0.418120	0.842943
18	0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
18	1	0.004263	0.000359	0.000009	0.000000	0.000000	0.000000
18	2	0.091771	0.022400	0.002373	0.000038	0.000001	0.000000
18	3	0.228713	0.108979	0.026445	0.001487	0.000069	0.000000
18	4	0.239324	0.182286	0.079079	0.010539	0.001065	0.000005
18	5	0.175774	0.188390	0.124499	0.030589	0.005089	0.000050
18	6	0.110997	0.155263	0.142246	0.058158	0.016203	0.000624
18	7	0.065449	0.114023	0.134417	0.077169	0.027555	0.001417
18	8	0.037353	0.078991	0.115122	0.085922	0.036156	0.002171
18	9	0.020962	0.053267	0.096637	0.108478	0.075630	0.019001
18	10	0.011610	0.034744	0.073014	0.094143	0.070352	0.018721
18	11	0.006385	0.022542	0.054976	0.081591	0.065412	0.018444
18	12	0.003483	0.014533	0.041232	0.070607	0.060791	0.018171
18	13	0.001881	0.009301	0.030786	0.061005	0.056468	0.017901
18	14	0.001003	0.005901	0.022870	0.052617	0.052425	0.017636
18	15	0.000527	0.003703	0.016888	0.045296	0.048646	0.017373
18	16	0.000271	0.002293	0.012385	0.038913	0.045113	0.017114
18	17	0.000135	0.001396	0.009007	0.033354	0.041812	0.016859
18	18	0.000102	0.001628	0.018014	0.150095	0.397214	0.834514
19	0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
19	1	0.003108	0.000227	0.000005	0.000000	0.000000	0.000000
19	2	0.080228	0.017888	0.001651	0.000021	0.000000	0.000000
19	3	0.219001	0.097781	0.021401	0.000990	0.000037	0.000000

TABLE 1 (continued)

N	r_+	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
19	4	0.000091	0.001313	0.016787	0.064786	0.144618	0.221525
19	5	0.000004	0.000123	0.003171	0.018748	0.058487	0.121826
19	6	0.000000	0.000012	0.000594	0.005299	0.022430	0.060669
19	7	0.000000	0.000001	0.000111	0.001485	0.008438	0.029026
19	8	0.000000	0.000000	0.000020	0.000413	0.003145	0.013639
19	9	0.000000	0.000000	0.000004	0.000114	0.001164	0.006346
19	10	0.000000	0.000000	0.000001	0.000031	0.000428	0.002930
19	11	0.000000	0.000000	0.000000	0.000009	0.000156	0.001343
19	12	0.000000	0.000000	0.000000	0.000002	0.000056	0.000610
19	13	0.000000	0.000000	0.000000	0.000001	0.000020	0.000275
19	14	0.000000	0.000000	0.000000	0.000000	0.000007	0.000122
19	15	0.000000	0.000000	0.000000	0.000000	0.000002	0.000053
19	16	0.000000	0.000000	0.000000	0.000000	0.000001	0.000023
19	17	0.000000	0.000000	0.000000	0.000000	0.000000	0.000010
19	18	0.000000	0.000000	0.000000	0.000000	0.000000	0.000004
19	19	0.000000	0.000000	0.000000	0.000000	0.000000	0.000002
20	0	0.358486	0.121577	0.011529	0.000798	0.000037	0.000001
20	1	0.597030	0.717249	0.500966	0.230886	0.075786	0.016890
20	2	0.042342	0.144960	0.375088	0.458041	0.361790	0.196081
20	3	0.002041	0.014674	0.090469	0.214110	0.310946	0.309010
20	4	0.000096	0.001394	0.017791	0.068391	0.151363	0.228148
20	5	0.000005	0.000131	0.003376	0.019911	0.061826	0.127555
20	6	0.000000	0.000012	0.000635	0.005655	0.023859	0.064134
20	7	0.000000	0.000001	0.000119	0.001592	0.009022	0.030891
20	8	0.000000	0.000000	0.000022	0.000445	0.003380	0.014600
20	9	0.000000	0.000000	0.000004	0.000124	0.001258	0.006831
20	10	0.000000	0.000000	0.000001	0.000034	0.000466	0.003174
20	11	0.000000	0.000000	0.000000	0.000009	0.000171	0.001465
20	12	0.000000	0.000000	0.000000	0.000003	0.000062	0.000671
20	13	0.000000	0.000000	0.000000	0.000001	0.000023	0.000305
20	14	0.000000	0.000000	0.000000	0.000000	0.000008	0.000137
20	15	0.000000	0.000000	0.000000	0.000000	0.000003	0.000061
20	16	0.000000	0.000000	0.000000	0.000000	0.000001	0.000027
20	17	0.000000	0.000000	0.000000	0.000000	0.000000	0.000011
20	18	0.000000	0.000000	0.000000	0.000000	0.000000	0.000005
20	19	0.000000	0.000000	0.000000	0.000000	0.000000	0.000002
20	20	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001
21	0	0.340562	0.109419	0.009223	0.000559	0.000022	0.000000
21	1	0.612674	0.721717	0.485686	0.214127	0.066282	0.013664
21	2	0.044504	0.151762	0.386881	0.461186	0.352079	0.182193
21	3	0.002154	0.015472	0.095004	0.222719	0.317891	0.307218

TABLE 1 (continued)

N	r_+	p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
19	4	0.240471	0.174854	0.070081	0.007971	0.000672	0.000002
19	5	0.181333	0.187997	0.117075	0.025715	0.003884	0.000034
19	6	0.116316	0.158701	0.138328	0.050311	0.012178	0.000357
19	7	0.069316	0.118554	0.134854	0.072161	0.024247	0.001160
19	8	0.039877	0.083072	0.117554	0.083000	0.033468	0.001924
19	9	0.022533	0.056410	0.098403	0.097342	0.057345	0.010747
19	10	0.012577	0.037287	0.077309	0.097630	0.071848	0.018811
19	11	0.006966	0.024321	0.058412	0.084729	0.066834	0.018534
19	12	0.003831	0.015779	0.043980	0.073432	0.062141	0.018260
19	13	0.002090	0.010173	0.032985	0.063547	0.057751	0.017989
19	14	0.001128	0.006511	0.024629	0.054904	0.053644	0.017722
19	15	0.000602	0.004130	0.018296	0.047355	0.049804	0.017459
19	16	0.000316	0.002592	0.013511	0.040766	0.046213	0.017199
19	17	0.000162	0.001605	0.009908	0.035022	0.042857	0.016943
19	18	0.000081	0.000977	0.007206	0.030019	0.039721	0.016690
19	19	0.000061	0.001140	0.014412	0.135085	0.377354	0.826169
20	0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
20	1	0.002266	0.000144	0.000002	0.000000	0.000000	0.000000
20	2	0.070052	0.014274	0.001149	0.000011	0.000000	0.000000
20	3	0.209157	0.087542	0.017294	0.000661	0.000020	0.000000
20	4	0.240874	0.167246	0.061968	0.006038	0.000428	0.000001
20	5	0.186423	0.186972	0.109636	0.021354	0.002872	0.000021
20	6	0.121429	0.161650	0.134141	0.043429	0.009014	0.000172
20	7	0.073103	0.122774	0.134658	0.066718	0.020821	0.000901
20	8	0.042373	0.087001	0.119582	0.079726	0.030673	0.001674
20	9	0.024089	0.059407	0.099448	0.084706	0.038067	0.002410
20	10	0.013544	0.039829	0.081604	0.101117	0.073345	0.018902
20	11	0.007546	0.026101	0.061848	0.087867	0.068256	0.018623
20	12	0.004179	0.017025	0.046729	0.076256	0.063492	0.018348
20	13	0.002299	0.011045	0.035184	0.066089	0.059034	0.018077
20	14	0.001254	0.007121	0.026388	0.057192	0.054863	0.017809
20	15	0.000677	0.004558	0.019703	0.049414	0.050962	0.017545
20	16	0.000361	0.002891	0.014637	0.042619	0.047314	0.017285
20	17	0.000190	0.001815	0.010809	0.036690	0.043903	0.017027
20	18	0.000097	0.001124	0.007926	0.031520	0.040714	0.016774
20	19	0.000049	0.000684	0.005765	0.027017	0.037735	0.016523
20	20	0.000037	0.000798	0.011529	0.121577	0.358486	0.817907
21	0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
21	1	0.001652	0.000091	0.000001	0.000000	0.000000	0.000000
21	2	0.061104	0.011384	0.000799	0.000006	0.000000	0.000000
21	3	0.199295	0.078225	0.013958	0.000443	0.000011	0.000000

TABLE 1 (continued)

N	r_+	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
21	4	0.000102	0.001475	0.018794	0.071968	0.157940	0.234282
21	5	0.000005	0.000139	0.003580	0.021071	0.065134	0.133122
21	6	0.000000	0.000013	0.000676	0.006010	0.025283	0.067554
21	7	0.000000	0.000001	0.000127	0.001699	0.009605	0.032745
21	8	0.000000	0.000000	0.000024	0.000478	0.003615	0.015557
21	9	0.000000	0.000000	0.000004	0.000134	0.001352	0.007316
21	10	0.000000	0.000000	0.000001	0.000037	0.000503	0.003417
21	11	0.000000	0.000000	0.000000	0.000010	0.000186	0.001587
21	12	0.000000	0.000000	0.000000	0.000003	0.000068	0.000732
21	13	0.000000	0.000000	0.000000	0.000001	0.000025	0.000336
21	14	0.000000	0.000000	0.000000	0.000000	0.000009	0.000153
21	15	0.000000	0.000000	0.000000	0.000000	0.000003	0.000069
21	16	0.000000	0.000000	0.000000	0.000000	0.000001	0.000031
21	17	0.000000	0.000000	0.000000	0.000000	0.000000	0.000013
21	18	0.000000	0.000000	0.000000	0.000000	0.000000	0.000006
21	19	0.000000	0.000000	0.000000	0.000000	0.000000	0.000002
21	20	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001
21	21	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
22	0	0.323534	0.098477	0.007379	0.000391	0.000013	0.000000
22	1	0.627427	0.725040	0.470548	0.198542	0.057967	0.011055
22	2	0.046660	0.158495	0.398108	0.463362	0.342019	0.169065
22	3	0.002266	0.016270	0.099503	0.231080	0.324192	0.304735
22	4	0.000108	0.001556	0.019796	0.075518	0.164352	0.239949
22	5	0.000005	0.000148	0.003784	0.022228	0.068412	0.138531
22	6	0.000000	0.000014	0.000717	0.006364	0.026701	0.070930
22	7	0.000000	0.000001	0.000135	0.001806	0.010188	0.034588
22	8	0.000000	0.000000	0.000025	0.000510	0.003850	0.016512
22	9	0.000000	0.000000	0.000005	0.000143	0.001447	0.007800
22	10	0.000000	0.000000	0.000001	0.000040	0.000541	0.003661
22	11	0.000000	0.000000	0.000000	0.000011	0.000201	0.001709
22	12	0.000000	0.000000	0.000000	0.000003	0.000074	0.000793
22	13	0.000000	0.000000	0.000000	0.000001	0.000027	0.000366
22	14	0.000000	0.000000	0.000000	0.000000	0.000010	0.000168
22	15	0.000000	0.000000	0.000000	0.000000	0.000004	0.000076
22	16	0.000000	0.000000	0.000000	0.000000	0.000001	0.000034
22	17	0.000000	0.000000	0.000000	0.000000	0.000000	0.000015
22	18	0.000000	0.000000	0.000000	0.000000	0.000000	0.000007
22	19	0.000000	0.000000	0.000000	0.000000	0.000000	0.000003
22	20	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001
22	21	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
22	22	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

TABLE 1 (continued)

N	r_+	p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
21	4	0.240609	0.159563	0.054692	0.004595	0.000283	0.000000
21	5	0.191066	0.185401	0.102319	0.017562	0.002061	0.000012
21	6	0.126342	0.164155	0.129829	0.037660	0.006761	0.000070
21	7	0.076810	0.126682	0.133828	0.060840	0.017275	0.000641
21	8	0.044841	0.090778	0.121203	0.076100	0.027771	0.001424
21	9	0.025643	0.062496	0.102078	0.082727	0.035720	0.002169
21	10	0.014497	0.042132	0.083594	0.092446	0.056918	0.010813
21	11	0.008127	0.027880	0.065284	0.091005	0.069678	0.018713
21	12	0.004528	0.018270	0.049478	0.079080	0.064843	0.018437
21	13	0.002508	0.011917	0.037383	0.068630	0.060318	0.018165
21	14	0.001379	0.007732	0.028147	0.059480	0.056083	0.017896
21	15	0.000752	0.004985	0.021111	0.051473	0.052120	0.017631
21	16	0.000406	0.003190	0.015763	0.044472	0.048414	0.017370
21	17	0.000217	0.002024	0.011709	0.038358	0.044948	0.017112
21	18	0.000114	0.001270	0.008647	0.033021	0.041708	0.016857
21	19	0.000058	0.000787	0.006341	0.028368	0.038679	0.016606
21	20	0.000029	0.000479	0.004612	0.024315	0.035849	0.016358
21	21	0.000022	0.000559	0.009223	0.109419	0.340562	0.809728
22	0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
22	1	0.001205	0.000057	0.000001	0.000000	0.000000	0.000000
22	2	0.053255	0.009076	0.000556	0.000003	0.000000	0.000000
22	3	0.189510	0.069781	0.011250	0.000295	0.000006	0.000000
22	4	0.239746	0.151881	0.048161	0.003477	0.000183	0.000000
22	5	0.195287	0.183367	0.095262	0.014395	0.001459	0.000006
22	6	0.131061	0.166258	0.125537	0.033157	0.005469	0.000051
22	7	0.080436	0.130279	0.132365	0.054528	0.013611	0.000379
22	8	0.047279	0.094402	0.122420	0.072121	0.024762	0.001171
22	9	0.027186	0.065511	0.104449	0.080462	0.033276	0.001925
22	10	0.015444	0.044363	0.085121	0.082559	0.039594	0.002643
22	11	0.008707	0.029660	0.068719	0.094143	0.071100	0.018802
22	12	0.004876	0.019516	0.052227	0.081905	0.066194	0.018525
22	13	0.002717	0.012789	0.039582	0.071172	0.061601	0.018252
22	14	0.001505	0.008342	0.029907	0.061767	0.057302	0.017983
22	15	0.000828	0.005412	0.022518	0.053532	0.053278	0.017717
22	16	0.000451	0.003489	0.016888	0.046326	0.049514	0.017455
22	17	0.000244	0.002233	0.012610	0.040025	0.045993	0.017196
22	18	0.000130	0.001417	0.009367	0.034522	0.042701	0.016941
22	19	0.000068	0.000889	0.006918	0.029719	0.039622	0.016689
22	20	0.000035	0.000551	0.005073	0.025531	0.036745	0.016440
22	21	0.000018	0.000335	0.003689	0.021884	0.034056	0.016195
22	22	0.000013	0.000391	0.007379	0.098477	0.323534	0.801631

TABLE 1 (continued)

N	r_+	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
23	0	0.307357	0.088629	0.005903	0.000274	0.000008	0.000000
23	1	0.641335	0.727338	0.455624	0.184064	0.050693	0.008944
23	2	0.048811	0.165158	0.408790	0.464655	0.331721	0.156702
23	3	0.002379	0.017066	0.103966	0.239198	0.329884	0.301648
23	4	0.000113	0.001637	0.020796	0.079041	0.170601	0.245170
23	5	0.000005	0.000156	0.003988	0.023383	0.071661	0.143784
23	6	0.000000	0.000015	0.000758	0.006719	0.028115	0.074263
23	7	0.000000	0.000001	0.000143	0.001913	0.010769	0.036419
23	8	0.000000	0.000000	0.000027	0.000542	0.004085	0.017464
23	9	0.000000	0.000000	0.000005	0.000153	0.001541	0.008284
23	10	0.000000	0.000000	0.000001	0.000043	0.000579	0.003904
23	11	0.000000	0.000000	0.000000	0.000012	0.000216	0.001831
23	12	0.000000	0.000000	0.000000	0.000003	0.000081	0.000854
23	13	0.000000	0.000000	0.000000	0.000001	0.000030	0.000397
23	14	0.000000	0.000000	0.000000	0.000000	0.000011	0.000183
23	15	0.000000	0.000000	0.000000	0.000000	0.000004	0.000084
23	16	0.000000	0.000000	0.000000	0.000000	0.000001	0.000038
23	17	0.000000	0.000000	0.000000	0.000000	0.000001	0.000017
23	18	0.000000	0.000000	0.000000	0.000000	0.000000	0.000008
23	19	0.000000	0.000000	0.000000	0.000000	0.000000	0.000003
23	20	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001
23	21	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001
23	22	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
23	23	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
24	0	0.291989	0.079766	0.004722	0.000192	0.000005	0.000000
24	1	0.654438	0.728721	0.440967	0.170621	0.044331	0.007236
24	2	0.050956	0.171753	0.418946	0.465144	0.321282	0.145099
24	3	0.002491	0.017861	0.108393	0.247079	0.334999	0.298034
24	4	0.000119	0.001718	0.021794	0.082536	0.176690	0.249964
24	5	0.000006	0.000164	0.004192	0.024536	0.074879	0.148886
24	6	0.000000	0.000016	0.000799	0.007073	0.029524	0.077553
24	7	0.000000	0.000001	0.000152	0.002019	0.011350	0.038239
24	8	0.000000	0.000000	0.000029	0.000574	0.004320	0.018413
24	9	0.000000	0.000000	0.000005	0.000163	0.001635	0.008767
24	10	0.000000	0.000000	0.000001	0.000046	0.000617	0.004147
24	11	0.000000	0.000000	0.000000	0.000013	0.000232	0.001953
24	12	0.000000	0.000000	0.000000	0.000004	0.000087	0.000916
24	13	0.000000	0.000000	0.000000	0.000001	0.000032	0.000427
24	14	0.000000	0.000000	0.000000	0.000000	0.000012	0.000198
24	15	0.000000	0.000000	0.000000	0.000000	0.000004	0.000092
24	16	0.000000	0.000000	0.000000	0.000000	0.000002	0.000042
24	17	0.000000	0.000000	0.000000	0.000000	0.000001	0.000019
24	18	0.000000	0.000000	0.000000	0.000000	0.000000	0.000009

TABLE 1 (continued)

N	r_+	p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
23	0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
23	1	0.000879	0.000036	0.000000	0.000000	0.000000	0.000000
23	2	0.046381	0.007233	0.000386	0.000002	0.000000	0.000000
23	3	0.179875	0.062156	0.009058	0.000197	0.000003	0.000000
23	4	0.238348	0.144269	0.042331	0.002623	0.000117	0.000000
23	5	0.199106	0.180932	0.088510	0.011786	0.001030	0.000003
23	6	0.135590	0.167955	0.121039	0.028974	0.004335	0.000035
23	7	0.083986	0.133615	0.130638	0.048875	0.010679	0.000196
23	8	0.049688	0.097874	0.123231	0.067791	0.021645	0.000917
23	9	0.028720	0.068451	0.106561	0.077912	0.030736	0.001680
23	10	0.016391	0.046640	0.087664	0.081305	0.037551	0.002407
23	11	0.009282	0.031322	0.070680	0.087434	0.056345	0.010875
23	12	0.005224	0.020762	0.054976	0.084729	0.067545	0.018614
23	13	0.002926	0.013661	0.041781	0.073714	0.062884	0.018340
23	14	0.001630	0.008953	0.031666	0.064055	0.058521	0.018070
23	15	0.000903	0.005840	0.023925	0.055591	0.054437	0.017803
23	16	0.000497	0.003789	0.018014	0.048179	0.050615	0.017540
23	17	0.000271	0.002443	0.013511	0.041693	0.047039	0.017280
23	18	0.000146	0.001563	0.010088	0.036023	0.043694	0.017024
23	19	0.000078	0.000992	0.007494	0.031070	0.040566	0.016771
23	20	0.000041	0.000622	0.005534	0.026747	0.037641	0.016522
23	21	0.000021	0.000385	0.004058	0.022978	0.034908	0.016276
23	22	0.000011	0.000235	0.002951	0.019695	0.032353	0.016033
23	23	0.000008	0.000274	0.005903	0.088629	0.307357	0.793614
24	0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
24	1	0.000641	0.000023	0.000000	0.000000	0.000000	0.000000
24	2	0.040370	0.005763	0.000269	0.000001	0.000000	0.000000
24	3	0.170451	0.055292	0.007287	0.000131	0.000002	0.000000
24	4	0.236477	0.136784	0.037148	0.001977	0.000075	0.000000
24	5	0.202544	0.178154	0.082089	0.009659	0.000736	0.000001
24	6	0.139932	0.169273	0.116405	0.025152	0.003368	0.000022
24	7	0.087460	0.136705	0.128720	0.043992	0.008523	0.000093
24	8	0.052069	0.101193	0.123637	0.063108	0.018421	0.000661
24	9	0.030242	0.071317	0.108413	0.075077	0.028098	0.001434
24	10	0.017333	0.048880	0.090040	0.079819	0.035420	0.002169
24	11	0.009855	0.032949	0.072345	0.079739	0.040782	0.002868
24	12	0.005573	0.022008	0.057724	0.087553	0.068896	0.018703
24	13	0.003135	0.014533	0.043980	0.076256	0.064168	0.018428
24	14	0.001755	0.009563	0.033425	0.066343	0.059740	0.018157
24	15	0.000978	0.006267	0.025333	0.057650	0.055595	0.017889
24	16	0.000542	0.004088	0.019140	0.050032	0.051715	0.017625
24	17	0.000298	0.002652	0.014412	0.043361	0.048084	0.017365
24	18	0.000162	0.001710	0.010809	0.037524	0.044687	0.017108

TABLE 1 (continued)

N	r_+	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
24	19	0.000000	0.000000	0.000000	0.000000	0.000000	0.000004
24	20	0.000000	0.000000	0.000000	0.000000	0.000000	0.000002
24	21	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001
24	22	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
24	23	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
24	24	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25	0	0.277390	0.071790	0.003778	0.000134	0.000003	0.000000
25	1	0.666779	0.729286	0.426618	0.158145	0.038767	0.005854
25	2	0.053096	0.178280	0.428597	0.464903	0.310782	0.134240
25	3	0.002604	0.018656	0.112784	0.254728	0.339567	0.293963
25	4	0.000125	0.001799	0.022791	0.086004	0.182624	0.254352
25	5	0.000006	0.000172	0.004395	0.025686	0.078068	0.153839
25	6	0.000000	0.000016	0.000839	0.007427	0.030927	0.080801
25	7	0.000000	0.000002	0.000160	0.002126	0.011930	0.040048
25	8	0.000000	0.000000	0.000030	0.000606	0.004554	0.019359
25	9	0.000000	0.000000	0.000006	0.000172	0.001729	0.009249
25	10	0.000000	0.000000	0.000001	0.000049	0.000654	0.004390
25	11	0.000000	0.000000	0.000000	0.000014	0.000247	0.002075
25	12	0.000000	0.000000	0.000000	0.000004	0.000093	0.000977
25	13	0.000000	0.000000	0.000000	0.000001	0.000035	0.000458
25	14	0.000000	0.000000	0.000000	0.000000	0.000013	0.000214
25	15	0.000000	0.000000	0.000000	0.000000	0.000005	0.000099
25	16	0.000000	0.000000	0.000000	0.000000	0.000002	0.000046
25	17	0.000000	0.000000	0.000000	0.000000	0.000001	0.000021
25	18	0.000000	0.000000	0.000000	0.000000	0.000000	0.000010
25	19	0.000000	0.000000	0.000000	0.000000	0.000000	0.000004
25	20	0.000000	0.000000	0.000000	0.000000	0.000000	0.000002
25	21	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001
25	22	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25	23	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25	24	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25	25	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

TABLE 1 (continued)

N	r_+	p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
24	19	0.000088	0.001094	0.008070	0.032420	0.041509	0.016854
24	20	0.000047	0.000694	0.005995	0.027963	0.038537	0.016604
24	21	0.000025	0.000436	0.004427	0.024072	0.035759	0.016357
24	22	0.000013	0.000270	0.003247	0.020680	0.033162	0.016113
24	23	0.000006	0.000164	0.002361	0.017726	0.030736	0.015872
24	24	0.000005	0.000192	0.004722	0.079766	0.291989	0.785678
25	0	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25	1	0.000467	0.000015	0.000000	0.000000	0.000000	0.000000
25	2	0.035122	0.004590	0.000187	0.000001	0.000000	0.000000
25	3	0.161281	0.049128	0.005858	0.000087	0.000001	0.000000
25	4	0.234185	0.129468	0.032555	0.001491	0.000048	0.000000
25	5	0.205621	0.175081	0.076008	0.007923	0.000535	0.000001
25	6	0.144095	0.170242	0.111707	0.021732	0.002573	0.000013
25	7	0.090861	0.139564	0.126685	0.039986	0.007184	0.000071
25	8	0.054420	0.104359	0.123637	0.058074	0.015089	0.000403
25	9	0.031755	0.074107	0.110006	0.071957	0.025364	0.001185
25	10	0.018272	0.051083	0.092251	0.078102	0.033202	0.001930
25	11	0.010428	0.034599	0.074659	0.079037	0.039009	0.002638
25	12	0.005919	0.023196	0.059529	0.082401	0.055647	0.010935
25	13	0.003344	0.015405	0.046179	0.078798	0.065451	0.018516
25	14	0.001881	0.010173	0.035184	0.068630	0.060959	0.018244
25	15	0.001053	0.006694	0.026740	0.059708	0.056753	0.017975
25	16	0.000587	0.004387	0.020266	0.051885	0.052815	0.017710
25	17	0.000325	0.002861	0.015312	0.045028	0.049129	0.017449
25	18	0.000179	0.001856	0.011529	0.039025	0.045680	0.017191
25	19	0.000097	0.001197	0.008647	0.033771	0.042452	0.016936
25	20	0.000053	0.000766	0.006456	0.029178	0.039433	0.016685
25	21	0.000028	0.000486	0.004796	0.025166	0.036610	0.016437
25	22	0.000015	0.000305	0.003542	0.021665	0.033971	0.016193
25	23	0.000008	0.000189	0.002597	0.018612	0.031504	0.015952
25	24	0.000004	0.000115	0.001889	0.015953	0.029199	0.015714
25	25	0.000003	0.000134	0.003778	0.071790	0.277390	0.777821

TABLE 2

UPPER CUMULATIVE PROBABILITY DISTRIBUTION OF THE LENGTH OF THE LONGEST RUN OF +VE SIGNS

TABLE 2

UPPER CUMULATIVE PROBABILITY DISTRIBUTION OF THE LENGTH OF THE LONGEST RUN OF +VE SIGNS

N	r_+	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
2	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
2	1	0.097500	0.190000	0.360000	0.510000	0.640000	0.750000
2	2	0.002500	0.010000	0.040000	0.090000	0.160000	0.250000
3	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
3	1	0.142625	0.271000	0.488000	0.657000	0.784000	0.875000
3	2	0.004875	0.019000	0.072000	0.153000	0.256000	0.375000
3	3	0.000125	0.001000	0.008000	0.027000	0.064000	0.125000
4	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
4	1	0.185494	0.343900	0.590400	0.759900	0.870400	0.937500
4	2	0.007250	0.028000	0.104000	0.216000	0.352000	0.500000
4	3	0.000244	0.001900	0.014400	0.045900	0.102400	0.187500
4	4	0.000006	0.000100	0.001600	0.008100	0.025600	0.062500
5	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
5	1	0.226219	0.409510	0.672320	0.831930	0.922240	0.968750
5	2	0.009619	0.036910	0.134720	0.273330	0.432640	0.593750
5	3	0.000362	0.002800	0.020800	0.064800	0.140800	0.250000
5	4	0.000012	0.000190	0.002880	0.013770	0.040960	0.093750
5	5	0.000000	0.000010	0.000320	0.002430	0.010240	0.031250
6	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
6	1	0.264908	0.468559	0.737856	0.882351	0.953344	0.984375
6	2	0.011982	0.045739	0.164416	0.326691	0.504064	0.671875
6	3	0.000481	0.003700	0.027200	0.083700	0.179200	0.312500
6	4	0.000018	0.000280	0.004160	0.019440	0.056320	0.125000
6	5	0.000001	0.000019	0.000576	0.004131	0.016384	0.046875
6	6	0.000000	0.000001	0.000064	0.000729	0.004096	0.015625
7	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
7	1	0.301663	0.521703	0.790285	0.917646	0.972006	0.992188
7	2	0.014340	0.054487	0.193088	0.376083	0.566272	0.734375
7	3	0.000600	0.004599	0.033549	0.102090	0.215142	0.367188

TABLE 2 (continued)

N	r_+	p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
2	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
2	1	0.840000	0.910000	0.960000	0.990000	0.997500	0.999900
2	2	0.360000	0.490000	0.640000	0.810000	0.902500	0.980100
3	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
3	1	0.936000	0.973000	0.992000	0.999000	0.999875	0.999999
3	2	0.504000	0.637000	0.768000	0.891000	0.947625	0.989901
3	3	0.216000	0.343000	0.512000	0.729000	0.857375	0.970299
4	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
4	1	0.974400	0.991900	0.998400	0.999900	0.999994	1.000000
4	2	0.648000	0.784000	0.896000	0.972000	0.992750	0.999702
4	3	0.302400	0.445900	0.614400	0.801900	0.900244	0.980002
4	4	0.129600	0.240100	0.409600	0.656100	0.814506	0.960596
5	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
5	1	0.989760	0.997570	0.999680	0.999990	1.000000	1.000000
5	2	0.740160	0.858970	0.942080	0.987390	0.997150	0.999897
5	3	0.388800	0.548800	0.716800	0.874800	0.943112	0.989705
5	4	0.181440	0.312130	0.491520	0.721710	0.855232	0.970202
5	5	0.077760	0.168070	0.327680	0.590490	0.773781	0.950990
6	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
6	1	0.995904	0.999271	0.999936	0.999999	1.000000	1.000000
6	2	0.811584	0.912331	0.971776	0.996219	0.999513	0.999996
6	3	0.475200	0.651700	0.819200	0.947700	0.985981	0.999408
6	4	0.233280	0.384160	0.573440	0.787320	0.895957	0.979808
6	5	0.108864	0.218491	0.393216	0.649539	0.812470	0.960500
6	6	0.046656	0.117649	0.262144	0.531441	0.735092	0.941480
7	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
7	1	0.998362	0.999781	0.999987	1.000000	1.000000	1.000000
7	2	0.862272	0.944083	0.985088	0.998487	0.999840	0.999999
7	3	0.542938	0.719305	0.869171	0.967456	0.992095	0.999696

TABLE 2 (continued)

N	r_+	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
7	4	0.000024	0.000370	0.005440	0.025110	0.071680	0.156250
7	5	0.000001	0.000028	0.000832	0.005832	0.022528	0.062500
7	6	0.000000	0.000002	0.000115	0.001239	0.006554	0.023438
7	7	0.000000	0.000000	0.000013	0.000219	0.001638	0.007813
8	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
8	1	0.336580	0.569533	0.832228	0.942352	0.983204	0.996094
8	2	0.016692	0.063155	0.220777	0.421863	0.620739	0.785156
8	3	0.000719	0.005497	0.039857	0.120122	0.249610	0.417969
8	4	0.000030	0.000460	0.006720	0.030780	0.087040	0.187500
8	5	0.000001	0.000037	0.001088	0.007533	0.028672	0.078125
8	6	0.000000	0.000003	0.000166	0.001750	0.009011	0.031250
8	7	0.000000	0.000000	0.000023	0.000372	0.002621	0.011719
8	8	0.000000	0.000000	0.000003	0.000066	0.000655	0.003906
9	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
9	1	0.369751	0.612580	0.865782	0.959646	0.989922	0.998047
9	2	0.019039	0.071743	0.247516	0.464282	0.668348	0.826172
9	3	0.000837	0.006395	0.046124	0.137797	0.282604	0.464844
9	4	0.000036	0.000550	0.007998	0.036404	0.102007	0.216797
9	5	0.000001	0.000046	0.001344	0.009234	0.034816	0.093750
9	6	0.000000	0.000004	0.000218	0.002260	0.011469	0.039063
9	7	0.000000	0.000000	0.000033	0.000525	0.003604	0.015625
9	8	0.000000	0.000000	0.000005	0.000112	0.001049	0.005859
9	9	0.000000	0.000000	0.000001	0.000020	0.000262	0.001953
10	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
10	1	0.401263	0.651322	0.892626	0.971752	0.993953	0.999023
10	2	0.021380	0.080253	0.273337	0.503588	0.709986	0.859375
10	3	0.000956	0.007292	0.052349	0.155116	0.314122	0.507813
10	4	0.000042	0.000640	0.009274	0.041996	0.116738	0.245117
10	5	0.000002	0.000055	0.001600	0.010935	0.040960	0.109375
10	6	0.000000	0.000005	0.000269	0.002770	0.013926	0.046875
10	7	0.000000	0.000000	0.000044	0.000678	0.004588	0.019531
10	8	0.000000	0.000000	0.000007	0.000157	0.001442	0.007813
10	9	0.000000	0.000000	0.000001	0.000033	0.000419	0.002930
10	10	0.000000	0.000000	0.000000	0.000006	0.000105	0.000977
11	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
11	1	0.431200	0.686189	0.914101	0.980227	0.996372	0.999512
11	2	0.023715	0.088684	0.298272	0.540011	0.746395	0.886230
11	3	0.001075	0.008187	0.058535	0.172086	0.344261	0.547363
11	4	0.000048	0.000730	0.010549	0.047556	0.131233	0.272461

TABLE 2 (continued)

N	r_+	p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
7	4	0.285120	0.456190	0.655360	0.852930	0.936682	0.989414
7	5	0.139968	0.268912	0.458752	0.708588	0.851159	0.970010
7	6	0.065318	0.152944	0.314573	0.584585	0.771846	0.950895
7	7	0.027994	0.082354	0.209715	0.478297	0.698337	0.932065
8	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
8	1	0.999345	0.999934	0.999997	1.000000	1.000000	1.000000
8	2	0.899689	0.964814	0.992502	0.999508	0.999969	1.000000
8	3	0.603210	0.776322	0.908657	0.981897	0.996372	0.999890
8	4	0.336960	0.528220	0.737280	0.918540	0.977407	0.999020
8	5	0.171072	0.319333	0.524288	0.767637	0.889848	0.979520
8	6	0.083981	0.188238	0.367002	0.637729	0.808601	0.960310
8	7	0.039191	0.107061	0.251658	0.526127	0.733254	0.941386
8	8	0.016796	0.057648	0.167772	0.430467	0.663420	0.922745
9	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
9	1	0.999738	0.999980	0.999999	1.000000	1.000000	1.000000
9	2	0.926821	0.977702	0.996114	0.999815	0.999991	1.000000
9	3	0.656018	0.822751	0.937656	0.991024	0.998811	0.999990
9	4	0.382082	0.582956	0.785646	0.941103	0.984962	0.999398
9	5	0.202176	0.369754	0.589824	0.826686	0.928537	0.989030
9	6	0.102643	0.223533	0.419430	0.690873	0.845356	0.969725
9	7	0.050388	0.131767	0.293601	0.573956	0.768171	0.950707
9	8	0.023515	0.074942	0.201327	0.473514	0.696591	0.931972
9	9	0.010078	0.040354	0.134218	0.387420	0.630249	0.913517
10	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
10	1	0.999895	0.999994	1.000000	1.000000	1.000000	1.000000
10	2	0.946654	0.985922	0.998023	0.999937	0.999998	1.000000
10	3	0.701361	0.858591	0.956170	0.994837	0.999411	0.999996
10	4	0.424516	0.632503	0.827300	0.959362	0.990858	0.999685
10	5	0.233280	0.420175	0.655360	0.885735	0.967226	0.998540
10	6	0.121306	0.258828	0.471859	0.744017	0.882110	0.979139
10	7	0.061586	0.156473	0.335544	0.621786	0.803088	0.960027
10	8	0.030233	0.092237	0.234881	0.516561	0.729762	0.941200
10	9	0.014109	0.052460	0.161061	0.426163	0.661762	0.922652
10	10	0.006047	0.028248	0.107374	0.348678	0.598737	0.904382
11	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
11	1	0.999958	0.999998	1.000000	1.000000	1.000000	1.000000
11	2	0.961098	0.991094	0.998983	0.999977	0.999999	1.000000
11	3	0.740851	0.887474	0.969567	0.997210	0.999750	0.999999
11	4	0.464262	0.676862	0.862244	0.973316	0.995095	0.999879

TABLE 2 (continued)

N	r_+	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
11	5	0.000002	0.000064	0.001856	0.012632	0.047041	0.124512
11	6	0.000000	0.000006	0.000320	0.003281	0.016384	0.054688
11	7	0.000000	0.000000	0.000054	0.000831	0.005571	0.023438
11	8	0.000000	0.000000	0.000009	0.000203	0.001835	0.009766
11	9	0.000000	0.000000	0.000001	0.000047	0.000577	0.003906
11	10	0.000000	0.000000	0.000000	0.000010	0.000168	0.001465
11	11	0.000000	0.000000	0.000000	0.000002	0.000042	0.000488
12	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
12	1	0.459640	0.717570	0.931281	0.986159	0.997823	0.999756
12	2	0.026045	0.097039	0.322351	0.573761	0.778234	0.907959
12	3	0.001193	0.009082	0.064680	0.188716	0.373076	0.583740
12	4	0.000054	0.000820	0.011822	0.053083	0.145492	0.298828
12	5	0.000002	0.000073	0.002112	0.014326	0.053084	0.139404
12	6	0.000000	0.000006	0.000371	0.003791	0.018842	0.062500
12	7	0.000000	0.000001	0.000064	0.000984	0.006554	0.027344
12	8	0.000000	0.000000	0.000011	0.000249	0.002228	0.011719
12	9	0.000000	0.000000	0.000002	0.000061	0.000734	0.004883
12	10	0.000000	0.000000	0.000000	0.000014	0.000231	0.001953
12	11	0.000000	0.000000	0.000000	0.000003	0.000067	0.000732
12	12	0.000000	0.000000	0.000000	0.000001	0.000017	0.000244
13	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
13	1	0.486658	0.745813	0.945024	0.990311	0.998694	0.999878
13	2	0.028369	0.105316	0.345605	0.605035	0.806075	0.925537
13	3	0.001312	0.009977	0.070784	0.205011	0.400624	0.617187
13	4	0.000060	0.000910	0.013093	0.058579	0.159515	0.324219
13	5	0.000003	0.000082	0.002368	0.016017	0.059090	0.154053
13	6	0.000000	0.000007	0.000422	0.004301	0.021289	0.070190
13	7	0.000000	0.000001	0.000074	0.001137	0.007537	0.031250
13	8	0.000000	0.000000	0.000013	0.000295	0.002621	0.013672
13	9	0.000000	0.000000	0.000002	0.000075	0.000891	0.005859
13	10	0.000000	0.000000	0.000000	0.000018	0.000294	0.002441
13	11	0.000000	0.000000	0.000000	0.000004	0.000092	0.000977
13	12	0.000000	0.000000	0.000000	0.000001	0.000027	0.000366
13	13	0.000000	0.000000	0.000000	0.000000	0.000007	0.000122
14	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
14	1	0.512325	0.771232	0.956020	0.993218	0.999216	0.999939
14	2	0.030688	0.113518	0.368060	0.634015	0.830421	0.939758
14	3	0.001431	0.010870	0.076849	0.220980	0.426961	0.647949
14	4	0.000066	0.001000	0.014363	0.064042	0.173308	0.348694
14	5	0.000003	0.000091	0.002623	0.017705	0.065058	0.168457

TABLE 2 (continued)

N	r_+	p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
11	5	0.261965	0.462122	0.699421	0.909916	0.975978	0.999006
11	6	0.139968	0.294122	0.524288	0.797162	0.918865	0.988554
11	7	0.072783	0.181179	0.377487	0.669616	0.838005	0.969348
11	8	0.036952	0.109531	0.268435	0.559607	0.762933	0.950427
11	9	0.018140	0.064566	0.187905	0.464905	0.693274	0.931788
11	10	0.008465	0.036722	0.128849	0.383546	0.628674	0.913426
11	11	0.003628	0.019773	0.085899	0.313811	0.568800	0.895338
12	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
12	1	0.999983	0.999999	1.000000	1.000000	1.000000	1.000000
12	2	0.971636	0.994372	0.999480	0.999992	1.000000	1.000000
12	3	0.775133	0.910491	0.978921	0.998529	0.999906	1.000000
12	4	0.501322	0.716032	0.890477	0.982965	0.997673	0.999980
12	5	0.289683	0.501526	0.739187	0.930611	0.983234	0.999381
12	6	0.158630	0.329417	0.576717	0.850306	0.955619	0.997969
12	7	0.083981	0.205886	0.419430	0.717445	0.872922	0.978669
12	8	0.043670	0.126826	0.301990	0.602654	0.796105	0.959654
12	9	0.022171	0.076672	0.214748	0.503647	0.724787	0.940923
12	10	0.010884	0.045196	0.150324	0.418414	0.658611	0.922470
12	11	0.005079	0.025705	0.103079	0.345192	0.597240	0.904292
12	12	0.002177	0.013841	0.068719	0.282430	0.540360	0.886385
13	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
13	1	0.999993	1.000000	1.000000	1.000000	1.000000	1.000000
13	2	0.979318	0.996441	0.999733	0.999997	1.000000	1.000000
13	3	0.804854	0.928730	0.985305	0.999184	0.999957	1.000000
13	4	0.535694	0.750015	0.911999	0.988310	0.998593	0.999990
13	5	0.316434	0.538388	0.774659	0.947818	0.988992	0.999666
13	6	0.176422	0.360560	0.615402	0.875207	0.965356	0.998520
13	7	0.095178	0.230592	0.461373	0.765275	0.907838	0.987989
13	8	0.050388	0.144120	0.335544	0.645701	0.829276	0.968882
13	9	0.026202	0.088778	0.241592	0.542389	0.756299	0.950058
13	10	0.013303	0.053670	0.171799	0.453282	0.688547	0.931514
13	11	0.006530	0.031637	0.120259	0.376573	0.625680	0.913245
13	12	0.003047	0.017994	0.082463	0.310672	0.567378	0.895249
13	13	0.001306	0.009689	0.054976	0.254187	0.513342	0.877521
14	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
14	1	0.999997	1.000000	1.000000	1.000000	1.000000	1.000000
14	2	0.984920	0.997750	0.999864	0.999999	1.000000	1.000000
14	3	0.830656	0.943281	0.989793	0.999560	0.999982	1.000000
14	4	0.567727	0.780054	0.929559	0.992174	0.999206	0.999995
14	5	0.342217	0.572708	0.805835	0.961539	0.993254	0.999861

TABLE 2 (continued)

N	r_+	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
14	6	0.000000	0.000008	0.000474	0.004810	0.023731	0.077820
14	7	0.000000	0.000001	0.000084	0.001290	0.008520	0.035156
14	8	0.000000	0.000000	0.000015	0.000341	0.003015	0.015625
14	9	0.000000	0.000000	0.000003	0.000089	0.001049	0.006836
14	10	0.000000	0.000000	0.000000	0.000022	0.000357	0.002930
14	11	0.000000	0.000000	0.000000	0.000005	0.000117	0.001221
14	12	0.000000	0.000000	0.000000	0.000001	0.000037	0.000488
14	13	0.000000	0.000000	0.000000	0.000000	0.000011	0.000183
14	14	0.000000	0.000000	0.000000	0.000000	0.000003	0.000061
15	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
15	1	0.536709	0.794109	0.964816	0.995252	0.999530	0.999969
15	2	0.033001	0.121645	0.389745	0.660868	0.851711	0.951263
15	3	0.001549	0.011763	0.082875	0.236627	0.452142	0.676239
15	4	0.000072	0.001090	0.015631	0.069474	0.186875	0.372284
15	5	0.000003	0.000100	0.002879	0.019390	0.070988	0.182617
15	6	0.000000	0.000009	0.000525	0.005320	0.026166	0.085388
15	7	0.000000	0.000001	0.000095	0.001443	0.009501	0.039032
15	8	0.000000	0.000000	0.000017	0.000387	0.003408	0.017578
15	9	0.000000	0.000000	0.000003	0.000102	0.001206	0.007813
15	10	0.000000	0.000000	0.000001	0.000027	0.000419	0.003418
15	11	0.000000	0.000000	0.000000	0.000007	0.000143	0.001465
15	12	0.000000	0.000000	0.000000	0.000002	0.000047	0.000610
15	13	0.000000	0.000000	0.000000	0.000000	0.000015	0.000244
15	14	0.000000	0.000000	0.000000	0.000000	0.000004	0.000092
15	15	0.000000	0.000000	0.000000	0.000000	0.000001	0.000031
16	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
16	1	0.559873	0.814698	0.971853	0.996677	0.999718	0.999985
16	2	0.035309	0.129697	0.410685	0.685750	0.870328	0.960571
16	3	0.001668	0.012655	0.088861	0.251961	0.476216	0.702255
16	4	0.000077	0.001180	0.016898	0.074875	0.200219	0.395020
16	5	0.000004	0.000109	0.003135	0.021073	0.076880	0.196533
16	6	0.000000	0.000010	0.000576	0.005829	0.028595	0.092896
16	7	0.000000	0.000001	0.000105	0.001596	0.010482	0.042892
16	8	0.000000	0.000000	0.000019	0.000433	0.003801	0.019531
16	9	0.000000	0.000000	0.000003	0.000116	0.001363	0.008789
16	10	0.000000	0.000000	0.000001	0.000031	0.000482	0.003906
16	11	0.000000	0.000000	0.000000	0.000008	0.000168	0.001709
16	12	0.000000	0.000000	0.000000	0.000002	0.000057	0.000732
16	13	0.000000	0.000000	0.000000	0.000000	0.000019	0.000305
16	14	0.000000	0.000000	0.000000	0.000000	0.000006	0.000122
16	15	0.000000	0.000000	0.000000	0.000000	0.000002	0.000046
16	16	0.000000	0.000000	0.000000	0.000000	0.000000	0.000015

TABLE 2 (continued)

N	r+	p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
14	6	0.193865	0.390456	0.651338	0.897284	0.973742	0.998982
14	7	0.106376	0.255298	0.503316	0.813105	0.942755	0.997310
14	8	0.057107	0.161414	0.369099	0.688748	0.862447	0.978109
14	9	0.030233	0.100884	0.268435	0.581131	0.787812	0.959193
14	10	0.015721	0.062145	0.193274	0.488150	0.718484	0.940557
14	11	0.007982	0.037569	0.137439	0.407954	0.654120	0.922198
14	12	0.003918	0.022146	0.096207	0.338915	0.594396	0.904113
14	13	0.001828	0.012596	0.065971	0.279605	0.539009	0.886296
14	14	0.000784	0.006782	0.043980	0.228768	0.487675	0.868746
15	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
15	1	0.999999	1.000000	1.000000	1.000000	1.000000	1.000000
15	2	0.989004	0.998578	0.999930	1.000000	1.000000	1.000000
15	3	0.853046	0.954860	0.992909	0.999763	0.999993	1.000000
15	4	0.597560	0.806525	0.943706	0.994840	0.999578	0.999998
15	5	0.367032	0.604486	0.832716	0.971773	0.996019	0.999966
15	6	0.210961	0.419107	0.684525	0.916536	0.980777	0.999356
15	7	0.117260	0.277970	0.536463	0.838058	0.953288	0.997943
15	8	0.063825	0.178709	0.402653	0.731794	0.895618	0.987337
15	9	0.034264	0.112990	0.295279	0.619873	0.819324	0.968328
15	10	0.018140	0.070619	0.214748	0.523018	0.748421	0.949601
15	11	0.009433	0.043501	0.154619	0.439335	0.682560	0.931152
15	12	0.004789	0.026298	0.109951	0.367158	0.621414	0.912976
15	13	0.002351	0.015502	0.076966	0.305024	0.564676	0.895071
15	14	0.001097	0.008817	0.052777	0.251645	0.512059	0.877433
15	15	0.000470	0.004748	0.035184	0.205891	0.463291	0.860058
16	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
16	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
16	2	0.991983	0.999101	0.999964	1.000000	1.000000	1.000000
16	3	0.872475	0.964070	0.995068	0.999871	0.999997	1.000000
16	4	0.625332	0.829801	0.954991	0.996591	0.999778	1.000000
16	5	0.390880	0.633721	0.855302	0.978520	0.997287	0.999979
16	6	0.227707	0.446512	0.714964	0.932964	0.986460	0.999641
16	7	0.128018	0.300031	0.567851	0.860723	0.962602	0.998489
16	8	0.070544	0.196003	0.436208	0.774841	0.928789	0.996564
16	9	0.038295	0.125096	0.322123	0.658615	0.850837	0.977463
16	10	0.020558	0.079093	0.236223	0.557886	0.778358	0.958645
16	11	0.010884	0.049433	0.171799	0.470716	0.711000	0.940105
16	12	0.005660	0.030451	0.123695	0.395401	0.648432	0.921840
16	13	0.002873	0.018409	0.087961	0.330443	0.590343	0.903847
16	14	0.001411	0.010852	0.061573	0.274522	0.536442	0.886121
16	15	0.000658	0.006172	0.042221	0.226480	0.486456	0.868659
16	16	0.000282	0.003323	0.028147	0.185302	0.440127	0.851458

TABLE 2 (continued)

N	r_+	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
17	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
17	1	0.581880	0.833228	0.977482	0.997674	0.999831	0.999992
17	2	0.037611	0.137675	0.430907	0.708807	0.886607	0.968102
17	3	0.001787	0.013546	0.094808	0.266986	0.499232	0.726181
17	4	0.000083	0.001270	0.018163	0.080244	0.213344	0.416931
17	5	0.000004	0.000118	0.003390	0.022752	0.082735	0.210213
17	6	0.000000	0.000011	0.000627	0.006338	0.031019	0.100342
17	7	0.000000	0.000001	0.000115	0.001749	0.011461	0.046738
17	8	0.000000	0.000000	0.000021	0.000479	0.004194	0.021477
17	9	0.000000	0.000000	0.000004	0.000130	0.001520	0.009766
17	10	0.000000	0.000000	0.000001	0.000035	0.000545	0.004395
17	11	0.000000	0.000000	0.000000	0.000009	0.000193	0.001953
17	12	0.000000	0.000000	0.000000	0.000002	0.000067	0.000854
17	13	0.000000	0.000000	0.000000	0.000001	0.000023	0.000366
17	14	0.000000	0.000000	0.000000	0.000000	0.000008	0.000153
17	15	0.000000	0.000000	0.000000	0.000000	0.000002	0.000061
17	16	0.000000	0.000000	0.000000	0.000000	0.000001	0.000023
17	17	0.000000	0.000000	0.000000	0.000000	0.000000	0.000008
18	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
18	1	0.602786	0.849905	0.981986	0.998372	0.999898	0.999996
18	2	0.039907	0.145581	0.450436	0.730173	0.900843	0.974194
18	3	0.001905	0.014436	0.100716	0.281709	0.521236	0.748184
18	4	0.000089	0.001360	0.019426	0.085582	0.226254	0.438049
18	5	0.000004	0.000127	0.003646	0.024429	0.088553	0.223660
18	6	0.000000	0.000012	0.000678	0.006846	0.033436	0.107727
18	7	0.000000	0.000001	0.000125	0.001902	0.012440	0.050568
18	8	0.000000	0.000000	0.000023	0.000525	0.004587	0.023418
18	9	0.000000	0.000000	0.000004	0.000144	0.001678	0.010742
18	10	0.000000	0.000000	0.000001	0.000039	0.000608	0.004883
18	11	0.000000	0.000000	0.000000	0.000010	0.000218	0.002197
18	12	0.000000	0.000000	0.000000	0.000003	0.000077	0.000977
18	13	0.000000	0.000000	0.000000	0.000001	0.000027	0.000427
18	14	0.000000	0.000000	0.000000	0.000000	0.000009	0.000183
18	15	0.000000	0.000000	0.000000	0.000000	0.000003	0.000076
18	16	0.000000	0.000000	0.000000	0.000000	0.000001	0.000031
18	17	0.000000	0.000000	0.000000	0.000000	0.000000	0.000011
18	18	0.000000	0.000000	0.000000	0.000000	0.000000	0.000004
19	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
19	1	0.622646	0.864915	0.985588	0.998860	0.999939	0.999998
19	2	0.042199	0.153413	0.469294	0.749971	0.913291	0.979122
19	3	0.002024	0.015325	0.106586	0.296137	0.542274	0.768419

TABLE 2 (continued)

N	r_+	p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
17	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
17	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
17	2	0.994154	0.999432	0.999982	1.000000	1.000000	1.000000
17	3	0.889336	0.971404	0.996572	0.999930	0.999999	1.000000
17	4	0.651184	0.850255	0.963964	0.997709	0.999873	1.000000
17	5	0.413836	0.660842	0.875001	0.983840	0.998216	0.999989
17	6	0.244106	0.472672	0.742654	0.946568	0.990793	0.999837
17	7	0.138651	0.321482	0.597480	0.881100	0.970697	0.998949
17	8	0.077149	0.212301	0.464133	0.799357	0.939953	0.997277
17	9	0.042326	0.137202	0.348966	0.697357	0.882349	0.986599
17	10	0.022977	0.087567	0.257698	0.592753	0.808295	0.967689
17	11	0.012335	0.055365	0.188979	0.502097	0.739440	0.949059
17	12	0.006530	0.034603	0.137439	0.423644	0.675450	0.930704
17	13	0.003396	0.021316	0.098956	0.355861	0.616010	0.912622
17	14	0.001724	0.012886	0.070369	0.297398	0.560826	0.894808
17	15	0.000846	0.007596	0.049258	0.247069	0.509620	0.877260
17	16	0.000395	0.004320	0.033777	0.203832	0.462133	0.859972
17	17	0.000169	0.002326	0.022518	0.166772	0.418120	0.842943
18	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
18	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
18	2	0.995737	0.999641	0.999991	1.000000	1.000000	1.000000
18	3	0.903967	0.977240	0.997618	0.999962	0.999999	1.000000
18	4	0.675254	0.868262	0.971173	0.998476	0.999930	1.000000
18	5	0.435930	0.685975	0.892094	0.987937	0.998865	0.999995
18	6	0.260156	0.497585	0.767595	0.957348	0.993775	0.999945
18	7	0.149159	0.342322	0.625349	0.899190	0.977573	0.999321
18	8	0.083710	0.228299	0.490932	0.822021	0.950018	0.997905
18	9	0.046357	0.149308	0.375810	0.736099	0.913862	0.995734
18	10	0.025396	0.096042	0.279173	0.627621	0.838232	0.976733
18	11	0.013786	0.061297	0.206158	0.533478	0.767880	0.958012
18	12	0.007401	0.038756	0.151183	0.451887	0.702468	0.939568
18	13	0.003918	0.024222	0.109951	0.381280	0.641678	0.921397
18	14	0.002037	0.014921	0.079165	0.320275	0.585210	0.903496
18	15	0.001034	0.009020	0.056295	0.267658	0.532785	0.885860
18	16	0.000508	0.005317	0.039406	0.222362	0.484139	0.868487
18	17	0.000237	0.003024	0.027022	0.183449	0.439026	0.851373
18	18	0.000102	0.001628	0.018014	0.150095	0.397214	0.834514
19	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
19	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
19	2	0.996892	0.999773	0.999995	1.000000	1.000000	1.000000
19	3	0.916664	0.981885	0.998344	0.999979	1.000000	1.000000

TABLE 2 (continued)

N	r_+	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
19	4	0.000095	0.001449	0.020687	0.090888	0.238952	0.458403
19	5	0.000004	0.000136	0.003901	0.026103	0.094334	0.236877
19	6	0.000000	0.000013	0.000730	0.007355	0.035847	0.115051
19	7	0.000000	0.000001	0.000136	0.002055	0.013417	0.054382
19	8	0.000000	0.000000	0.000025	0.000571	0.004979	0.025356
19	9	0.000000	0.000000	0.000005	0.000157	0.001835	0.011717
19	10	0.000000	0.000000	0.000001	0.000043	0.000671	0.005371
19	11	0.000000	0.000000	0.000000	0.000012	0.000243	0.002441
19	12	0.000000	0.000000	0.000000	0.000003	0.000087	0.001099
19	13	0.000000	0.000000	0.000000	0.000001	0.000031	0.000488
19	14	0.000000	0.000000	0.000000	0.000000	0.000011	0.000214
19	15	0.000000	0.000000	0.000000	0.000000	0.000004	0.000092
19	16	0.000000	0.000000	0.000000	0.000000	0.000001	0.000038
19	17	0.000000	0.000000	0.000000	0.000000	0.000000	0.000015
19	18	0.000000	0.000000	0.000000	0.000000	0.000000	0.000006
19	19	0.000000	0.000000	0.000000	0.000000	0.000000	0.000002
20	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
20	1	0.641514	0.878423	0.988471	0.999202	0.999963	0.999999
20	2	0.044484	0.161174	0.487505	0.768316	0.924177	0.983109
20	3	0.002142	0.016214	0.112417	0.310275	0.562388	0.787028
20	4	0.000101	0.001539	0.021947	0.096165	0.251442	0.478019
20	5	0.000005	0.000145	0.004156	0.027774	0.100078	0.249870
20	6	0.000000	0.000014	0.000781	0.007863	0.038253	0.122315
20	7	0.000000	0.000001	0.000146	0.002208	0.014394	0.058182
20	8	0.000000	0.000000	0.000027	0.000617	0.005372	0.027290
20	9	0.000000	0.000000	0.000005	0.000171	0.001992	0.012691
20	10	0.000000	0.000000	0.000001	0.000047	0.000734	0.005859
20	11	0.000000	0.000000	0.000000	0.000013	0.000268	0.002686
20	12	0.000000	0.000000	0.000000	0.000004	0.000097	0.001221
20	13	0.000000	0.000000	0.000000	0.000001	0.000035	0.000549
20	14	0.000000	0.000000	0.000000	0.000000	0.000012	0.000244
20	15	0.000000	0.000000	0.000000	0.000000	0.000004	0.000107
20	16	0.000000	0.000000	0.000000	0.000000	0.000001	0.000046
20	17	0.000000	0.000000	0.000000	0.000000	0.000000	0.000019
20	18	0.000000	0.000000	0.000000	0.000000	0.000000	0.000008
20	19	0.000000	0.000000	0.000000	0.000000	0.000000	0.000003
20	20	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001
21	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
21	1	0.659438	0.890581	0.990777	0.999441	0.999978	1.000000
21	2	0.046764	0.168864	0.505091	0.785315	0.933696	0.986335
21	3	0.002261	0.017102	0.118210	0.324129	0.581617	0.804142

TABLE 2 (continued)

N	r_+	p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
19	4	0.697663	0.884104	0.976943	0.998989	0.999962	1.000000
19	5	0.457191	0.709250	0.906862	0.991018	0.999291	0.999998
19	6	0.275858	0.521253	0.789787	0.965303	0.995407	0.999964
19	7	0.159542	0.362552	0.651459	0.914992	0.983229	0.999607
19	8	0.090225	0.243998	0.516605	0.842831	0.958982	0.998447
19	9	0.050348	0.160926	0.399050	0.759832	0.925513	0.996524
19	10	0.027814	0.104516	0.300648	0.662489	0.868169	0.985776
19	11	0.015237	0.067229	0.223338	0.564859	0.796320	0.966965
19	12	0.008272	0.042908	0.164927	0.480130	0.729486	0.948432
19	13	0.004441	0.027129	0.120946	0.406699	0.667345	0.930172
19	14	0.002351	0.016956	0.087961	0.343152	0.609594	0.912183
19	15	0.001222	0.010445	0.063332	0.288248	0.555949	0.894461
19	16	0.000621	0.006314	0.045036	0.240893	0.506146	0.877002
19	17	0.000305	0.003722	0.031525	0.200126	0.459932	0.859802
19	18	0.000142	0.002117	0.021617	0.165104	0.417075	0.842859
19	19	0.000061	0.001140	0.014412	0.135085	0.377354	0.826169
20	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
20	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
20	2	0.997734	0.999856	0.999998	1.000000	1.000000	1.000000
20	3	0.927682	0.985582	0.998849	0.999989	1.000000	1.000000
20	4	0.718525	0.898040	0.981555	0.999328	0.999980	1.000000
20	5	0.477651	0.730795	0.919587	0.993289	0.999552	0.999999
20	6	0.291228	0.543822	0.809951	0.971935	0.996680	0.999978
20	7	0.169799	0.382172	0.675810	0.928507	0.987666	0.999806
20	8	0.096696	0.259398	0.541152	0.861789	0.966845	0.998905
20	9	0.054322	0.172397	0.421570	0.782063	0.936172	0.997230
20	10	0.030233	0.112990	0.322123	0.697357	0.898105	0.994820
20	11	0.016689	0.073161	0.240518	0.596240	0.824760	0.975919
20	12	0.009142	0.047060	0.178671	0.508373	0.756504	0.957296
20	13	0.004963	0.030036	0.131941	0.432117	0.693012	0.938947
20	14	0.002664	0.018990	0.096757	0.366029	0.633977	0.920871
20	15	0.001411	0.011869	0.070369	0.308837	0.579114	0.903061
20	16	0.000733	0.007311	0.050665	0.259423	0.528152	0.885516
20	17	0.000372	0.004420	0.036029	0.216803	0.480838	0.868231
20	18	0.000183	0.002605	0.025220	0.180114	0.436936	0.851204
20	19	0.000085	0.001482	0.017294	0.148594	0.396221	0.834430
20	20	0.000037	0.000798	0.011529	0.121577	0.358486	0.817907
21	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
21	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
21	2	0.998348	0.999909	0.999999	1.000000	1.000000	1.000000
21	3	0.937243	0.988525	0.999200	0.999994	1.000000	1.000000

TABLE 2 (continued)

N	r_+	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
21	4	0.000107	0.001629	0.023206	0.101410	0.263726	0.496924
21	5	0.000005	0.000154	0.004411	0.029442	0.105786	0.262642
21	6	0.000000	0.000014	0.000832	0.008371	0.040652	0.129520
21	7	0.000000	0.000001	0.000156	0.002361	0.015369	0.061966
21	8	0.000000	0.000000	0.000029	0.000663	0.005764	0.029221
21	9	0.000000	0.000000	0.000005	0.000185	0.002149	0.013663
21	10	0.000000	0.000000	0.000001	0.000051	0.000797	0.006347
21	11	0.000000	0.000000	0.000000	0.000014	0.000294	0.002930
21	12	0.000000	0.000000	0.000000	0.000004	0.000107	0.001343
21	13	0.000000	0.000000	0.000000	0.000001	0.000039	0.000610
21	14	0.000000	0.000000	0.000000	0.000000	0.000014	0.000275
21	15	0.000000	0.000000	0.000000	0.000000	0.000005	0.000122
21	16	0.000000	0.000000	0.000000	0.000000	0.000002	0.000053
21	17	0.000000	0.000000	0.000000	0.000000	0.000001	0.000023
21	18	0.000000	0.000000	0.000000	0.000000	0.000000	0.000010
21	19	0.000000	0.000000	0.000000	0.000000	0.000000	0.000004
21	20	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001
21	21	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
22	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
22	1	0.676466	0.901523	0.992621	0.999609	0.999987	1.000000
22	2	0.049039	0.176483	0.522073	0.801067	0.942020	0.988945
22	3	0.002379	0.017989	0.123966	0.337705	0.600002	0.819880
22	4	0.000113	0.001719	0.024463	0.106625	0.275809	0.515145
22	5	0.000005	0.000163	0.004667	0.031107	0.111458	0.275196
22	6	0.000000	0.000015	0.000883	0.008878	0.043045	0.136665
22	7	0.000000	0.000001	0.000166	0.002514	0.016344	0.065735
22	8	0.000000	0.000000	0.000031	0.000709	0.006157	0.031147
22	9	0.000000	0.000000	0.000006	0.000199	0.002307	0.014635
22	10	0.000000	0.000000	0.000001	0.000056	0.000860	0.006835
22	11	0.000000	0.000000	0.000000	0.000015	0.000319	0.003174
22	12	0.000000	0.000000	0.000000	0.000004	0.000117	0.001465
22	13	0.000000	0.000000	0.000000	0.000001	0.000043	0.000671
22	14	0.000000	0.000000	0.000000	0.000000	0.000016	0.000305
22	15	0.000000	0.000000	0.000000	0.000000	0.000006	0.000137
22	16	0.000000	0.000000	0.000000	0.000000	0.000002	0.000061
22	17	0.000000	0.000000	0.000000	0.000000	0.000001	0.000027
22	18	0.000000	0.000000	0.000000	0.000000	0.000000	0.000011
22	19	0.000000	0.000000	0.000000	0.000000	0.000000	0.000005
22	20	0.000000	0.000000	0.000000	0.000000	0.000000	0.000002
22	21	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001
22	22	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

TABLE 2 (continued)

N	r_+	p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
21	4	0.737948	0.910300	0.985242	0.999551	0.999989	1.000000
21	5	0.497339	0.750737	0.930550	0.994956	0.999706	1.000000
21	6	0.306273	0.565336	0.828231	0.977394	0.997645	0.999988
21	7	0.179931	0.401181	0.698402	0.939734	0.990884	0.999918
21	8	0.103121	0.274499	0.564573	0.878893	0.973609	0.999277
21	9	0.058280	0.183721	0.443370	0.802794	0.945838	0.997854
21	10	0.032637	0.121225	0.341292	0.720067	0.910118	0.995685
21	11	0.018140	0.079093	0.257698	0.627621	0.853200	0.984872
21	12	0.010013	0.051213	0.192415	0.536616	0.783522	0.966160
21	13	0.005485	0.032942	0.142937	0.457536	0.718679	0.947723
21	14	0.002978	0.021025	0.105553	0.388905	0.658361	0.929558
21	15	0.001599	0.013293	0.077406	0.329426	0.602279	0.911662
21	16	0.000846	0.008308	0.056295	0.277953	0.550158	0.894031
21	17	0.000440	0.005118	0.040532	0.233481	0.501744	0.876661
21	18	0.000223	0.003094	0.028823	0.195123	0.456796	0.859549
21	19	0.000110	0.001824	0.020176	0.162102	0.415089	0.842692
21	20	0.000051	0.001037	0.013835	0.133734	0.376410	0.826086
21	21	0.000022	0.000559	0.009223	0.109419	0.340562	0.809728
22	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
22	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
22	2	0.998795	0.999943	0.999999	1.000000	1.000000	1.000000
22	3	0.945541	0.990867	0.999444	0.999997	1.000000	1.000000
22	4	0.756031	0.921086	0.988194	0.999702	0.999994	1.000000
22	5	0.516285	0.769205	0.940033	0.996224	0.999811	1.000000
22	6	0.320998	0.585838	0.844771	0.981830	0.998352	0.999994
22	7	0.189937	0.419580	0.719234	0.948673	0.992883	0.999943
22	8	0.109501	0.289301	0.586869	0.894145	0.979272	0.999564
22	9	0.062222	0.194899	0.464449	0.822024	0.954510	0.998393
22	10	0.035035	0.129388	0.359999	0.741561	0.921234	0.996468
22	11	0.019591	0.085025	0.274878	0.659002	0.881640	0.993825
22	12	0.010884	0.055365	0.206158	0.564859	0.810540	0.975023
22	13	0.006008	0.035849	0.153932	0.482955	0.744346	0.956498
22	14	0.003291	0.023060	0.114349	0.411782	0.682745	0.938245
22	15	0.001787	0.014717	0.084442	0.350015	0.625443	0.920262
22	16	0.000959	0.009305	0.061924	0.296483	0.572165	0.902545
22	17	0.000508	0.005816	0.045036	0.250158	0.522650	0.885090
22	18	0.000264	0.003583	0.032426	0.210132	0.476657	0.867894
22	19	0.000134	0.002166	0.023058	0.175611	0.433957	0.850954
22	20	0.000066	0.001277	0.016141	0.145892	0.394335	0.834265
22	21	0.000031	0.000726	0.011068	0.120361	0.357590	0.817825
22	22	0.000013	0.000391	0.007379	0.098477	0.323534	0.801631

TABLE 2 (continued)

N	r_+	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
23	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
23	1	0.692643	0.911371	0.994097	0.999726	0.999992	1.000000
23	2	0.051309	0.184033	0.538473	0.815663	0.949299	0.991056
23	3	0.002498	0.018875	0.129683	0.351008	0.617578	0.834354
23	4	0.000119	0.001809	0.025718	0.111810	0.287694	0.532706
23	5	0.000006	0.000172	0.004922	0.032769	0.117094	0.287537
23	6	0.000000	0.000016	0.000934	0.009386	0.045433	0.143752
23	7	0.000000	0.000002	0.000177	0.002667	0.017318	0.069489
23	8	0.000000	0.000000	0.000033	0.000754	0.006549	0.033070
23	9	0.000000	0.000000	0.000006	0.000213	0.002464	0.015606
23	10	0.000000	0.000000	0.000001	0.000060	0.000923	0.007322
23	11	0.000000	0.000000	0.000000	0.000017	0.000344	0.003418
23	12	0.000000	0.000000	0.000000	0.000005	0.000128	0.001587
23	13	0.000000	0.000000	0.000000	0.000001	0.000047	0.000732
23	14	0.000000	0.000000	0.000000	0.000000	0.000017	0.000336
23	15	0.000000	0.000000	0.000000	0.000000	0.000006	0.000153
23	16	0.000000	0.000000	0.000000	0.000000	0.000002	0.000069
23	17	0.000000	0.000000	0.000000	0.000000	0.000001	0.000031
23	18	0.000000	0.000000	0.000000	0.000000	0.000000	0.000013
23	19	0.000000	0.000000	0.000000	0.000000	0.000000	0.000006
23	20	0.000000	0.000000	0.000000	0.000000	0.000000	0.000002
23	21	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001
23	22	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
23	23	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
24	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
24	1	0.708011	0.920234	0.995278	0.999808	0.999995	1.000000
24	2	0.053573	0.191513	0.554310	0.829188	0.955664	0.992764
24	3	0.002616	0.019760	0.135364	0.364043	0.634383	0.847665
24	4	0.000125	0.001899	0.026971	0.116964	0.299384	0.549631
24	5	0.000006	0.000181	0.005177	0.034428	0.122693	0.299667
24	6	0.000000	0.000017	0.000985	0.009893	0.047814	0.150781
24	7	0.000000	0.000002	0.000187	0.002820	0.018290	0.073227
24	8	0.000000	0.000000	0.000035	0.000800	0.006940	0.034988
24	9	0.000000	0.000000	0.000007	0.000226	0.002621	0.016576
24	10	0.000000	0.000000	0.000001	0.000064	0.000986	0.007809
24	11	0.000000	0.000000	0.000000	0.000018	0.000369	0.003662
24	12	0.000000	0.000000	0.000000	0.000005	0.000138	0.001709
24	13	0.000000	0.000000	0.000000	0.000001	0.000051	0.000793
24	14	0.000000	0.000000	0.000000	0.000000	0.000019	0.000366
24	15	0.000000	0.000000	0.000000	0.000000	0.000007	0.000168
24	16	0.000000	0.000000	0.000000	0.000000	0.000002	0.000076
24	17	0.000000	0.000000	0.000000	0.000000	0.000001	0.000034
24	18	0.000000	0.000000	0.000000	0.000000	0.000000	0.000015

TABLE 2 (continued)

N	r_+	p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
23	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
23	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
23	2	0.999121	0.999964	1.000000	1.000000	1.000000	1.000000
23	3	0.952741	0.992731	0.999613	0.999998	1.000000	1.000000
23	4	0.772865	0.930575	0.990555	0.999802	0.999997	1.000000
23	5	0.534517	0.786306	0.948225	0.997179	0.999880	1.000000
23	6	0.335411	0.605374	0.859715	0.985392	0.998849	0.999997
23	7	0.199821	0.437419	0.738676	0.956419	0.994514	0.999962
23	8	0.115835	0.303804	0.608038	0.907543	0.983835	0.999766
23	9	0.066147	0.205931	0.484807	0.839752	0.962190	0.998849
23	10	0.037428	0.137479	0.378246	0.761840	0.931454	0.997169
23	11	0.021037	0.090840	0.290582	0.680536	0.893903	0.994763
23	12	0.011755	0.059518	0.219902	0.593102	0.837558	0.983887
23	13	0.006530	0.038756	0.164927	0.508373	0.770013	0.965273
23	14	0.003605	0.025094	0.123145	0.434659	0.707129	0.946933
23	15	0.001975	0.016142	0.091479	0.370604	0.648608	0.928863
23	16	0.001072	0.010302	0.067554	0.315013	0.594171	0.911060
23	17	0.000576	0.006514	0.049540	0.266835	0.543556	0.893520
23	18	0.000305	0.004071	0.036029	0.225142	0.496518	0.876239
23	19	0.000158	0.002508	0.025941	0.189119	0.452824	0.859215
23	20	0.000080	0.001516	0.018447	0.158050	0.412259	0.842444
23	21	0.000039	0.000894	0.012913	0.131303	0.374618	0.825922
23	22	0.000018	0.000508	0.008854	0.108325	0.339710	0.809647
23	23	0.000008	0.000274	0.005903	0.088629	0.307357	0.793614
24	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
24	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
24	2	0.999359	0.999977	1.000000	1.000000	1.000000	1.000000
24	3	0.958989	0.994214	0.999731	0.999999	1.000000	1.000000
24	4	0.788539	0.938923	0.992444	0.999868	0.999998	1.000000
24	5	0.552062	0.802139	0.955296	0.997891	0.999924	1.000000
24	6	0.349518	0.623985	0.873207	0.988232	0.999188	0.999999
24	7	0.209585	0.454712	0.756802	0.963080	0.995820	0.999976
24	8	0.122125	0.318008	0.628082	0.919089	0.987297	0.999883
24	9	0.070056	0.216815	0.504445	0.855980	0.968877	0.999222
24	10	0.039814	0.145499	0.396032	0.780903	0.940778	0.997789
24	11	0.022481	0.096619	0.305991	0.701084	0.905358	0.995619
24	12	0.012625	0.063670	0.233646	0.621345	0.864576	0.992751
24	13	0.007053	0.041662	0.175922	0.533792	0.795680	0.974048
24	14	0.003918	0.027129	0.131941	0.457536	0.731512	0.955620
24	15	0.002163	0.017566	0.098516	0.391193	0.671772	0.937464
24	16	0.001185	0.011299	0.073183	0.333544	0.616177	0.919574
24	17	0.000643	0.007212	0.054043	0.283512	0.564462	0.901949
24	18	0.000345	0.004560	0.039632	0.240151	0.516379	0.884585

TABLE 2 (continued)

N	r_+	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
24	19	0.000000	0.000000	0.000000	0.000000	0.000000	0.000007
24	20	0.000000	0.000000	0.000000	0.000000	0.000000	0.000003
24	21	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001
24	22	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
24	23	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
24	24	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
25	1	0.722610	0.928210	0.996222	0.999866	0.999997	1.000000
25	2	0.055831	0.198925	0.569604	0.841721	0.961230	0.994146
25	3	0.002735	0.020645	0.141007	0.376817	0.650448	0.859906
25	4	0.000131	0.001989	0.028223	0.122089	0.310882	0.565943
25	5	0.000006	0.000190	0.005432	0.036085	0.128258	0.311591
25	6	0.000000	0.000018	0.001037	0.010400	0.050189	0.157752
25	7	0.000000	0.000002	0.000197	0.002973	0.019262	0.076951
25	8	0.000000	0.000000	0.000037	0.000846	0.007332	0.036903
25	9	0.000000	0.000000	0.000007	0.000240	0.002778	0.017545
25	10	0.000000	0.000000	0.000001	0.000068	0.001049	0.008296
25	11	0.000000	0.000000	0.000000	0.000019	0.000394	0.003906
25	12	0.000000	0.000000	0.000000	0.000005	0.000148	0.001831
25	13	0.000000	0.000000	0.000000	0.000001	0.000055	0.000854
25	14	0.000000	0.000000	0.000000	0.000000	0.000020	0.000397
25	15	0.000000	0.000000	0.000000	0.000000	0.000008	0.000183
25	16	0.000000	0.000000	0.000000	0.000000	0.000003	0.000084
25	17	0.000000	0.000000	0.000000	0.000000	0.000001	0.000038
25	18	0.000000	0.000000	0.000000	0.000000	0.000000	0.000017
25	19	0.000000	0.000000	0.000000	0.000000	0.000000	0.000008
25	20	0.000000	0.000000	0.000000	0.000000	0.000000	0.000003
25	21	0.000000	0.000000	0.000000	0.000000	0.000000	0.000001
25	22	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25	23	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25	24	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25	25	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

TABLE 2 (continued)

N	r_+	p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
24	19	0.000183	0.002850	0.028823	0.202628	0.471692	0.867477
24	20	0.000095	0.001755	0.020753	0.170207	0.430183	0.850623
24	21	0.000048	0.001061	0.014757	0.142245	0.391646	0.834020
24	22	0.000024	0.000626	0.010330	0.118173	0.355887	0.817663
24	23	0.000011	0.000356	0.007084	0.097492	0.322725	0.801550
24	24	0.000005	0.000192	0.004722	0.079766	0.291989	0.785678
25	0	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
25	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
25	2	0.999533	0.999985	1.000000	1.000000	1.000000	1.000000
25	3	0.964411	0.995395	0.999813	0.999999	1.000000	1.000000
25	4	0.803130	0.946267	0.993955	0.999912	0.999999	1.000000
25	5	0.568945	0.816799	0.961400	0.998421	0.999951	1.000000
25	6	0.363325	0.641718	0.885392	0.990499	0.999416	0.999999
25	7	0.219230	0.471476	0.773685	0.968767	0.996843	0.999986
25	8	0.128369	0.331913	0.647000	0.928781	0.989659	0.999915
25	9	0.073949	0.227554	0.523362	0.870707	0.974570	0.999512
25	10	0.042195	0.153446	0.413356	0.798750	0.949206	0.998326
25	11	0.023922	0.102364	0.321105	0.720648	0.916004	0.996396
25	12	0.013494	0.067765	0.246446	0.641611	0.876995	0.993758
25	13	0.007575	0.044569	0.186917	0.559210	0.821347	0.982824
25	14	0.004232	0.029164	0.140737	0.480413	0.755896	0.964308
25	15	0.002351	0.018990	0.105553	0.411782	0.694937	0.946064
25	16	0.001298	0.012296	0.078813	0.352074	0.638184	0.928089
25	17	0.000711	0.007909	0.058547	0.300189	0.585368	0.910379
25	18	0.000386	0.005048	0.043235	0.255161	0.536239	0.892930
25	19	0.000207	0.003192	0.031705	0.216136	0.490560	0.875739
25	20	0.000110	0.001995	0.023058	0.182365	0.448107	0.858802
25	21	0.000057	0.001229	0.016602	0.153187	0.408674	0.842117
25	22	0.000029	0.000743	0.011806	0.128020	0.372064	0.825680
25	23	0.000014	0.000438	0.008264	0.106355	0.338093	0.809487
25	24	0.000007	0.000249	0.005667	0.087743	0.306588	0.793535
25	25	0.000003	0.000134	0.003778	0.071790	0.277390	0.777821

TABLE 3

MEAN, VARIANCE, STANDARD DEVIATION AND UPPER PERCENTILES OF THE DISTRIBUTION OF THE LENGTH OF THE LONGEST RUN OF +VE SIGNS

TABLE 3

MEAN, VARIANCE, STANDARD DEVIATION AND UPPER PERCENTILES OF THE DISTRIBUTION OF THE LENGTH OF THE LONGEST RUN OF +VE SIGNS

N		p= 0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
	$E(R_+)$	0.781314	1.149978	1.741768	2.391131	3.132055	4.036356
25	$V(R_+)$	0.294303	0.321613	0.637441	1.042681	1.650234	2.667271
	$S(R_+)$	0.542497	0.567110	0.798399	1.021117	1.284614	1.633178
25	$^+U50\%$	(2).05583	(2).19892	(3).14101	(3).37682	(4).31088	(5).31159
25	$^+U25\%$	(2).05583	(2).19892	(3).14101	(4).12209	(5).12826	(6).15775
25	$^+U10\%$	(2).05583	(3).02064	(4).02822	(5).03609	(6).05019	(7).07695
25	$^+U\ 5\%$	(3).00273	(3).02064	(4).02822	(5).03609	(7).01926	(8).03690
25	$^+U\ 2\%$	(3).00273	(4).00199	(5).00543	(6).01040	(7).01926	(9).01754
25	$^+U\ 1\%$	(3).00273	(4).00199	(5).00543	(7).00297	(8).00733	(10).00830
	$E(R_+)$	0.797561	1.165485	1.764468	2.422776	3.173115	4.090650
26	$V(R_+)$	0.289916	0.320059	0.642725	1.046961	1.661030	2.691060
	$S(R_+)$	0.538438	0.565738	0.801702	1.023211	1.288810	1.640445
26	$^+U50\%$	(2).05808	(2).20627	(3).14661	(3).38933	(4).32219	(5).32331
26	$^+U25\%$	(2).05808	(2).20627	(3).14661	(4).12718	(5).13379	(6).16467
26	$^+U10\%$	(2).05808	(3).02153	(4).02947	(5).03774	(6).05256	(7).08066
26	$^+U\ 5\%$	(3).00285	(3).02153	(4).02947	(5).03774	(7).02023	(8).03881
26	$^+U\ 2\%$	(3).00285	(4).00208	(5).00569	(6).01091	(8).00772	(9).01851
26	$^+U\ 1\%$	(3).00285	(4).00208	(5).00569	(7).00313	(8).00772	(10).00878
	$E(R_+)$	0.813110	1.180205	1.786473	2.453272	3.212662	4.142980
27	$V(R_+)$	0.285428	0.318956	0.647601	1.050813	1.671282	2.713386
	$S(R_+)$	0.534255	0.564762	0.804737	1.025091	1.292781	1.647236
27	$^+U50\%$	(2).06033	(2).21354	(3).15218	(3).40160	(4).33331	(5).33483
27	$^+U25\%$	(2).06033	(2).21354	(3).15218	(4).13225	(5).13928	(6).17152
27	$^+U10\%$	(2).06033	(3).02241	(4).03072	(5).03939	(6).05492	(7).08435
27	$^+U\ 5\%$	(3).00297	(3).02241	(4).03072	(5).03939	(7).02120	(8).04072
27	$^+U\ 2\%$	(3).00297	(4).00217	(5).00594	(6).01141	(8).00812	(9).01948
27	$^+U\ 1\%$	(3).00297	(4).00217	(5).00594	(7).00328	(8).00812	(10).00927

TABLE 3 (continued)

N		p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
	$E(R_+)$	5.217484	6.880637	9.480196	14.222522	18.376091	23.395665
25	$V(R_+)$	4.450247	7.855144	14.906210	27.961826	30.688298	12.253499
	$S(R_+)$	2.109561	2.802703	3.860856	5.287894	5.539702	3.500500
25	$^+U50\%$	(6).36332	(7).47148	(10).41336	(14).48041	(19).49056	(**)******
25	$^+U25\%$	(7).21923	(9).22755	(12).24645	(19).21614	(**)******	(**)******
25	$^+U10\%$	(9).07395	(12).06776	(16).07881	(24).08774	(**)******	(**)******
25	^+U 5%	(10).04219	(13).04457	(18).04323	(**)******	(**)******	(**)******
25	^+U 2%	(12).01349	(15).01899	(21).01660	(**)******	(**)******	(**)******
25	^+U 1%	(13).00758	(17).00791	(23).00826	(**)******	(**)******	(**)******
	$E(R_+)$	5.291254	6.986329	9.648912	14.560342	18.926152	24.275505
26	$V(R_+)$	4.503535	7.993446	15.351211	29.600493	33.237067	13.577769
	$S(R_+)$	2.122153	2.827268	3.918062	5.440634	5.765160	3.684802
26	$^+U50\%$	(6).37684	(7).48772	(10).43022	(15).43237	(20).46603	(**)******
26	$^+U25\%$	(7).22876	(9).23815	(13).19791	(19).22964	(**)******	(**)******
26	$^+U10\%$	(9).07783	(12).07184	(16).08444	(24).09572	(**)******	(**)******
26	^+U 5%	(10).04457	(13).04748	(18).04684	(**)******	(**)******	(**)******
26	^+U 2%	(12).01436	(16).01329	(21).01845	(**)******	(**)******	(**)******
26	^+U 1%	(13).00810	(17).00861	(23).00944	(**)******	(**)******	(**)******
	$E(R_+)$	5.362346	7.088173	9.811329	14.885009	19.459024	25.147312
27	$V(R_+)$	4.553599	8.123548	15.773503	31.240476	35.945395	15.083473
	$S(R_+)$	2.133916	2.850184	3.971587	5.589318	5.995448	3.883745
27	$^+U50\%$	(6).39007	(8).35888	(10).44662	(15).45296	(20).48396	(**)******
27	$^+U25\%$	(7).23817	(9).24859	(13).20830	(19).24315	(**)******	(**)******
27	$^+U10\%$	(9).08169	(12).07590	(16).09007	(25).08615	(**)******	(**)******
27	^+U 5%	(10).04694	(14).03323	(19).03747	(**)******	(**)******	(**)******
27	^+U 2%	(12).01523	(16).01429	(22).01476	(**)******	(**)******	(**)******
27	^+U 1%	(13).00862	(17).00931	(24).00756	(**)******	(**)******	(**)******

TABLE 3 (continued)

N		p= 0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
	$E(R_+)$	0.827994	1.194212	1.807828	2.482692	3.250804	4.193483
28	$V(R_+)$	0.280883	0.318275	0.652071	1.054309	1.681038	2.734376
	$S(R_+)$	0.529984	0.564159	0.807509	1.026796	1.296549	1.653595
28	$^+U50\%$	(2).06257	(2).22075	(3).15772	(3).41362	(4).34426	(5).34616
28	$^+U25\%$	(2).06257	(2).22075	(3).15772	(4).13729	(5).14474	(6).17832
28	$^+U10\%$	(2).06257	(3).02329	(4).03197	(5).04104	(6).05728	(7).08803
28	^+U 5%	(3).00309	(3).02329	(4).03197	(5).04104	(7).02217	(8).04263
28	^+U 2%	(3).00309	(4).00226	(5).00620	(6).01192	(8).00851	(10).00976
28	^+U 1%	(3).00309	(4).00226	(5).00620	(7).00343	(8).00851	(10).00976
	$E(R_+)$	0.842247	1.207570	1.828577	2.511100	3.287640	4.242285
29	$V(R_+)$	0.276316	0.317983	0.656141	1.057513	1.690335	2.754142
	$S(R_+)$	0.525657	0.563900	0.810026	1.028355	1.300129	1.659561
29	$^+U50\%$	(2).06481	(2).22790	(3).16322	(3).42540	(4).35502	(5).35729
29	$^+U25\%$	(2).06481	(2).22790	(3).16322	(4).14229	(5).15016	(6).18507
29	$^+U10\%$	(2).06481	(3).02418	(4).03321	(5).04268	(6).05963	(7).09170
29	^+U 5%	(3).00321	(3).02418	(4).03321	(5).04268	(7).02314	(8).04453
29	^+U 2%	(3).00321	(4).00235	(5).00645	(6).01242	(8).00890	(10).01024
29	^+U 1%	(3).00321	(4).00235	(5).00645	(7).00358	(8).00890	(11).00488
	$E(R_+)$	0.855900	1.220339	1.848754	2.538557	3.323260	4.289496
30	$V(R_+)$	0.271759	0.318051	0.659826	1.060479	1.699205	2.772786
	$S(R_+)$	0.521305	0.563960	0.812297	1.029796	1.303535	1.665169
30	$^+U50\%$	(2).06704	(2).23498	(3).16868	(3).43694	(4).36560	(5).36823
30	$^+U25\%$	(2).06704	(2).23498	(3).16868	(4).14727	(5).15555	(6).19176
30	$^+U10\%$	(2).06704	(3).02506	(4).03446	(5).04433	(6).06198	(7).09535
30	^+U 5%	(3).00333	(3).02506	(4).03446	(5).04433	(7).02411	(8).04642
30	^+U 2%	(3).00333	(4).00244	(5).00671	(6).01293	(8).00929	(10).01073
30	^+U 1%	(3).00333	(4).00244	(5).00671	(7).00374	(8).00929	(11).00512
	$E(R_+)$	0.868983	1.232571	1.868392	2.565119	3.357743	4.335215
31	$V(R_+)$	0.267240	0.318446	0.663140	1.063252	1.707673	2.790402
	$S(R_+)$	0.516952	0.564310	0.814334	1.031141	1.306780	1.670450
31	$^+U50\%$	(2).06927	(2).24199	(3).17410	(3).44825	(4).37601	(5).37899
31	$^+U25\%$	(2).06927	(2).24199	(3).17410	(4).15222	(5).16091	(6).19839
31	$^+U10\%$	(2).06927	(3).02594	(4).03570	(5).04597	(6).06432	(7).09898
31	^+U 5%	(3).00345	(3).02594	(4).03570	(5).04597	(7).02507	(8).04831
31	^+U 2%	(3).00345	(4).00253	(5).00696	(6).01343	(8).00968	(10).01121
31	^+U 1%	(3).00345	(4).00253	(5).00696	(7).00389	(8).00968	(11).00537

TABLE 3 (continued)

N		p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
	$E(R_+)$	5.430946	7.186453	9.968291	15.202618	19.987318	26.018710
28	$V(R_+)$	4.600743	8.246365	16.177360	32.859447	38.653470	16.591261
	$S(R_+)$	2.144934	2.871648	4.022109	5.732316	6.217191	4.073237
28	$^+U50\%$	(6).40301	(8).37196	(10).46256	(15).47355	(21).45976	(**)******
28	$^+U25\%$	(7).24746	(10).17686	(13).21857	(20).21884	(28).23783	(**)******
28	$^+U10\%$	(9).08553	(12).07995	(16).09570	(25).09333	(**)******	(**)******
28	^+U 5%	(10).04930	(14).03527	(19).04035	(**)******	(**)******	(**)******
28	^+U 2%	(12).01610	(16).01529	(22).01623	(**)******	(**)******	(**)******
28	^+U 1%	(13).00914	(18).00651	(24).00850	(**)******	(**)******	(**)******
	$E(R_+)$	5.497223	7.281401	10.119838	15.508780	20.499858	26.882232
29	$V(R_+)$	4.645227	8.362357	16.561122	34.468485	41.501130	18.287356
	$S(R_+)$	2.155279	2.891774	4.069536	5.870987	6.442137	4.276372
29	$^+U50\%$	(6).41568	(8).38476	(10).47804	(15).49414	(21).47679	(**)******
29	$^+U25\%$	(8).15291	(10).18452	(13).22872	(20).23100	(28).24972	(**)******
29	$^+U10\%$	(9).08936	(12).08397	(17).07656	(26).08399	(**)******	(**)******
29	^+U 5%	(11).02967	(14).03729	(19).04323	(29).04710	(**)******	(**)******
29	^+U 2%	(12).01696	(16).01628	(22).01771	(**)******	(**)******	(**)******
29	^+U 1%	(13).00966	(18).00700	(24).00944	(**)******	(**)******	(**)******
	$E(R_+)$	5.561328	7.373243	10.266601	15.808515	21.008059	27.745350
30	$V(R_+)$	4.687285	8.472200	16.928160	36.051948	44.341452	19.984714
	$S(R_+)$	2.165014	2.910704	4.114385	6.004327	6.658938	4.470427
30	$^+U50\%$	(6).42809	(8).39731	(10).49306	(16).44472	(21).49381	(**)******
30	$^+U25\%$	(8).15893	(10).19211	(13).23875	(20).24315	(29).23723	(**)******
30	$^+U10\%$	(9).09317	(12).08798	(17).08106	(26).09046	(**)******	(**)******
30	^+U 5%	(11).03110	(14).03931	(19).04612	(30).04239	(**)******	(**)******
30	^+U 2%	(12).01783	(16).01728	(22).01918	(**)******	(**)******	(**)******
30	^+U 1%	(14).00580	(18).00749	(25).00756	(**)******	(**)******	(**)******
	$E(R_+)$	5.623400	7.462169	10.408613	16.097828	21.501277	28.600670
31	$V(R_+)$	4.727119	8.576294	17.277549	37.622038	47.314158	21.879220
	$S(R_+)$	2.174194	2.928531	4.156627	6.133681	6.878529	4.677523
31	$^+U50\%$	(6).44023	(8).40960	(11).40559	(16).46326	(22).46912	(**)******
31	$^+U25\%$	(8).16492	(10).19962	(13).24866	(21).21884	(29).24853	(**)******
31	$^+U10\%$	(9).09697	(12).09197	(17).08557	(26).09692	(**)******	(**)******
31	^+U 5%	(11).03253	(14).04132	(19).04900	(30).04663	(**)******	(**)******
31	^+U 2%	(12).01869	(16).01828	(23).01535	(**)******	(**)******	(**)******
31	^+U 1%	(14).00611	(18).00798	(25).00831	(**)******	(**)******	(**)******

TABLE 3 (continued)

N		p= 0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
	$E(R_+)$	0.881524	1.244314	1.887517	2.590838	3.391164	4.379536
32	$V(R_+)$	0.262781	0.319138	0.666102	1.065869	1.715762	2.807071
	$S(R_+)$	0.512622	0.564923	0.816151	1.032409	1.309871	1.675432
32	$^+U50\%$	(2).07149	(2).24894	(3).17949	(3).45933	(4).38625	(5).38956
32	$^+U25\%$	(2).07149	(2).24894	(3).17949	(4).15714	(5).16623	(6).20497
32	$^+U10\%$	(2).07149	(3).02681	(4).03694	(5).04760	(6).06665	(8).05020
32	^+U 5%	(3).00356	(3).02681	(4).03694	(5).04760	(7).02604	(9).02430
32	^+U 2%	(3).00356	(4).00262	(5).00722	(6).01394	(8).01007	(10).01170
32	^+U 1%	(3).00356	(4).00262	(5).00722	(7).00404	(9).00388	(11).00561
	$E(R_+)$	0.893550	1.255611	1.906155	2.615762	3.423586	4.422539
33	$V(R_+)$	0.258404	0.320098	0.668731	1.068363	1.723492	2.822872
	$S(R_+)$	0.508334	0.565772	0.817759	1.033616	1.312818	1.680140
33	$^+U50\%$	(2).07371	(2).25582	(3).18485	(3).47019	(4).39633	(5).39996
33	$^+U25\%$	(2).07371	(3).02769	(3).18485	(4).16203	(5).17152	(6).21150
33	$^+U10\%$	(2).07371	(3).02769	(4).03818	(5).04924	(6).06898	(8).05209
33	^+U 5%	(3).00368	(3).02769	(4).03818	(5).04924	(7).02700	(9).02526
33	^+U 2%	(3).00368	(4).00271	(5).00747	(6).01444	(8).01046	(10).01218
33	^+U 1%	(3).00368	(4).00271	(5).00747	(7).00419	(9).00403	(11).00585
	$E(R_+)$	0.905086	1.266500	1.924327	2.639936	3.455072	4.464300
34	$V(R_+)$	0.254123	0.321297	0.671046	1.070758	1.730880	2.837871
	$S(R_+)$	0.504106	0.566831	0.819174	1.034774	1.315629	1.684598
34	$^+U50\%$	(2).07592	(2).26265	(3).19017	(3).48083	(4).40623	(5).41017
34	$^+U25\%$	(2).07592	(3).02857	(3).19017	(4).16689	(5).17678	(6).21797
34	$^+U10\%$	(2).07592	(3).02857	(4).03942	(5).05087	(6).07130	(8).05397
34	^+U 5%	(3).00380	(3).02857	(4).03942	(6).01495	(7).02797	(9).02622
34	^+U 2%	(3).00380	(4).00280	(5).00772	(6).01495	(8).01085	(10).01267
34	^+U 1%	(3).00380	(4).00280	(5).00772	(7).00435	(9).00419	(11).00610
	$E(R_+)$	0.916158	1.277018	1.942055	2.663401	3.485674	4.504889
35	$V(R_+)$	0.249953	0.322710	0.673069	1.073077	1.737942	2.852132
	$S(R_+)$	0.499953	0.568076	0.820408	1.035894	1.318310	1.688825
35	$^+U50\%$	(2).07812	(2).26941	(3).19546	(3).49126	(4).41598	(5).42021
35	$^+U25\%$	(2).07812	(3).02945	(3).19546	(4).17173	(5).18200	(6).22439
35	$^+U10\%$	(2).07812	(3).02945	(4).04065	(5).05250	(6).07362	(8).05585
35	^+U 5%	(3).00392	(3).02945	(4).04065	(6).01545	(7).02893	(9).02718
35	^+U 2%	(3).00392	(4).00289	(5).00798	(6).01545	(8).01124	(10).01315
35	^+U 1%	(3).00392	(4).00289	(5).00798	(7).00450	(9).00435	(11).00634

TABLE 3 (continued)

N		p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
	$E(R_+)$	5.683563	7.548363	10.546380	16.381189	21.990327	29.455589
32	$V(R_+)$	4.764911	8.675159	17.611995	39.164822	50.274775	23.774242
	$S(R_+)$	2.182868	2.945362	4.196665	6.258180	7.090471	4.875884
32	$^+U50\%$	(6).45211	(8).42164	(11).41864	(16).48179	(22).48530	(**)******
32	$^+U25\%$	(8).17086	(10).20707	(14).20030	(21).22978	(30).23610	(**)******
32	$^+U10\%$	(10).05870	(12).09595	(17).09007	(27).08722	(**)******	(**)******
32	^+U 5%	(11).03396	(14).04333	(20).03920	(31).04197	(**)******	(**)******
32	^+U 2%	(12).01955	(16).01928	(23).01653	(**)******	(**)******	(**)******
32	^+U 1%	(14).00642	(18).00847	(25).00907	(**)******	(**)******	(**)******
	$E(R_+)$	5.741931	7.631986	10.679985	16.655418	22.465631	30.302862
33	$V(R_+)$	4.800823	8.769145	17.930925	40.686882	53.348125	25.871920
	$S(R_+)$	2.191078	2.961274	4.234492	6.378627	7.303980	5.086445
33	$^+U50\%$	(6).46374	(8).43344	(11).43139	(16).49688	(23).46104	(**)******
33	$^+U25\%$	(8).17675	(10).21445	(14).20840	(21).24072	(30).24683	(**)******
33	$^+U10\%$	(10).06103	(12).09990	(17).09458	(27).09304	(**)******	(**)******
33	^+U 5%	(11).03538	(14).04533	(20).04151	(31).04578	(**)******	(**)******
33	^+U 2%	(13).01174	(17).01349	(23).01771	(**)******	(**)******	(**)******
33	^+U 1%	(14).00674	(18).00896	(25).00982	(**)******	(**)******	(**)******
	$E(R_+)$	5.798608	7.713187	10.809782	16.923851	22.936494	31.149666
34	$V(R_+)$	4.834997	8.858649	18.236524	42.183751	56.415152	27.972077
	$S(R_+)$	2.198863	2.976348	4.270424	6.494902	7.511002	5.288863
34	$^+U50\%$	(6).47512	(8).44499	(11).44385	(17).45028	(23).47640	(**)******
34	$^+U25\%$	(8).18261	(10).22176	(14).21642	(22).21665	(31).23449	(**)******
34	$^+U10\%$	(10).06336	(13).07027	(17).09908	(27).09885	(**)******	(**)******
34	^+U 5%	(11).03680	(14).04733	(20).04381	(31).04960	(**)******	(**)******
34	^+U 2%	(13).01226	(17).01419	(23).01889	(**)******	(**)******	(**)******
34	^+U 1%	(14).00705	(18).00944	(26).00786	(**)******	(**)******	(**)******
	$E(R_+)$	5.853690	7.792103	10.935898	17.184218	23.394715	31.988971
35	$V(R_+)$	4.867563	8.943974	18.528500	43.655118	59.577303	30.279883
	$S(R_+)$	2.206255	2.990648	4.304474	6.607202	7.718634	5.502716
35	$^+U50\%$	(6).48626	(8).45631	(11).45604	(17).46418	(23).49177	(**)******
35	$^+U25\%$	(8).18842	(10).22900	(14).22437	(22).22650	(31).24469	(**)******
35	$^+U10\%$	(10).06568	(13).07308	(18).07926	(28).08897	(**)******	(**)******
35	^+U 5%	(11).03822	(14).04933	(20).04612	(32).04464	(**)******	(**)******
35	^+U 2%	(13).01278	(17).01489	(24).01511	(**)******	(**)******	(**)******
35	^+U 1%	(14).00736	(18).00993	(26).00846	(**)******	(**)******	(**)******

TABLE 3 (continued)

N		p= 0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
	$E(R_+)$	0.926786	1.287194	1.959356	2.686195	3.515443	4.544370
36	$V(R_+)$	0.245905	0.324312	0.674820	1.075336	1.744692	2.865711
	$S(R_+)$	0.495888	0.569484	0.821474	1.036984	1.320868	1.692841
36	$^+U50\%$	(2).08032	(2).27610	(3).20071	(4).17654	(4).42556	(5).43009
36	$^+U25\%$	(2).08032	(3).03032	(3).20071	(4).17654	(5).18719	(6).23076
36	$^+U10\%$	(2).08032	(3).03032	(4).04189	(5).05412	(6).07593	(8).05772
36	^+U 5%	(3).00404	(3).03032	(4).04189	(6).01596	(7).02989	(9).02814
36	^+U 2%	(3).00404	(4).00298	(5).00823	(6).01596	(8).01163	(10).01364
36	^+U 1%	(3).00404	(4).00298	(5).00823	(7).00465	(9).00450	(11).00658
	$E(R_+)$	0.936994	1.297058	1.976247	2.708356	3.544425	4.582799
37	$V(R_+)$	0.241988	0.326078	0.676320	1.077548	1.751144	2.878660
	$S(R_+)$	0.491923	0.571033	0.822387	1.038050	1.323308	1.696661
37	$^+U50\%$	(2).08252	(2).28274	(3).20592	(4).18131	(4).43499	(5).43979
37	$^+U25\%$	(2).08252	(3).03120	(3).20592	(4).18131	(5).19234	(6).23707
37	$^+U10\%$	(2).08252	(3).03120	(4).04312	(5).05574	(6).07824	(8).05959
37	^+U 5%	(3).00416	(3).03120	(4).04312	(6).01646	(7).03085	(9).02910
37	^+U 2%	(3).00416	(4).00307	(5).00849	(6).01646	(8).01202	(10).01412
37	^+U 1%	(3).00416	(4).00307	(5).00849	(7).00480	(9).00466	(11).00683
	$E(R_+)$	0.946803	1.306635	1.992745	2.729915	3.572661	4.620233
38	$V(R_+)$	0.238209	0.327988	0.677589	1.079724	1.757313	2.891025
	$S(R_+)$	0.488067	0.572703	0.823158	1.039098	1.325637	1.700301
38	$^+U50\%$	(2).08471	(2).28931	(3).21111	(4).18607	(4).44426	(5).44933
38	$^+U25\%$	(2).08471	(3).03207	(3).21111	(4).18607	(5).19746	(6).24333
38	$^+U10\%$	(2).08471	(3).03207	(4).04435	(5).05736	(6).08054	(8).06146
38	^+U 5%	(3).00427	(3).03207	(4).04435	(6).01696	(7).03181	(9).03005
38	^+U 2%	(3).00427	(4).00316	(5).00874	(6).01696	(8).01241	(10).01460
38	^+U 1%	(3).00427	(4).00316	(5).00874	(7).00496	(9).00482	(11).00707
	$E(R_+)$	0.956232	1.315948	2.008863	2.750905	3.600190	4.656720
39	$V(R_+)$	0.234575	0.330022	0.678646	1.081873	1.763209	2.902849
	$S(R_+)$	0.484329	0.574475	0.823800	1.040131	1.327859	1.703775
39	$^+U50\%$	(2).08689	(2).29583	(3).21626	(4).19079	(4).45338	(5).45870
39	$^+U25\%$	(2).08689	(3).03295	(3).21626	(4).19079	(5).20255	(6).24954
39	$^+U10\%$	(2).08689	(3).03295	(4).04558	(5).05898	(6).08283	(8).06332
39	^+U 5%	(3).00439	(3).03295	(4).04558	(6).01747	(7).03277	(9).03101
39	^+U 2%	(3).00439	(4).00325	(5).00900	(6).01747	(8).01280	(10).01509
39	^+U 1%	(3).00439	(4).00325	(5).00900	(7).00511	(9).00497	(11).00731

TABLE 3 (continued)

N		p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
	$E(R_+)$	5.907263	7.868858	11.058604	17.439240	23.848696	32.827812
36	$V(R_+)$	4.898637	9.025434	18.808589	45.099864	62.727819	32.589266
	$S(R_+)$	2.213286	3.004236	4.336887	6.715643	7.920090	5.708701
36	$^+U50\%$	(6).49717	(8).46740	(11).46796	(17).47780	(24).46718	(**)******
36	$^+U25\%$	(8).19420	(10).23617	(14).23223	(22).23635	(32).23245	(**)******
36	$^+U10\%$	(10).06800	(13).07588	(18).08287	(28).09420	(**)******	(**)******
36	^+U 5%	(11).03964	(15).03459	(20).04842	(32).04807	(**)******	(**)******
36	^+U 2%	(13).01330	(17).01558	(24).01606	(**)******	(**)******	(**)******
36	^+U 1%	(14).00767	(19).00695	(26).00907	(**)******	(**)******	(**)******
	$E(R_+)$	5.959409	7.943568	11.178013	17.686873	24.290644	33.659229
37	$V(R_+)$	4.928322	9.103283	19.076702	46.518644	65.966759	35.113637
	$S(R_+)$	2.219982	3.017165	4.367688	6.820458	8.121992	5.925676
37	$^+U50\%$	(7).32619	(8).47826	(11).47962	(17).49114	(24).48178	(**)******
37	$^+U25\%$	(8).19993	(10).24328	(14).24002	(22).24619	(32).24214	(**)******
37	$^+U10\%$	(10).07031	(13).07867	(18).08640	(28).09944	(**)******	(**)******
37	^+U 5%	(11).04106	(15).03599	(21).03874	(33).04326	(**)******	(**)******
37	^+U 2%	(13).01382	(17).01628	(24).01700	(**)******	(**)******	(**)******
37	^+U 1%	(14).00799	(19).00730	(26).00967	(**)******	(**)******	(**)******
	$E(R_+)$	6.010202	8.016339	11.294353	17.929565	24.728541	34.490187
38	$V(R_+)$	4.956713	9.177776	19.334214	47.910040	69.189429	37.638702
	$S(R_+)$	2.226368	3.029484	4.397069	6.921708	8.318018	6.135039
38	$^+U50\%$	(7).33441	(8).48890	(11).49103	(18).44555	(24).49638	(**)******
38	$^+U25\%$	(8).20562	(11).17385	(14).24774	(23).22157	(33).23003	(**)******
38	$^+U10\%$	(10).07261	(13).08146	(18).08993	(29).08949	(**)******	(**)******
38	^+U 5%	(11).04247	(15).03739	(21).04058	(33).04635	(**)******	(**)******
38	^+U 2%	(13).01434	(17).01697	(24).01794	(38).01825	(**)******	(**)******
38	^+U 1%	(14).00830	(19).00764	(27).00774	(**)******	(**)******	(**)******
	$E(R_+)$	6.059709	8.087268	11.407736	18.165681	25.155357	35.313863
39	$V(R_+)$	4.983897	9.249127	19.581175	49.272901	72.484263	40.382559
	$S(R_+)$	2.232464	3.041238	4.425062	7.019466	8.513769	6.354727
39	$^+U50\%$	(7).34253	(8).49932	(12).40585	(18).45786	(25).47156	(**)******
39	$^+U25\%$	(8).21127	(11).17910	(15).20006	(23).23044	(33).23923	(**)******
39	$^+U10\%$	(10).07491	(13).08424	(18).09344	(29).09420	(**)******	(**)******
39	^+U 5%	(11).04389	(15).03880	(21).04243	(33).04945	(**)******	(**)******
39	^+U 2%	(13).01486	(17).01767	(24).01889	(39).01642	(**)******	(**)******
39	^+U 1%	(14).00861	(19).00798	(27).00822	(**)******	(**)******	(**)******

TABLE 3 (continued)

N		p= 0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
	$E(R_+)$	0.965299	1.325018	2.024616	2.771355	3.627047	4.692306
40	$V(R_+)$	0.231088	0.332160	0.679510	1.083999	1.768846	2.914170
	$S(R_+)$	0.480716	0.576334	0.824324	1.041153	1.329980	1.707094
40	$^+U50\%$	(2).08907	(2).30228	(3).22137	(4).19549	(4).46235	(5).46792
40	$^+U25\%$	(2).08907	(3).03382	(3).22137	(4).19549	(5).20761	(7).13104
40	$^+U10\%$	(2).08907	(3).03382	(4).04681	(5).06060	(6).08512	(8).06518
40	^+U 5%	(3).00451	(3).03382	(4).04681	(6).01797	(7).03372	(9).03196
40	^+U 2%	(3).00451	(4).00334	(5).00925	(6).01797	(8).01319	(10).01557
40	^+U 1%	(3).00451	(4).00334	(5).00925	(7).00526	(9).00513	(11).00756
	$E(R_+)$	0.974023	1.333864	2.040016	2.791293	3.653264	4.727036
41	$V(R_+)$	0.227752	0.334387	0.680198	1.086107	1.774237	2.925023
	$S(R_+)$	0.477234	0.578262	0.824741	1.042165	1.332005	1.710270
41	$^+U50\%$	(2).09124	(2).30868	(3).22645	(4).20016	(4).47117	(5).47698
41	$^+U25\%$	(2).09124	(3).03469	(3).22645	(4).20016	(5).21264	(7).13454
41	$^+U10\%$	(2).09124	(3).03469	(4).04804	(5).06221	(6).08740	(8).06703
41	^+U 5%	(3).00463	(3).03469	(4).04804	(6).01847	(7).03468	(9).03292
41	^+U 2%	(3).00463	(4).00343	(5).00950	(6).01847	(8).01358	(10).01605
41	^+U 1%	(3).00463	(4).00343	(5).00950	(7).00541	(9).00529	(11).00780
	$E(R_+)$	0.982420	1.342503	2.055076	2.810742	3.678873	4.760948
42	$V(R_+)$	0.224569	0.336685	0.680727	1.088200	1.779391	2.935439
	$S(R_+)$	0.473887	0.580246	0.825062	1.043168	1.333938	1.713312
42	$^+U50\%$	(2).09341	(2).31502	(3).23150	(4).20480	(4).47985	(5).48588
42	$^+U25\%$	(2).09341	(3).03556	(3).23150	(4).20480	(5).21763	(7).13801
42	$^+U10\%$	(2).09341	(3).03556	(4).04926	(5).06382	(6).08968	(8).06888
42	^+U 5%	(3).00475	(3).03556	(4).04926	(6).01898	(7).03564	(9).03387
42	^+U 2%	(3).00475	(4).00352	(5).00976	(6).01898	(8).01397	(10).01654
42	^+U 1%	(3).00475	(4).00352	(5).00976	(7).00557	(9).00544	(11).00804
	$E(R_+)$	0.990507	1.350949	2.069808	2.829729	3.703900	4.794080
43	$V(R_+)$	0.221539	0.339042	0.681113	1.090279	1.784322	2.945448
	$S(R_+)$	0.470679	0.582273	0.825296	1.044164	1.335785	1.716231
43	$^+U50\%$	(2).09558	(2).32130	(3).23652	(4).20941	(4).48839	(5).49464
43	$^+U25\%$	(2).09558	(3).03643	(3).23652	(4).20941	(5).22259	(7).14148
43	$^+U10\%$	(2).09558	(3).03643	(4).05048	(5).06542	(6).09195	(8).07073
43	^+U 5%	(3).00487	(3).03643	(5).01001	(6).01948	(7).03659	(9).03482
43	^+U 2%	(3).00487	(4).00360	(5).01001	(6).01948	(8).01436	(10).01702
43	^+U 1%	(3).00487	(4).00360	(6).00196	(7).00572	(9).00560	(11).00829

TABLE 3 (continued)

N		p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
	$E(R_+)$	6.107995	8.156448	11.518335	18.397041	25.577945	36.137016
40	$V(R_+)$	5.009950	9.317546	19.818669	50.610250	75.767641	43.129254
	$S(R_+)$	2.238292	3.052465	4.451816	7.114088	8.704461	6.567287
40	$^+U50\%$	(7).35055	(9).37201	(12).41586	(18).46994	(25).48543	(**)******
40	$^+U25\%$	(8).21688	(11).18433	(15).20640	(23).23930	(33).24843	(**)******
40	$^+U10\%$	(10).07721	(13).08701	(18).09694	(29).09891	(**)******	(**)******
40	$^+U\ 5\%$	(11).04530	(15).04020	(21).04427	(34).04450	(**)******	(**)******
40	$^+U\ 2\%$	(13).01538	(17).01836	(24).01983	(39).01807	(**)******	(**)******
40	$^+U\ 1\%$	(14).00892	(19).00832	(27).00870	(**)******	(**)******	(**)******
	$E(R_+)$	6.155119	8.223961	11.626263	18.622501	25.990302	36.953027
41	$V(R_+)$	5.034946	9.383212	20.046842	51.917909	79.109007	46.098121
	$S(R_+)$	2.243868	3.063203	4.477370	7.205408	8.894324	6.789560
41	$^+U50\%$	(7).35848	(9).38062	(12).42570	(18).48180	(25).49930	(**)******
41	$^+U25\%$	(8).22245	(11).18952	(15).21270	(23).24816	(34).23601	(**)******
41	$^+U10\%$	(10).07949	(13).08977	(19).07767	(30).08902	(**)******	(**)******
41	$^+U\ 5\%$	(11).04670	(15).04159	(21).04612	(34).04728	(**)******	(**)******
41	$^+U\ 2\%$	(13).01590	(17).01905	(25).01587	(39).01971	(**)******	(**)******
41	$^+U\ 1\%$	(14).00924	(19).00866	(27).00919	(**)******	(**)******	(**)******
	$E(R_+)$	6.201135	8.289887	11.731664	18.843570	26.398633	37.768522
42	$V(R_+)$	5.058947	9.446299	20.266551	53.199642	82.434087	49.068794
	$S(R_+)$	2.249210	3.073483	4.501839	7.293808	9.079322	7.004912
42	$^+U50\%$	(7).36631	(9).38911	(12).43538	(18).49343	(26).47434	(**)******
42	$^+U25\%$	(8).22798	(11).19468	(15).21894	(24).22335	(34).24475	(**)******
42	$^+U10\%$	(10).08178	(13).09252	(19).08049	(30).09326	(**)******	(**)******
42	$^+U\ 5\%$	(11).04811	(15).04299	(21).04796	(35).04255	(**)******	(**)******
42	$^+U\ 2\%$	(13).01641	(17).01975	(25).01662	(40).01774	(**)******	(**)******
42	$^+U\ 1\%$	(14).00955	(19).00900	(27).00967	(**)******	(**)******	(**)******
	$E(R_+)$	6.246094	8.354299	11.834635	19.059203	26.797221	38.576945
43	$V(R_+)$	5.082016	9.506961	20.477983	54.452523	85.811595	52.267656
	$S(R_+)$	2.254333	3.083336	4.525260	7.379195	9.263455	7.229637
43	$^+U50\%$	(7).37404	(9).39748	(12).44490	(19).44834	(26).48751	(**)******
43	$^+U25\%$	(8).23347	(11).19980	(15).22514	(24).23132	(35).23252	(**)******
43	$^+U10\%$	(10).08405	(13).09526	(19).08330	(30).09750	(**)******	(**)******
43	$^+U\ 5\%$	(11).04951	(15).04438	(21).04979	(35).04506	(**)******	(**)******
43	$^+U\ 2\%$	(13).01693	(18).01383	(25).01738	(40).01922	(**)******	(**)******
43	$^+U\ 1\%$	(14).00986	(19).00934	(28).00774	(**)******	(**)******	(**)******

TABLE 3 (continued)

N		p= 0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
	$E(R_+)$	0.998299	1.359218	2.084221	2.848274	3.728372	4.826468
44	$V(R_+)$	0.218662	0.341444	0.681371	1.092345	1.789040	2.955075
	$S(R_+)$	0.467613	0.584332	0.825452	1.045153	1.337550	1.719033
44	$^+U50\%$	(2).09773	(2).32752	(3).24150	(4).21400	(4).49679	(6).27984
44	$^+U25\%$	(2).09773	(3).03730	(3).24150	(4).21400	(5).22752	(7).14493
44	$^+U10\%$	(2).09773	(3).03730	(4).05171	(5).06703	(6).09421	(8).07257
44	^+U 5%	(3).00498	(3).03730	(5).01026	(6).01998	(7).03754	(9).03577
44	^+U 2%	(3).00498	(4).00369	(5).01026	(6).01998	(8).01475	(10).01750
44	^+U 1%	(3).00498	(4).00369	(6).00201	(7).00587	(9).00576	(11).00853
	$E(R_+)$	1.005810	1.367321	2.098328	2.866399	3.752313	4.858143
45	$V(R_+)$	0.215937	0.343878	0.681514	1.094398	1.793555	2.964345
	$S(R_+)$	0.464690	0.586411	0.825539	1.046135	1.339237	1.721727
45	$^+U50\%$	(2).09989	(2).33368	(3).24645	(4).21856	(5).23242	(6).28576
45	$^+U25\%$	(2).09989	(3).03817	(3).24645	(4).21856	(5).23242	(7).14836
45	$^+U10\%$	(2).09989	(3).03817	(4).05293	(5).06863	(6).09647	(8).07441
45	^+U 5%	(3).00510	(3).03817	(5).01052	(6).02048	(7).03850	(9).03672
45	^+U 2%	(3).00510	(4).00378	(5).01052	(7).00602	(8).01513	(10).01798
45	^+U 1%	(3).00510	(4).00378	(6).00206	(7).00602	(9).00591	(11).00877
	$E(R_+)$	1.013055	1.375270	2.112137	2.884123	3.775745	4.889137
46	$V(R_+)$	0.213363	0.346336	0.681557	1.096436	1.797879	2.973278
	$S(R_+)$	0.461912	0.588503	0.825565	1.047109	1.340850	1.724320
46	$^+U50\%$	(2).10203	(2).33979	(3).25137	(4).22310	(5).23729	(6).29162
46	$^+U25\%$	(2).10203	(3).03904	(4).05414	(4).22310	(5).23729	(7).15178
46	$^+U10\%$	(3).00522	(3).03904	(4).05414	(5).07022	(6).09873	(8).07625
46	^+U 5%	(3).00522	(3).03904	(5).01077	(6).02098	(7).03945	(9).03767
46	^+U 2%	(3).00522	(4).00387	(5).01077	(7).00618	(8).01552	(10).01846
46	^+U 1%	(3).00522	(4).00387	(6).00211	(7).00618	(9).00607	(11).00901
	$E(R_+)$	1.020046	1.383075	2.125659	2.901464	3.798690	4.919477
47	$V(R_+)$	0.210937	0.348806	0.681511	1.098460	1.802021	2.981895
	$S(R_+)$	0.459279	0.590598	0.825537	1.048075	1.342394	1.726816
47	$^+U50\%$	(2).10418	(2).34585	(3).25626	(4).22761	(5).24213	(6).29743
47	$^+U25\%$	(2).10418	(3).03991	(4).05536	(4).22761	(5).24213	(7).15519
47	$^+U10\%$	(3).00534	(3).03991	(4).05536	(5).07182	(7).04040	(8).07808
47	^+U 5%	(3).00534	(3).03991	(5).01103	(6).02148	(7).04040	(9).03862
47	^+U 2%	(3).00534	(4).00396	(5).01103	(7).00633	(8).01591	(10).01895
47	^+U 1%	(3).00534	(4).00396	(6).00216	(7).00633	(9).00623	(11).00926

TABLE 3 (continued)

N		p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
	$E(R_+)$	6.290044	8.417263	11.935301	19.270744	27.191943	39.384856
44	$V(R_+)$	5.104206	9.565343	20.681837	55.679904	89.169579	55.467387
	$S(R_+)$	2.259249	3.092789	4.547729	7.461897	9.442965	7.447643
44	$^+U50\%$	(7).38168	(9).40574	(12).45425	(19).45911	(27).46314	(**)******
44	$^+U25\%$	(8).23893	(11).20489	(15).23128	(24).23930	(35).24082	(**)******
44	$^+U10\%$	(10).08632	(13).09800	(19).08610	(31).08775	(**)******	(**)******
44	^+U 5%	(12).02986	(15).04577	(22).03984	(35).04756	(**)******	(**)******
44	^+U 2%	(13).01745	(18).01432	(25).01813	(41).01729	(**)******	(**)******
44	^+U 1%	(15).00592	(19).00968	(28).00812	(44).00970	(**)******	(**)******
	$E(R_+)$	6.333029	8.478845	12.033752	19.477377	27.577658	40.185832
45	$V(R_+)$	5.125569	9.621575	20.878323	56.878287	92.567395	58.897653
	$S(R_+)$	2.263972	3.101866	4.569280	7.541769	9.621195	7.674481
45	$^+U50\%$	(7).38922	(9).41388	(12).46345	(19).46970	(27).47565	(**)******
45	$^+U25\%$	(8).24434	(11).20995	(15).23738	(24).24728	(35).24913	(**)******
45	$^+U10\%$	(10).08859	(14).06906	(19).08889	(31).09156	(45).09944	(**)******
45	^+U 5%	(12).03071	(15).04716	(22).04131	(36).04280	(**)******	(**)******
45	^+U 2%	(13).01796	(18).01480	(25).01889	(41).01862	(**)******	(**)******
45	^+U 1%	(15).00611	(20).00678	(28).00851	(45).00873	(**)******	(**)******
	$E(R_+)$	6.375091	8.539103	12.130090	19.680116	27.959425	40.986237
46	$V(R_+)$	5.146152	9.675779	21.067999	58.052457	95.948778	62.331000
	$S(R_+)$	2.268513	3.110591	4.589989	7.619216	9.795345	7.894998
46	$^+U50\%$	(7).39668	(9).42192	(12).47249	(19).48011	(27).48817	(**)******
46	$^+U25\%$	(8).24972	(11).21498	(15).24342	(25).22255	(36).23667	(**)******
46	$^+U10\%$	(10).09085	(14).07101	(19).09167	(31).09538	(46).09447	(**)******
46	^+U 5%	(12).03156	(15).04855	(22).04277	(36).04506	(**)******	(**)******
46	^+U 2%	(13).01848	(18).01529	(25).01965	(41).01995	(**)******	(**)******
46	^+U 1%	(15).00629	(20).00702	(28).00890	(45).00960	(**)******	(**)******
	$E(R_+)$	6.416268	8.598093	12.224399	19.878394	28.332844	41.779839
47	$V(R_+)$	5.165997	9.728069	21.251089	59.198062	99.359091	65.996873
	$S(R_+)$	2.272883	3.118985	4.609890	7.694028	9.967903	8.123846
47	$^+U50\%$	(7).40404	(9).42984	(12).48138	(19).49033	(28).46376	(**)******
47	$^+U25\%$	(9).15559	(11).21997	(15).24942	(25).22973	(36).24456	(**)******
47	$^+U10\%$	(10).09310	(14).07296	(19).09444	(31).09920	(46).09919	(**)******
47	^+U 5%	(12).03242	(15).04993	(22).04423	(36).04731	(**)******	(**)******
47	^+U 2%	(13).01900	(18).01577	(26).01572	(42).01796	(**)******	(**)******
47	^+U 1%	(15).00648	(20).00726	(28).00928	(46).00864	(**)******	(**)******

TABLE 3 (continued)

N		p= 0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
	$E(R_+)$	1.026795	1.390745	2.138902	2.918440	3.821167	4.949192
48	$V(R_+)$	0.208658	0.351281	0.681387	1.100467	1.805992	2.990214
	$S(R_+)$	0.456791	0.592690	0.825462	1.049032	1.343872	1.729223
48	$^+U50\%$	(2).10632	(2).35184	(3).26111	(4).23209	(5).24694	(6).30320
48	$^+U25\%$	(2).10632	(3).04077	(4).05658	(4).23209	(5).24694	(7).15859
48	$^+U10\%$	(3).00546	(3).04077	(4).05658	(5).07341	(7).04135	(8).07991
48	^+U 5%	(3).00546	(3).04077	(5).01128	(6).02198	(7).04135	(9).03957
48	^+U 2%	(3).00546	(4).00405	(5).01128	(7).00648	(8).01630	(10).01943
48	^+U 1%	(3).00546	(4).00405	(6).00221	(7).00648	(9).00638	(11).00950
	$E(R_+)$	1.033315	1.398288	2.151876	2.935067	3.843195	4.978305
49	$V(R_+)$	0.206522	0.353752	0.681196	1.102456	1.809800	2.998250
	$S(R_+)$	0.454447	0.594770	0.825346	1.049979	1.345288	1.731546
49	$^+U50\%$	(2).10845	(2).35778	(3).26593	(4).23655	(5).25171	(6).30892
49	$^+U25\%$	(2).10845	(3).04164	(4).05779	(4).23655	(6).10546	(7).16197
49	$^+U10\%$	(3).00557	(3).04164	(4).05779	(5).07500	(7).04230	(8).08174
49	^+U 5%	(3).00557	(3).04164	(5).01153	(6).02249	(7).04230	(9).04051
49	^+U 2%	(3).00557	(4).00414	(5).01153	(7).00663	(8).01669	(10).01991
49	^+U 1%	(3).00557	(4).00414	(6).00226	(7).00663	(9).00654	(11).00974
	$E(R_+)$	1.039617	1.405713	2.164589	2.951360	3.864791	5.006842
50	$V(R_+)$	0.204527	0.356212	0.680948	1.104425	1.813455	3.006021
	$S(R_+)$	0.452246	0.596835	0.825196	1.050916	1.346646	1.733788
50	$^+U50\%$	(2).11058	(2).36367	(3).27072	(4).24098	(5).25646	(6).31459
50	$^+U25\%$	(2).11058	(3).04250	(4).05900	(4).24098	(6).10769	(7).16533
50	$^+U10\%$	(3).00569	(3).04250	(4).05900	(5).07659	(7).04325	(8).08356
50	^+U 5%	(3).00569	(3).04250	(5).01179	(6).02299	(7).04325	(9).04146
50	^+U 2%	(3).00569	(4).00423	(5).01179	(7).00679	(8).01708	(11).00998
50	^+U 1%	(3).00569	(4).00423	(6).00231	(7).00679	(9).00670	(11).00998

TABLE 3 (continued)

N		p=0.60	p=0.70	p=0.80	p=0.90	p=0.95	p=0.99
	$E(R_+)$	6.456597	8.655867	12.316767	20.073047	28.702486	42.572875
48	$V(R_+)$	5.185146	9.778547	21.428049	60.319987	102.749646	69.664750
	$S(R_+)$	2.277092	3.127067	4.629044	7.766594	10.136550	8.346541
48	$^+U50\%$	(7).41131	(9).43766	(12).49013	(20).44603	(28).47565	(**)******
48	$^+U25\%$	(9).15912	(11).22494	(16).20195	(25).23691	(37).23233	(**)******
48	$^+U10\%$	(10).09535	(14).07490	(19).09721	(32).08928	(47).09423	(**)******
48	^+U 5%	(12).03327	(16).03505	(22).04569	(36).04956	(**)******	(**)******
48	^+U 2%	(13).01951	(18).01626	(26).01632	(42).01916	(**)******	(**)******
48	^+U 1%	(15).00667	(20).00750	(28).00967	(46).00943	(**)******	(**)******
	$E(R_+)$	6.496111	8.712475	12.407267	20.263563	29.064169	43.359176
49	$V(R_+)$	5.203635	9.827312	21.599096	61.414721	106.164997	73.570023
	$S(R_+)$	2.281148	3.134854	4.647483	7.836754	10.303640	8.577297
49	$^+U50\%$	(7).41849	(9).44537	(12).49872	(20).45553	(28).48755	(**)******
49	$^+U25\%$	(9).16264	(11).22987	(16).20692	(25).24409	(37).23982	(**)******
49	$^+U10\%$	(10).09759	(14).07684	(19).09997	(32).09271	(47).09872	(**)******
49	^+U 5%	(12).03412	(16).03603	(22).04715	(37).04461	(**)******	(**)******
49	^+U 2%	(14).01173	(18).01674	(26).01692	(43).01724	(**)******	(**)******
49	^+U 1%	(15).00686	(20).00774	(29).00774	(47).00848	(**)******	(**)******
	$E(R_+)$	6.534845	8.767963	12.495978	20.450697	29.422235	44.144917
50	$V(R_+)$	5.221499	9.874452	21.764609	62.486439	109.557691	77.476246
	$S(R_+)$	2.285060	3.142364	4.665256	7.904836	10.466981	8.802059
50	$^+U50\%$	(7).42559	(9).45297	(13).41451	(20).46487	(28).49944	(**)******
50	$^+U25\%$	(9).16615	(11).23477	(16).21185	(26).21968	(37).24732	(**)******
50	$^+U10\%$	(10).09983	(14).07877	(20).08020	(32).09614	(48).09378	(**)******
50	^+U 5%	(12).03497	(16).03701	(22).04860	(37).04663	(**)******	(**)******
50	^+U 2%	(14).01204	(18).01723	(26).01753	(43).01832	(**)******	(**)******
50	^+U 1%	(15).00704	(20).00797	(29).00805	(47).00919	(**)******	(**)******

TABLE 4

PROBABILITY DISTRIBUTION OF THE LENGTH OF THE LONGEST RUN OF EITHER +VE OR -VE SIGNS

TABLE 4

PROBABILITY DISTRIBUTION OF THE LENGTH OF THE LONGEST RUN OF EITHER +VE 0R -VE SIGNS

N	r	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
2	1	0.095000	0.180000	0.320000	0.420000	0.480000	0.500000
2	2	0.905000	0.820000	0.680000	0.580000	0.520000	0.500000
3	1	0.047500	0.090000	0.160000	0.210000	0.240000	0.250000
3	2	0.095000	0.180000	0.320000	0.420000	0.480000	0.500000
3	3	0.857500	0.730000	0.520000	0.370000	0.280000	0.250000
4	1	0.004513	0.016200	0.051200	0.088200	0.115200	0.125000
4	2	0.095000	0.180000	0.320000	0.420000	0.480000	0.500000
4	3	0.085975	0.147600	0.217600	0.243600	0.249600	0.250000
4	4	0.814513	0.656200	0.411200	0.248200	0.155200	0.125000
5	1	0.002256	0.008100	0.025600	0.044100	0.057600	0.062500
5	2	0.054269	0.114300	0.236800	0.342300	0.412800	0.437500
5	3	0.088231	0.155700	0.243200	0.287700	0.307200	0.312500
5	4	0.081462	0.131400	0.166400	0.155400	0.134400	0.125000
5	5	0.773781	0.590500	0.328000	0.170500	0.088000	0.062500
6	1	0.000214	0.001458	0.008192	0.018522	0.027648	0.031250
6	2	0.013537	0.048600	0.153600	0.264600	0.345600	0.375000
6	3	0.090273	0.162342	0.260608	0.313278	0.337152	0.343750
6	4	0.083504	0.138042	0.183808	0.180978	0.164352	0.156250
6	5	0.077379	0.118116	0.131584	0.104244	0.074496	0.062500
6	6	0.735092	0.531442	0.262208	0.118378	0.050752	0.031250
7	1	0.000107	0.000729	0.004096	0.009261	0.013824	0.015625
7	2	0.007626	0.030132	0.109568	0.206388	0.283392	0.312500
7	3	0.055560	0.115839	0.225536	0.303051	0.345984	0.359375
7	4	0.085546	0.144684	0.201216	0.206556	0.194304	0.187500
7	5	0.079313	0.124029	0.144896	0.120561	0.090624	0.078125
7	6	0.073509	0.106290	0.104960	0.071610	0.042240	0.031250
7	7	0.698337	0.478297	0.209728	0.082573	0.029632	0.015625

TABLE 4 (continued)

N	r	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
8	1	0.000010	0.000131	0.001311	0.003890	0.006636	0.007813
8	2	0.003552	0.016979	0.076063	0.159122	0.230124	0.257812
8	3	0.019010	0.064021	0.179937	0.281878	0.345876	0.367187
8	4	0.087578	0.151195	0.217313	0.228244	0.217620	0.210937
8	5	0.081248	0.129942	0.158208	0.136878	0.106752	0.093750
8	6	0.075347	0.111605	0.115487	0.082556	0.051180	0.039063
8	7	0.069834	0.095660	0.083907	0.049719	0.024361	0.015625
8	8	0.663420	0.430467	0.167775	0.057714	0.017452	0.007813
9	1	0.000005	0.000066	0.000655	0.001945	0.003318	0.003906
9	2	0.001143	0.008209	0.050135	0.119837	0.184689	0.210937
9	3	0.013875	0.050335	0.158188	0.266637	0.341176	0.367187
9	4	0.056439	0.114659	0.199854	0.232592	0.233825	0.230469
9	5	0.083183	0.135855	0.171520	0.153195	0.122880	0.109375
9	6	0.077185	0.116920	0.126013	0.093501	0.060119	0.046875
9	7	0.071580	0.100443	0.092303	0.057238	0.029430	0.019531
9	8	0.066342	0.086093	0.067113	0.034681	0.014223	0.007813
9	9	0.630249	0.387420	0.134218	0.040373	0.010340	0.003906
10	1	0.000000	0.000012	0.000210	0.000817	0.001593	0.001953
10	2	0.000567	0.004711	0.034498	0.091188	0.148061	0.171875
10	3	0.008564	0.035681	0.132859	0.245982	0.330593	0.361328
10	4	0.023641	0.073818	0.175682	0.231720	0.247107	0.248047
10	5	0.085117	0.141756	0.184622	0.168695	0.137415	0.123047
10	6	0.079022	0.122236	0.136540	0.104447	0.069059	0.054687
10	7	0.073325	0.105226	0.100700	0.064757	0.034499	0.023438
10	8	0.068001	0.090398	0.073825	0.039901	0.017147	0.009766
10	9	0.063025	0.077484	0.053688	0.024240	0.008377	0.003906
10	10	0.598737	0.348678	0.107374	0.028253	0.006151	0.001953
11	1	0.000000	0.000006	0.000105	0.000408	0.000796	0.000977
11	2	0.000241	0.002529	0.023311	0.068908	0.118267	0.139648
11	3	0.004658	0.023980	0.109663	0.224275	0.316761	0.351562
11	4	0.019121	0.063529	0.166063	0.233289	0.258354	0.262695
11	5	0.057115	0.112790	0.176250	0.175717	0.149469	0.135742
11	6	0.080860	0.127551	0.147067	0.115392	0.077998	0.062500
11	7	0.075071	0.110009	0.109097	0.072276	0.039567	0.027344
11	8	0.069659	0.094703	0.080538	0.045122	0.020070	0.011719
11	9	0.064601	0.081358	0.059057	0.027881	0.010084	0.004883
11	10	0.059874	0.069736	0.042950	0.016957	0.004963	0.001953
11	11	0.568800	0.313811	0.085899	0.019775	0.003670	0.000977

TABLE 4 (continued)

N	r	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
12	1	0.000000	0.000001	0.000034	0.000172	0.000382	0.000488
12	2	0.000090	0.001307	0.015627	0.051912	0.094293	0.113281
12	3	0.002233	0.015591	0.089583	0.202667	0.300729	0.338867
12	4	0.014443	0.052454	0.154120	0.232019	0.266988	0.274902
12	5	0.027615	0.080336	0.163582	0.180194	0.160518	0.147949
12	6	0.082698	0.132865	0.157560	0.126167	0.086555	0.069824
12	7	0.076817	0.114792	0.117494	0.079795	0.044636	0.031250
12	8	0.071318	0.099008	0.087251	0.050342	0.022993	0.013672
12	9	0.066176	0.085233	0.064426	0.031523	0.011790	0.005859
12	10	0.061371	0.073222	0.047245	0.019502	0.005968	0.002441
12	11	0.056880	0.062762	0.034360	0.011866	0.002953	0.000977
12	12	0.540360	0.282430	0.068719	0.013842	0.002194	0.000488
13	1	0.000000	0.000001	0.000017	0.000086	0.000191	0.000244
13	2	0.000041	0.000720	0.010583	0.039162	0.075130	0.091797
13	3	0.001363	0.010867	0.073567	0.182246	0.283510	0.324219
13	4	0.009603	0.040563	0.139747	0.227883	0.273162	0.284912
13	5	0.023637	0.072638	0.160330	0.186106	0.171060	0.159424
13	6	0.057518	0.109936	0.154309	0.132788	0.094232	0.076904
13	7	0.078563	0.119575	0.125891	0.087314	0.049705	0.035156
13	8	0.072976	0.103312	0.093963	0.055563	0.025917	0.015625
13	9	0.067752	0.089107	0.069795	0.035164	0.013497	0.006836
13	10	0.062867	0.076709	0.051540	0.022047	0.006974	0.002930
13	11	0.058302	0.065900	0.037796	0.013647	0.003548	0.001221
13	12	0.054036	0.056486	0.027488	0.008306	0.001762	0.000488
13	13	0.513342	0.254187	0.054976	0.009689	0.001313	0.000244
14	1	0.000000	0.000000	0.000005	0.000036	0.000092	0.000122
14	2	0.000017	0.000384	0.007135	0.029516	0.059826	0.074341
14	3	0.000776	0.007366	0.059916	0.162922	0.265710	0.308350
14	4	0.005953	0.030685	0.125735	0.222227	0.277354	0.292969
14	5	0.019513	0.064276	0.155503	0.190584	0.180661	0.170166
14	6	0.030986	0.084183	0.148310	0.138163	0.101554	0.083862
14	7	0.080309	0.124358	0.134282	0.094797	0.054682	0.038940
14	8	0.074635	0.107617	0.100676	0.060783	0.028840	0.017578
14	9	0.069327	0.092981	0.075164	0.038806	0.015204	0.007812
14	10	0.064364	0.080196	0.055835	0.024592	0.007979	0.003418
14	11	0.059724	0.069038	0.041232	0.015427	0.004144	0.001465
14	12	0.055387	0.059310	0.030237	0.009551	0.002116	0.000610
14	13	0.051334	0.050837	0.021990	0.005814	0.001053	0.000244
14	14	0.487675	0.228768	0.043980	0.006782	0.000786	0.000122

TABLE 4 (continued)

N	r	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
15	1	0.000000	0.000000	0.000003	0.000018	0.000046	0.000061
15	2	0.000007	0.000203	0.004798	0.022219	0.047611	0.060181
15	3	0.000414	0.004902	0.048536	0.144984	0.247831	0.291809
15	4	0.003560	0.023100	0.112627	0.215450	0.279798	0.299255
15	5	0.015243	0.055254	0.149136	0.193697	0.189390	0.180237
15	6	0.027488	0.078482	0.148352	0.144291	0.108745	0.090637
15	7	0.057671	0.106264	0.133877	0.100245	0.059344	0.042664
15	8	0.076293	0.111922	0.107388	0.066003	0.031763	0.019531
15	9	0.070903	0.096855	0.080533	0.042447	0.016911	0.008789
15	10	0.065861	0.083683	0.060130	0.027137	0.008984	0.003906
15	11	0.061146	0.072176	0.044668	0.017208	0.004739	0.001709
15	12	0.056738	0.062134	0.032985	0.010797	0.002470	0.000732
15	13	0.052618	0.053379	0.024189	0.006686	0.001264	0.000305
15	14	0.048767	0.045754	0.017592	0.004069	0.000630	0.000122
15	15	0.463291	0.205891	0.035184	0.004748	0.000471	0.000061
16	1	0.000000	0.000000	0.000001	0.000008	0.000022	0.000031
16	2	0.000003	0.000110	0.003239	0.016737	0.037889	0.048706
16	3	0.000218	0.003259	0.039194	0.128529	0.230224	0.275024
16	4	0.002492	0.018093	0.101011	0.208020	0.280757	0.303955
16	5	0.010827	0.045570	0.141215	0.195439	0.197267	0.189667
16	6	0.023858	0.072245	0.147401	0.149755	0.115639	0.097229
16	7	0.033814	0.085882	0.131713	0.105083	0.063880	0.046356
16	8	0.077952	0.116226	0.114100	0.071216	0.034665	0.021454
16	9	0.072479	0.100729	0.085902	0.046089	0.018618	0.009766
16	10	0.067358	0.087170	0.064425	0.029683	0.009989	0.004395
16	11	0.062568	0.075315	0.048104	0.018988	0.005335	0.001953
16	12	0.058089	0.064959	0.035734	0.012043	0.002825	0.000854
16	13	0.053901	0.055921	0.026388	0.007558	0.001476	0.000366
16	14	0.049987	0.048041	0.019351	0.004680	0.000756	0.000153
16	15	0.046329	0.041178	0.014074	0.002849	0.000377	0.000061
16	16	0.440127	0.185302	0.028147	0.003323	0.000283	0.000031
17	1	0.000000	0.000000	0.000000	0.000004	0.000011	0.000015
17	2	0.000001	0.000059	0.002182	0.012603	0.030145	0.039413
17	3	0.000126	0.002203	0.031632	0.113629	0.213162	0.258316
17	4	0.001657	0.013883	0.090006	0.199893	0.280383	0.307236
17	5	0.007423	0.037283	0.133154	0.196252	0.204384	0.198486
17	6	0.020096	0.065471	0.145455	0.154555	0.122235	0.103638
17	7	0.030744	0.081743	0.133419	0.110300	0.068380	0.050003
17	8	0.057604	0.102001	0.115182	0.075432	0.037453	0.023361
17	9	0.074054	0.104604	0.091271	0.049730	0.020324	0.010742
17	10	0.068855	0.090656	0.068720	0.032228	0.010994	0.004883
17	11	0.063990	0.078453	0.051540	0.020769	0.005931	0.002197

TABLE 4 (continued)

N	r	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
17	12	0.059440	0.067783	0.038483	0.013289	0.003179	0.000977
17	13	0.055184	0.058463	0.028587	0.008430	0.001687	0.000427
17	14	0.051206	0.050329	0.021111	0.005290	0.000883	0.000183
17	15	0.047487	0.043237	0.015481	0.003276	0.000453	0.000076
17	16	0.044013	0.037060	0.011259	0.001994	0.000226	0.000031
17	17	0.418120	0.166772	0.022518	0.002326	0.000169	0.000015
18	1	0.000000	0.000000	0.000000	0.000002	0.000005	0.000008
18	2	0.000000	0.000031	0.001469	0.009488	0.023982	0.031891
18	3	0.000069	0.001472	0.025452	0.100193	0.196811	0.241920
18	4	0.001065	0.010547	0.079885	0.191349	0.278867	0.309250
18	5	0.005089	0.030598	0.125232	0.196268	0.210784	0.206718
18	6	0.016203	0.058160	0.142519	0.158702	0.128543	0.109871
18	7	0.027555	0.077170	0.134490	0.115200	0.072783	0.053604
18	8	0.036156	0.085922	0.115138	0.079349	0.040196	0.025261
18	9	0.075630	0.108478	0.096640	0.053370	0.022026	0.011711
18	10	0.070352	0.094143	0.073015	0.034773	0.012000	0.005371
18	11	0.065412	0.081591	0.054976	0.022549	0.006526	0.002441
18	12	0.060791	0.070607	0.041232	0.014535	0.003533	0.001099
18	13	0.056468	0.061005	0.030786	0.009302	0.001898	0.000488
18	14	0.052425	0.052617	0.022870	0.005901	0.001009	0.000214
18	15	0.048646	0.045296	0.016888	0.003703	0.000529	0.000092
18	16	0.045113	0.038913	0.012385	0.002293	0.000271	0.000038
18	17	0.041812	0.033354	0.009007	0.001396	0.000136	0.000015
18	18	0.397214	0.150095	0.018014	0.001628	0.000102	0.000008
19	1	0.000000	0.000000	0.000000	0.000001	0.000003	0.000004
19	2	0.000000	0.000017	0.000990	0.007144	0.019078	0.025803
19	3	0.000037	0.000979	0.020439	0.088154	0.181281	0.226009
19	4	0.000672	0.007976	0.070688	0.182564	0.276370	0.310135
19	5	0.003884	0.025722	0.117736	0.195629	0.216514	0.214390
19	6	0.012178	0.050313	0.138593	0.162193	0.134565	0.115932
19	7	0.024247	0.072161	0.134928	0.119782	0.077088	0.057159
19	8	0.033468	0.083000	0.117571	0.083454	0.042929	0.027149
19	9	0.057345	0.097342	0.098406	0.056521	0.023687	0.012676
19	10	0.071848	0.097630	0.077310	0.037318	0.013005	0.005859
19	11	0.066834	0.084729	0.058412	0.024330	0.007122	0.002686
19	12	0.062141	0.073432	0.043980	0.015781	0.003888	0.001221
19	13	0.057751	0.063547	0.032985	0.010174	0.002110	0.000549
19	14	0.053644	0.054904	0.024629	0.006511	0.001136	0.000244
19	15	0.049804	0.047355	0.018296	0.004130	0.000604	0.000107
19	16	0.046213	0.040766	0.013511	0.002592	0.000317	0.000046
19	17	0.042857	0.035022	0.009908	0.001605	0.000163	0.000019
19	18	0.039721	0.030019	0.007206	0.000977	0.000081	0.000008
19	19	0.377354	0.135085	0.014412	0.001140	0.000061	0.000004

TABLE 4 (continued)

N	r	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
20	1	0.000000	0.000000	0.000000	0.000000	0.000001	0.000002
20	2	0.000000	0.000009	0.000667	0.005378	0.015177	0.020876
20	3	0.000020	0.000653	0.016394	0.077422	0.166639	0.210703
20	4	0.000428	0.006041	0.062408	0.173680	0.273035	0.310017
20	5	0.002872	0.021359	0.110230	0.194327	0.221608	0.221525
20	6	0.009014	0.043431	0.134396	0.165178	0.140320	0.121826
20	7	0.020821	0.066718	0.134731	0.124047	0.081295	0.060669
20	8	0.030673	0.079726	0.119599	0.087405	0.045629	0.029026
20	9	0.038067	0.084706	0.099452	0.059526	0.025331	0.013639
20	10	0.073345	0.101117	0.081605	0.039863	0.014009	0.006346
20	11	0.068256	0.087867	0.061848	0.026110	0.007717	0.002930
20	12	0.063492	0.076256	0.046729	0.017027	0.004242	0.001343
20	13	0.059034	0.066089	0.035184	0.011046	0.002321	0.000610
20	14	0.054863	0.057192	0.026388	0.007122	0.001262	0.000275
20	15	0.050962	0.049414	0.019703	0.004558	0.000680	0.000122
20	16	0.047314	0.042619	0.014637	0.002891	0.000362	0.000053
20	17	0.043903	0.036690	0.010809	0.001815	0.000190	0.000023
20	18	0.040714	0.031520	0.007926	0.001124	0.000098	0.000010
20	19	0.037735	0.027017	0.005765	0.000684	0.000049	0.000004
20	20	0.358486	0.121577	0.011529	0.000798	0.000037	0.000002
21	1	0.000000	0.000000	0.000000	0.000000	0.000001	0.000001
21	2	0.000000	0.000005	0.000449	0.004049	0.012073	0.016890
21	3	0.000011	0.000436	0.013136	0.067894	0.152916	0.196081
21	4	0.000283	0.004596	0.054996	0.164806	0.268987	0.309010
21	5	0.002061	0.017566	0.102849	0.192452	0.226102	0.228148
21	6	0.006761	0.037662	0.130073	0.167702	0.145817	0.127555
21	7	0.017275	0.060841	0.133901	0.127996	0.085405	0.064134
21	8	0.027771	0.076100	0.121221	0.091202	0.048296	0.030891
21	9	0.035720	0.082727	0.102082	0.062623	0.026973	0.014600
21	10	0.056918	0.092446	0.083594	0.042168	0.014998	0.006831
21	11	0.069678	0.091005	0.065284	0.027891	0.008313	0.003174
21	12	0.064843	0.079080	0.049478	0.018273	0.004596	0.001465
21	13	0.060318	0.068630	0.037383	0.011918	0.002533	0.000671
21	14	0.056083	0.059480	0.028147	0.007732	0.001388	0.000305
21	15	0.052120	0.051473	0.021111	0.004985	0.000756	0.000137
21	16	0.048414	0.044472	0.015763	0.003190	0.000407	0.000061
21	17	0.044948	0.038358	0.011709	0.002024	0.000217	0.000027
21	18	0.041708	0.033021	0.008647	0.001270	0.000114	0.000011
21	19	0.038679	0.028368	0.006341	0.000787	0.000059	0.000005
21	20	0.035849	0.024315	0.004612	0.000479	0.000029	0.000002
21	21	0.340562	0.109419	0.009223	0.000559	0.000022	0.000001

TABLE 4 (continued)

N	r	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
22	1	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
22	2	0.000000	0.000003	0.000303	0.003048	0.009604	0.013664
22	3	0.000006	0.000291	0.010513	0.059461	0.140115	0.182193
22	4	0.000183	0.003477	0.048355	0.156025	0.264340	0.307218
22	5	0.001459	0.014398	0.095732	0.190094	0.230035	0.234282
22	6	0.005469	0.033158	0.125768	0.169810	0.151063	0.133122
22	7	0.013611	0.054528	0.132438	0.131629	0.089420	0.067554
22	8	0.024762	0.072121	0.122438	0.094845	0.050929	0.032745
22	9	0.033276	0.080462	0.104453	0.065646	0.028603	0.015557
22	10	0.039594	0.082559	0.085122	0.044402	0.015981	0.007316
22	11	0.071100	0.094143	0.068720	0.029671	0.008908	0.003417
22	12	0.066194	0.081905	0.052227	0.019519	0.004950	0.001587
22	13	0.061601	0.071172	0.039582	0.012790	0.002744	0.000732
22	14	0.057302	0.061767	0.029907	0.008342	0.001515	0.000336
22	15	0.053278	0.053532	0.022518	0.005412	0.000831	0.000153
22	16	0.049514	0.046326	0.016888	0.003489	0.000453	0.000069
22	17	0.045993	0.040025	0.012610	0.002233	0.000244	0.000031
22	18	0.042701	0.034522	0.009367	0.001417	0.000130	0.000013
22	19	0.039622	0.029719	0.006918	0.000889	0.000068	0.000006
22	20	0.036745	0.025531	0.005073	0.000551	0.000035	0.000002
22	21	0.034056	0.021884	0.003689	0.000335	0.000018	0.000001
22	22	0.323534	0.098477	0.007379	0.000391	0.000013	0.000000
23	1	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
23	2	0.000000	0.000001	0.000204	0.002295	0.007639	0.011055
23	3	0.000003	0.000193	0.008407	0.052017	0.128222	0.169065
23	4	0.000117	0.002623	0.042437	0.147407	0.259194	0.304735
23	5	0.001030	0.011789	0.088924	0.187321	0.233441	0.239949
23	6	0.004335	0.028975	0.121257	0.171497	0.156065	0.138531
23	7	0.010679	0.048876	0.130709	0.134997	0.093342	0.070930
23	8	0.021645	0.067791	0.123249	0.098334	0.053530	0.034588
23	9	0.030736	0.077912	0.106565	0.068593	0.030222	0.016512
23	10	0.037551	0.081305	0.087665	0.046681	0.016964	0.007800
23	11	0.056345	0.087434	0.070680	0.031334	0.009498	0.003661
23	12	0.067545	0.084729	0.054976	0.020765	0.005305	0.001709
23	13	0.062884	0.073714	0.041781	0.013662	0.002955	0.000793
23	14	0.058521	0.064055	0.031666	0.008953	0.001641	0.000366
23	15	0.054437	0.055591	0.023925	0.005840	0.000907	0.000168
23	16	0.050615	0.048179	0.018014	0.003789	0.000498	0.000076
23	17	0.047039	0.041693	0.013511	0.002443	0.000271	0.000034
23	18	0.043694	0.036023	0.010088	0.001563	0.000146	0.000015
23	19	0.040566	0.031070	0.007494	0.000992	0.000078	0.000007
23	20	0.037641	0.026747	0.005534	0.000622	0.000041	0.000003

TABLE 4 (continued)

N	r	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
23	21	0.034908	0.022978	0.004058	0.000385	0.000021	0.000001
23	22	0.032353	0.019695	0.002951	0.000235	0.000011	0.000000
23	23	0.307357	0.088629	0.005903	0.000274	0.000008	0.000000
24	1	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
24	2	0.000000	0.000001	0.000137	0.001728	0.006077	0.008944
24	3	0.000002	0.000129	0.006719	0.045462	0.117210	0.156702
24	4	0.000075	0.001976	0.037185	0.139008	0.253637	0.301648
24	5	0.000736	0.009661	0.082451	0.184196	0.236352	0.245170
24	6	0.003368	0.025153	0.116612	0.172795	0.160831	0.143784
24	7	0.008523	0.043992	0.128790	0.138115	0.097173	0.074263
24	8	0.018421	0.063108	0.123655	0.101670	0.056098	0.036419
24	9	0.028098	0.075077	0.108418	0.071465	0.031830	0.017464
24	10	0.035420	0.079819	0.090041	0.048924	0.017943	0.008284
24	11	0.040782	0.079739	0.072345	0.032962	0.010086	0.003904
24	12	0.068896	0.087553	0.057724	0.022011	0.005659	0.001831
24	13	0.064168	0.076256	0.043980	0.014534	0.003167	0.000854
24	14	0.059740	0.066343	0.033425	0.009563	0.001767	0.000397
24	15	0.055595	0.057650	0.025333	0.006267	0.000982	0.000183
24	16	0.051715	0.050032	0.019140	0.004088	0.000543	0.000084
24	17	0.048084	0.043361	0.014412	0.002652	0.000298	0.000038
24	18	0.044687	0.037524	0.010809	0.001710	0.000163	0.000017
24	19	0.041509	0.032420	0.008070	0.001094	0.000088	0.000008
24	20	0.038537	0.027963	0.005995	0.000694	0.000047	0.000003
24	21	0.035759	0.024072	0.004427	0.000436	0.000025	0.000001
24	22	0.033162	0.020680	0.003247	0.000270	0.000013	0.000001
24	23	0.030736	0.017726	0.002361	0.000164	0.000006	0.000000
24	24	0.291989	0.079766	0.004722	0.000192	0.000005	0.000000
25	1	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
25	2	0.000000	0.000000	0.000093	0.001301	0.004834	0.007236
25	3	0.000001	0.000086	0.005366	0.039701	0.107042	0.145099
25	4	0.000048	0.001490	0.032539	0.130870	0.247749	0.298034
25	5	0.000535	0.007924	0.076324	0.180771	0.238800	0.249964
25	6	0.002573	0.021732	0.111901	0.173733	0.165367	0.148886
25	7	0.007184	0.039986	0.126753	0.140998	0.100916	0.077553
25	8	0.015089	0.058074	0.123656	0.104853	0.058634	0.038239
25	9	0.025364	0.071957	0.110011	0.074262	0.033426	0.018413
25	10	0.033202	0.078102	0.092252	0.051129	0.018917	0.008767
25	11	0.039009	0.079037	0.074659	0.034612	0.010674	0.004147
25	12	0.055647	0.082401	0.059529	0.023200	0.006011	0.001953
25	13	0.065451	0.078798	0.046179	0.015406	0.003378	0.000916
25	14	0.060959	0.068630	0.035184	0.010174	0.001894	0.000427

TABLE 4 (continued)

N	r	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
25	15	0.056753	0.059708	0.026740	0.006694	0.001058	0.000198
25	16	0.052815	0.051885	0.020266	0.004387	0.000589	0.000092
25	17	0.049129	0.045028	0.015312	0.002861	0.000326	0.000042
25	18	0.045680	0.039025	0.011529	0.001856	0.000179	0.000019
25	19	0.042452	0.033771	0.008647	0.001197	0.000098	0.000009
25	20	0.039433	0.029178	0.006456	0.000766	0.000053	0.000004
25	21	0.036610	0.025166	0.004796	0.000486	0.000028	0.000002
25	22	0.033971	0.021665	0.003542	0.000305	0.000015	0.000001
25	23	0.031504	0.018612	0.002597	0.000189	0.000008	0.000000
25	24	0.029199	0.015953	0.001889	0.000115	0.000004	0.000000
25	25	0.277390	0.071790	0.003778	0.000134	0.000003	0.000000

TABLE 5

UPPER CUMULATIVE PROBABILITY DISTRIBUTION OF THE LENGTH OF THE LONGEST RUN OF EITHER +VE OR -VE SIGNS

TABLE 5

UPPER CUMULATIVE PROBABILITY DISTRIBUTION OF THE LENGTH OF THE LONGEST RUN OF EITHER +VE OR -VE SIGNS

N	r	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
2	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
2	2	0.905000	0.820000	0.680000	0.580000	0.520000	0.500000
3	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
3	2	0.952500	0.910000	0.840000	0.790000	0.760000	0.750000
3	3	0.857500	0.730000	0.520000	0.370000	0.280000	0.250000
4	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
4	2	0.995487	0.983800	0.948800	0.911800	0.884800	0.875000
4	3	0.900488	0.803800	0.628800	0.491800	0.404800	0.375000
4	4	0.814513	0.656200	0.411200	0.248200	0.155200	0.125000
5	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
5	2	0.997744	0.991900	0.974400	0.955900	0.942400	0.937500
5	3	0.943475	0.877600	0.737600	0.613600	0.529600	0.500000
5	4	0.855244	0.721900	0.494400	0.325900	0.222400	0.187500
5	5	0.773781	0.590500	0.328000	0.170500	0.088000	0.062500
6	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
6	2	0.999786	0.998542	0.991808	0.981478	0.972352	0.968750
6	3	0.986248	0.949942	0.838208	0.716878	0.626752	0.593750
6	4	0.895975	0.787600	0.577600	0.403600	0.289600	0.250000
6	5	0.812471	0.649558	0.393792	0.222622	0.125248	0.093750
6	6	0.735092	0.531442	0.262208	0.118378	0.050752	0.031250
7	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
7	2	0.999893	0.999271	0.995904	0.990739	0.986176	0.984375
7	3	0.992267	0.969139	0.886336	0.784351	0.702784	0.671875
7	4	0.936706	0.853300	0.660800	0.481300	0.356800	0.312500
7	5	0.851160	0.708616	0.459584	0.274744	0.162496	0.125000
7	6	0.771847	0.584587	0.314688	0.154183	0.071872	0.046875
7	7	0.698337	0.478297	0.209728	0.082573	0.029632	0.015625

TABLE 5 (continued)

N	r	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
8	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
8	2	0.999990	0.999869	0.998689	0.996110	0.993364	0.992187
8	3	0.996437	0.982890	0.922627	0.836989	0.763241	0.734375
8	4	0.977427	0.918869	0.742689	0.555110	0.417364	0.367187
8	5	0.889849	0.767674	0.525376	0.326866	0.199744	0.156250
8	6	0.808601	0.637732	0.367168	0.189988	0.092992	0.062500
8	7	0.733254	0.526127	0.251681	0.107432	0.041812	0.023438
8	8	0.663420	0.430467	0.167775	0.057714	0.017452	0.007813
9	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
9	2	0.999995	0.999934	0.999345	0.998055	0.996682	0.996094
9	3	0.998852	0.991726	0.949210	0.878218	0.811994	0.785156
9	4	0.984977	0.941391	0.791022	0.611580	0.470817	0.417969
9	5	0.928539	0.826732	0.591168	0.378988	0.236992	0.187500
9	6	0.845356	0.690877	0.419648	0.225793	0.114112	0.078125
9	7	0.768171	0.573957	0.293635	0.132292	0.053993	0.031250
9	8	0.696591	0.473514	0.201331	0.075054	0.024563	0.011719
9	9	0.630249	0.387420	0.134218	0.040373	0.010340	0.003906
10	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
10	2	1.000000	0.999988	0.999790	0.999183	0.998407	0.998047
10	3	0.999432	0.995277	0.965292	0.907996	0.850347	0.826172
10	4	0.990868	0.959596	0.832433	0.662013	0.519754	0.464844
10	5	0.967227	0.885778	0.656750	0.430293	0.272647	0.216797
10	6	0.882110	0.744022	0.472128	0.261598	0.135232	0.093750
10	7	0.803088	0.621786	0.335588	0.157151	0.066173	0.039063
10	8	0.729762	0.516561	0.234888	0.092394	0.031675	0.015625
10	9	0.661762	0.426163	0.161062	0.052493	0.014528	0.005859
10	10	0.598737	0.348678	0.107374	0.028253	0.006151	0.001953
11	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
11	2	1.000000	0.999994	0.999895	0.999592	0.999204	0.999023
11	3	0.999759	0.997465	0.976584	0.930683	0.880937	0.859375
11	4	0.995100	0.973485	0.866921	0.706409	0.564175	0.507812
11	5	0.975979	0.909957	0.700858	0.473120	0.305821	0.245117
11	6	0.918865	0.797167	0.524608	0.297403	0.156352	0.109375
11	7	0.838005	0.669616	0.377541	0.182011	0.078354	0.046875
11	8	0.762933	0.559607	0.268444	0.109735	0.038787	0.019531
11	9	0.693274	0.464905	0.187906	0.064613	0.018717	0.007813
11	10	0.628674	0.383546	0.128849	0.036732	0.008633	0.002930
11	11	0.568800	0.313811	0.085899	0.019775	0.003670	0.000977

TABLE 5 (continued)

N	r	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
12	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
12	2	1.000000	0.999999	0.999966	0.999828	0.999618	0.999512
12	3	0.999910	0.998692	0.984340	0.947916	0.905324	0.886230
12	4	0.997677	0.983101	0.894757	0.745250	0.604596	0.547363
12	5	0.983235	0.930647	0.740636	0.513230	0.337608	0.272461
12	6	0.955620	0.850311	0.577054	0.333036	0.177090	0.124512
12	7	0.872922	0.717446	0.419494	0.206870	0.090534	0.054687
12	8	0.796105	0.602654	0.302001	0.127075	0.045898	0.023438
12	9	0.724787	0.503647	0.214750	0.076733	0.022905	0.009766
12	10	0.658611	0.418414	0.150324	0.045210	0.011115	0.003906
12	11	0.597240	0.345192	0.103079	0.025708	0.005146	0.001465
12	12	0.540360	0.282430	0.068719	0.013842	0.002194	0.000488
13	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
13	2	1.000000	0.999999	0.999983	0.999914	0.999809	0.999756
13	3	0.999959	0.999280	0.989400	0.960752	0.924679	0.907959
13	4	0.998596	0.988413	0.915833	0.778506	0.641169	0.583740
13	5	0.988993	0.947850	0.776087	0.550623	0.368007	0.298828
13	6	0.965356	0.875212	0.615757	0.364517	0.196947	0.139404
13	7	0.907838	0.765276	0.461448	0.231729	0.102715	0.062500
13	8	0.829276	0.645701	0.335557	0.144415	0.053010	0.027344
13	9	0.756299	0.542389	0.241594	0.088853	0.027093	0.011719
13	10	0.688547	0.453282	0.171799	0.053689	0.013596	0.004883
13	11	0.625680	0.376573	0.120259	0.031641	0.006623	0.001953
13	12	0.567378	0.310672	0.082463	0.017995	0.003074	0.000732
13	13	0.513342	0.254187	0.054976	0.009689	0.001313	0.000244
14	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
14	2	1.000000	1.000000	0.999995	0.999964	0.999908	0.999878
14	3	0.999983	0.999616	0.992859	0.970448	0.940083	0.925537
14	4	0.999207	0.992250	0.932944	0.807527	0.674373	0.617187
14	5	0.993254	0.961564	0.807208	0.585300	0.397019	0.324219
14	6	0.973742	0.897289	0.651705	0.394716	0.216358	0.154053
14	7	0.942755	0.813105	0.503396	0.256553	0.114804	0.070190
14	8	0.862447	0.688748	0.369114	0.161756	0.060122	0.031250
14	9	0.787812	0.581131	0.268438	0.100973	0.031282	0.013672
14	10	0.718484	0.488150	0.193274	0.062167	0.016078	0.005859
14	11	0.654120	0.407954	0.137439	0.037575	0.008099	0.002441
14	12	0.594396	0.338915	0.096207	0.022147	0.003955	0.000977
14	13	0.539009	0.279605	0.065971	0.012596	0.001839	0.000366
14	14	0.487675	0.228768	0.043980	0.006782	0.000786	0.000122

TABLE 5 (continued)

N	r	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
15	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
15	2	1.000000	1.000000	0.999997	0.999982	0.999954	0.999939
15	3	0.999993	0.999797	0.995199	0.977763	0.952343	0.939758
15	4	0.999579	0.994895	0.946663	0.832780	0.704511	0.647949
15	5	0.996019	0.971795	0.834036	0.617330	0.424713	0.348694
15	6	0.980777	0.916541	0.684900	0.423633	0.235323	0.168457
15	7	0.953288	0.838058	0.536547	0.279341	0.126577	0.077820
15	8	0.895618	0.731794	0.402670	0.179096	0.067233	0.035156
15	9	0.819324	0.619873	0.295282	0.113092	0.035470	0.015625
15	10	0.748421	0.523018	0.214749	0.070645	0.018559	0.006836
15	11	0.682560	0.439335	0.154619	0.043508	0.009575	0.002930
15	12	0.621414	0.367158	0.109951	0.026300	0.004836	0.001221
15	13	0.564676	0.305024	0.076966	0.015503	0.002366	0.000488
15	14	0.512059	0.251645	0.052777	0.008817	0.001101	0.000183
15	15	0.463291	0.205891	0.035184	0.004748	0.000471	0.000061
16	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
16	2	1.000000	1.000000	0.999999	0.999992	0.999978	0.999969
16	3	0.999997	0.999890	0.996761	0.983255	0.962089	0.951263
16	4	0.999779	0.996631	0.957566	0.854726	0.731866	0.676239
16	5	0.997287	0.978539	0.856555	0.646706	0.451109	0.372284
16	6	0.986460	0.932969	0.715340	0.451267	0.253842	0.182617
16	7	0.962602	0.860723	0.567939	0.301512	0.138203	0.085388
16	8	0.928789	0.774841	0.436226	0.196429	0.074323	0.039032
16	9	0.850837	0.658615	0.322126	0.125212	0.039658	0.017578
16	10	0.778358	0.557886	0.236224	0.079124	0.021041	0.007813
16	11	0.711000	0.470716	0.171799	0.049441	0.011052	0.003418
16	12	0.648432	0.395401	0.123695	0.030453	0.005717	0.001465
16	13	0.590343	0.330443	0.087961	0.018409	0.002892	0.000610
16	14	0.536442	0.274522	0.061573	0.010852	0.001416	0.000244
16	15	0.486456	0.226480	0.042221	0.006172	0.000660	0.000092
16	16	0.440127	0.185302	0.028147	0.003323	0.000283	0.000031
17	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
17	2	1.000000	1.000000	1.000000	0.999996	0.999989	0.999985
17	3	0.999999	0.999941	0.997818	0.987394	0.969844	0.960571
17	4	0.999873	0.997738	0.966186	0.873765	0.756681	0.702255
17	5	0.998216	0.983855	0.876180	0.673872	0.476299	0.395020
17	6	0.990793	0.946572	0.743026	0.477620	0.271914	0.196533
17	7	0.970697	0.881101	0.597571	0.323065	0.149680	0.092896
17	8	0.939953	0.799358	0.464152	0.212764	0.081300	0.042892
17	9	0.882349	0.697357	0.348970	0.137332	0.043847	0.019531
17	10	0.808295	0.592753	0.257699	0.087602	0.023522	0.008789
17	11	0.739440	0.502097	0.188979	0.055374	0.012528	0.003906

TABLE 5 (continued)

N	r	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
17	12	0.675450	0.423644	0.137439	0.034606	0.006597	0.001709
17	13	0.616010	0.355861	0.098956	0.021316	0.003419	0.000732
17	14	0.560826	0.297398	0.070369	0.012886	0.001732	0.000305
17	15	0.509620	0.247069	0.049258	0.007596	0.000849	0.000122
17	16	0.462133	0.203832	0.033777	0.004320	0.000396	0.000046
17	17	0.418120	0.166772	0.022518	0.002326	0.000169	0.000015
18	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
18	2	1.000000	1.000000	1.000000	0.999998	0.999995	0.999992
18	3	1.000000	0.999969	0.998531	0.990511	0.976012	0.968102
18	4	0.999930	0.998496	0.973079	0.890318	0.779201	0.726181
18	5	0.998865	0.987949	0.893194	0.698969	0.500334	0.416931
18	6	0.993776	0.957351	0.767962	0.502701	0.289551	0.210213
18	7	0.977573	0.899191	0.625442	0.343999	0.161008	0.100342
18	8	0.950018	0.822021	0.490952	0.228800	0.088225	0.046738
18	9	0.913862	0.736099	0.375814	0.149450	0.048030	0.021477
18	10	0.838232	0.627621	0.279174	0.096081	0.026004	0.009766
18	11	0.767880	0.533478	0.206159	0.061308	0.014004	0.004395
18	12	0.702468	0.451887	0.151183	0.038758	0.007478	0.001953
18	13	0.641678	0.381280	0.109951	0.024223	0.003945	0.000854
18	14	0.585210	0.320275	0.079165	0.014921	0.002047	0.000366
18	15	0.532785	0.267658	0.056295	0.009020	0.001037	0.000153
18	16	0.484139	0.222362	0.039406	0.005317	0.000509	0.000061
18	17	0.439026	0.183449	0.027022	0.003024	0.000237	0.000023
18	18	0.397214	0.150095	0.018014	0.001628	0.000102	0.000008
19	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
19	2	1.000000	1.000000	1.000000	0.999999	0.999997	0.999996
19	3	1.000000	0.999983	0.999010	0.992856	0.980919	0.974194
19	4	0.999962	0.999004	0.978570	0.904702	0.799638	0.748184
19	5	0.999291	0.991028	0.907883	0.722138	0.523267	0.438049
19	6	0.995407	0.965306	0.790147	0.526509	0.306753	0.223660
19	7	0.983229	0.914993	0.651554	0.364316	0.172188	0.107727
19	8	0.958982	0.842832	0.516626	0.244534	0.095101	0.050568
19	9	0.925513	0.759832	0.399055	0.161080	0.052172	0.023418
19	10	0.868169	0.662489	0.300649	0.104559	0.028486	0.010742
19	11	0.796320	0.564859	0.223338	0.067241	0.015481	0.004883
19	12	0.729486	0.480130	0.164927	0.042911	0.008359	0.002197
19	13	0.667345	0.406699	0.120946	0.027130	0.004472	0.000977
19	14	0.609594	0.343152	0.087961	0.016956	0.002362	0.000427
19	15	0.555949	0.288248	0.063332	0.010445	0.001226	0.000183
19	16	0.506146	0.240893	0.045036	0.006314	0.000622	0.000076
19	17	0.459932	0.200126	0.031525	0.003722	0.000305	0.000031
19	18	0.417075	0.165104	0.021617	0.002117	0.000142	0.000011
19	19	0.377354	0.135085	0.014412	0.001140	0.000061	0.000004

TABLE 5 (continued)

N	r	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
20	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
20	2	1.000000	1.000000	1.000000	1.000000	0.999999	0.999998
20	3	1.000000	0.999991	0.999333	0.994621	0.984822	0.979122
20	4	0.999980	0.999338	0.982939	0.917200	0.818183	0.768419
20	5	0.999552	0.993297	0.920531	0.743520	0.545148	0.458403
20	6	0.996680	0.971938	0.810301	0.549193	0.323540	0.236877
20	7	0.987666	0.928507	0.675905	0.384015	0.183220	0.115051
20	8	0.966845	0.861789	0.541174	0.259968	0.101926	0.054382
20	9	0.936172	0.782063	0.421575	0.172563	0.056297	0.025356
20	10	0.898105	0.697357	0.322123	0.113037	0.030966	0.011717
20	11	0.824760	0.596240	0.240518	0.073174	0.016957	0.005371
20	12	0.756504	0.508373	0.178671	0.047064	0.009240	0.002441
20	13	0.693012	0.432117	0.131941	0.030037	0.004998	0.001099
20	14	0.633977	0.366029	0.096757	0.018990	0.002677	0.000488
20	15	0.579114	0.308837	0.070369	0.011869	0.001415	0.000214
20	16	0.528152	0.259423	0.050665	0.007311	0.000735	0.000092
20	17	0.480838	0.216803	0.036029	0.004420	0.000373	0.000038
20	18	0.436936	0.180114	0.025220	0.002605	0.000183	0.000015
20	19	0.396221	0.148594	0.017294	0.001482	0.000085	0.000006
20	20	0.358486	0.121577	0.011529	0.000798	0.000037	0.000002
21	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
21	2	1.000000	1.000000	1.000000	1.000000	0.999999	0.999999
21	3	1.000000	0.999995	0.999551	0.995951	0.987927	0.983109
21	4	0.999989	0.999559	0.986414	0.928057	0.835011	0.787028
21	5	0.999706	0.994962	0.931419	0.763250	0.566023	0.478019
21	6	0.997645	0.977396	0.828570	0.570799	0.339922	0.249870
21	7	0.990884	0.939734	0.698497	0.403097	0.194105	0.122315
21	8	0.973609	0.878893	0.564596	0.275101	0.108700	0.058182
21	9	0.945838	0.802794	0.443375	0.183899	0.060404	0.027290
21	10	0.910118	0.720067	0.341293	0.121276	0.033431	0.012691
21	11	0.853200	0.627621	0.257698	0.079107	0.018433	0.005859
21	12	0.783522	0.536616	0.192415	0.051217	0.010121	0.002686
21	13	0.718679	0.457536	0.142937	0.032943	0.005524	0.001221
21	14	0.658361	0.388905	0.105553	0.021025	0.002992	0.000549
21	15	0.602279	0.329426	0.077406	0.013293	0.001604	0.000244
21	16	0.550158	0.277953	0.056295	0.008308	0.000848	0.000107
21	17	0.501744	0.233481	0.040532	0.005118	0.000441	0.000046
21	18	0.456796	0.195123	0.028823	0.003094	0.000224	0.000019
21	19	0.415089	0.162102	0.020176	0.001824	0.000110	0.000008
21	20	0.376410	0.133734	0.013835	0.001037	0.000051	0.000003
21	21	0.340562	0.109419	0.009223	0.000559	0.000022	0.000001

TABLE 5 (continued)

N	r	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
22	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
22	2	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
22	3	1.000000	0.999997	0.999697	0.996952	0.990396	0.986335
22	4	0.999994	0.999707	0.989184	0.937491	0.850281	0.804142
22	5	0.999811	0.996230	0.940829	0.781466	0.585941	0.496924
22	6	0.998352	0.981832	0.845097	0.591372	0.355906	0.262642
22	7	0.992883	0.948673	0.719329	0.421563	0.204843	0.129520
22	8	0.979272	0.894145	0.586892	0.289933	0.115424	0.061966
22	9	0.954510	0.822024	0.464454	0.195088	0.064494	0.029221
22	10	0.921234	0.741561	0.360000	0.129442	0.035891	0.013663
22	11	0.881640	0.659002	0.274878	0.085040	0.019910	0.006347
22	12	0.810540	0.564859	0.206158	0.055369	0.011001	0.002930
22	13	0.744346	0.482955	0.153932	0.035850	0.006051	0.001343
22	14	0.682745	0.411782	0.114349	0.023060	0.003307	0.000610
22	15	0.625443	0.350015	0.084442	0.014718	0.001792	0.000275
22	16	0.572165	0.296483	0.061924	0.009305	0.000961	0.000122
22	17	0.522650	0.250158	0.045036	0.005816	0.000508	0.000053
22	18	0.476657	0.210132	0.032426	0.003583	0.000264	0.000023
22	19	0.433957	0.175611	0.023058	0.002166	0.000134	0.000010
22	20	0.394335	0.145892	0.016141	0.001277	0.000066	0.000004
22	21	0.357590	0.120361	0.011068	0.000726	0.000031	0.000001
22	22	0.323534	0.098477	0.007379	0.000391	0.000013	0.000000
23	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
23	2	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
23	3	1.000000	0.999999	0.999796	0.997705	0.992361	0.988945
23	4	0.999997	0.999805	0.991389	0.945688	0.864139	0.819880
23	5	0.999880	0.997183	0.948952	0.798281	0.604945	0.515145
23	6	0.998849	0.985394	0.860028	0.610959	0.371504	0.275196
23	7	0.994514	0.956419	0.738771	0.439462	0.215439	0.136665
23	8	0.983835	0.907543	0.608062	0.304465	0.122097	0.065735
23	9	0.962190	0.839752	0.484812	0.206130	0.068566	0.031147
23	10	0.931454	0.761840	0.378247	0.137537	0.038344	0.014635
23	11	0.893903	0.680536	0.290582	0.090856	0.021380	0.006835
23	12	0.837558	0.593102	0.219902	0.059522	0.011882	0.003174
23	13	0.770013	0.508373	0.164927	0.038757	0.006577	0.001465
23	14	0.707129	0.434659	0.123145	0.025095	0.003622	0.000671
23	15	0.648608	0.370604	0.091479	0.016142	0.001981	0.000305
23	16	0.594171	0.315013	0.067554	0.010302	0.001074	0.000137
23	17	0.543556	0.266835	0.049540	0.006514	0.000576	0.000061
23	18	0.496518	0.225142	0.036029	0.004071	0.000305	0.000027
23	19	0.452824	0.189119	0.025941	0.002508	0.000159	0.000011
23	20	0.412259	0.158050	0.018447	0.001516	0.000080	0.000005

TABLE 5 (continued)

N	r	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
23	21	0.374618	0.131303	0.012913	0.000894	0.000039	0.000002
23	22	0.339710	0.108325	0.008854	0.000508	0.000018	0.000001
23	23	0.307357	0.088629	0.005903	0.000274	0.000008	0.000000
24	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
24	2	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
24	3	1.000000	0.999999	0.999863	0.998272	0.993923	0.991056
24	4	0.999998	0.999871	0.993144	0.952810	0.876713	0.834354
24	5	0.999924	0.997894	0.955959	0.813802	0.623076	0.532706
24	6	0.999188	0.988233	0.873507	0.629606	0.386724	0.287537
24	7	0.995820	0.963080	0.756895	0.456811	0.225893	0.143752
24	8	0.987297	0.919089	0.628106	0.318696	0.128720	0.069489
24	9	0.968877	0.855980	0.504450	0.217026	0.072621	0.033070
24	10	0.940778	0.780903	0.396033	0.145560	0.040792	0.015606
24	11	0.905358	0.701084	0.305991	0.096637	0.022849	0.007322
24	12	0.864576	0.621345	0.233646	0.063675	0.012763	0.003418
24	13	0.795680	0.533792	0.175922	0.041664	0.007104	0.001587
24	14	0.731512	0.457536	0.131941	0.027129	0.003937	0.000732
24	15	0.671772	0.391193	0.098516	0.017566	0.002170	0.000336
24	16	0.616177	0.333544	0.073183	0.011299	0.001187	0.000153
24	17	0.564462	0.283512	0.054043	0.007212	0.000644	0.000069
24	18	0.516379	0.240151	0.039632	0.004560	0.000346	0.000031
24	19	0.471692	0.202628	0.028823	0.002850	0.000183	0.000013
24	20	0.430183	0.170207	0.020753	0.001755	0.000095	0.000006
24	21	0.391646	0.142245	0.014757	0.001061	0.000048	0.000002
24	22	0.355887	0.118173	0.010330	0.000626	0.000024	0.000001
24	23	0.322725	0.097492	0.007084	0.000356	0.000011	0.000000
24	24	0.291989	0.079766	0.004722	0.000192	0.000005	0.000000
25	1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
25	2	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
25	3	1.000000	1.000000	0.999907	0.998699	0.995166	0.992764
25	4	0.999999	0.999914	0.994541	0.958998	0.888124	0.847665
25	5	0.999951	0.998424	0.962002	0.828128	0.640375	0.549631
25	6	0.999416	0.990500	0.885678	0.647357	0.401575	0.299667
25	7	0.996843	0.968767	0.773777	0.473624	0.236208	0.150781
25	8	0.989659	0.928781	0.647024	0.332627	0.135292	0.073227
25	9	0.974570	0.870707	0.523368	0.227774	0.076658	0.034988
25	10	0.949206	0.798750	0.413357	0.153512	0.043233	0.016576
25	11	0.916004	0.720648	0.321105	0.102382	0.024315	0.007809
25	12	0.876995	0.641611	0.246446	0.067770	0.013642	0.003662
25	13	0.821347	0.559210	0.186917	0.044570	0.007630	0.001709

TABLE 5 (continued)

N	r	p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
25	14	0.755896	0.480413	0.140737	0.029164	0.004252	0.000793
25	15	0.694937	0.411782	0.105553	0.018990	0.002358	0.000366
25	16	0.638184	0.352074	0.078813	0.012296	0.001300	0.000168
25	17	0.585368	0.300189	0.058547	0.007909	0.000712	0.000076
25	18	0.536239	0.255161	0.043235	0.005048	0.000386	0.000034
25	19	0.490560	0.216136	0.031705	0.003192	0.000207	0.000015
25	20	0.448107	0.182365	0.023058	0.001995	0.000110	0.000007
25	21	0.408674	0.153187	0.016602	0.001229	0.000057	0.000003
25	22	0.372064	0.128020	0.011806	0.000743	0.000029	0.000001
25	23	0.338093	0.106355	0.008264	0.000438	0.000014	0.000000
25	24	0.306588	0.087743	0.005667	0.000249	0.000007	0.000000
25	25	0.277390	0.071790	0.003778	0.000134	0.000003	0.000000

TABLE 6

MEAN, VARIANCE, STANDARD DEVIATION AND UPPER PERCENTILES OF THE DISTRIBUTION OF THE LENGTH OF THE LONGEST RUN OF EITHER +VE OR -VE SIGNS

TABLE 6

MEAN, VARIANCE, STANDARD DEVIATION AND UPPER PERCENTILES OF THE DISTRIBUTION OF THE LENGTH OF THE LONGEST RUN OF EITHER +VE OR -VE SIGNS

N		p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
	E(R)	18.376091	14.222528	9.481887	6.916830	5.471655	4.979944
25	V(R)	30.688297	27.961710	14.888956	7.669654	3.951380	2.641880
	S(R)	5.539702	5.287883	3.858621	2.769414	1.987808	1.625386
25	U50%	(19).49056	(14).48041	(10).41336	(7).47362	(6).40158	(6).29967
25	U25%	(**)******	(19).21614	(12).24645	(9).22777	(7).23621	(7).15078
25	U10%	(**)******	(24).08774	(16).07881	(12).06777	(9).07666	(8).07323
25	U 5%	(**)******	(**)******	(18).04323	(13).04457	(10).04323	(9).03499
25	U 2%	(**)******	(**)******	(21).01660	(15).01899	(12).01364	(10).01658
25	U 1%	(**)******	(**)******	(23).00826	(17).00791	(13).00763	(11).00781
	E(R)	18.926152	14.560346	9.650409	7.020552	5.540805	5.036356
26	V(R)	33.237067	29.600401	15.335662	7.815380	4.007680	2.667271
	S(R)	5.765160	5.440625	3.916077	2.795600	2.001919	1.633178
26	U50%	(20).46603	(15).43237	(10).43022	(7).48992	(6).41607	(6).31159
26	U25%	(**)******	(19).22964	(13).19791	(9).23838	(7).24639	(7).15775
26	U10%	(**)******	(24).09572	(16).08444	(12).07185	(9).08068	(8).07695
26	U 5%	(**)******	(**)******	(18).04684	(13).04748	(10).04567	(9).03690
26	U 2%	(**)******	(**)******	(21).01845	(16).01329	(12).01452	(10).01754
26	U 1%	(**)******	(**)******	(23).00944	(17).00861	(13).00816	(11).00830
	E(R)	19.459024	14.885013	9.812657	7.120581	5.607474	5.090650
27	V(R)	35.945395	31.240403	15.759464	7.952506	4.060856	2.691060
	S(R)	5.995448	5.589311	3.969819	2.820019	2.015157	1.640445
27	U50%	(20).48396	(15).45296	(10).44662	(8).35964	(6).43021	(6).32331
27	U25%	(**)******	(19).24315	(13).20830	(9).24883	(8).14829	(7).16467
27	U10%	(**)******	(25).08615	(16).09007	(12).07591	(9).08468	(8).08066
27	U 5%	(**)******	(**)******	(19).03747	(14).03323	(10).04810	(9).03881
27	U 2%	(**)******	(**)******	(22).01476	(16).01429	(12).01540	(10).01851
27	U 1%	(**)******	(**)******	(24).00756	(17).00931	(13).00868	(11).00878

TABLE 6 (continued)

N		p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
	E(R)	19.987318	15.202621	9.969473	7.217186	5.671838	5.142980
28	V(R)	38.653470	32.859388	16.164661	8.081970	4.111179	2.713386
	S(R)	6.217191	5.732311	4.020530	2.842881	2.027604	1.647236
28	U50%	(21).45976	(15).47355	(10).46256	(8).37274	(6).44401	(6).33483
28	U25%	(28).23783	(20).21884	(13).21857	(10).17693	(8).15471	(7).17152
28	U10%	(**)******	(25).09333	(16).09570	(12).07995	(9).08866	(8).08435
28	U 5%	(**)******	(**)******	(19).04035	(14).03527	(11).02870	(9).04072
28	U 2%	(**)******	(**)******	(22).01623	(16).01529	(12).01627	(10).01948
28	U 1%	(**)******	(**)******	(24).00850	(18).00651	(13).00921	(11).00927
	E(R)	20.499858	15.508782	10.120893	7.310583	5.734054	5.193483
29	V(R)	41.501130	34.468438	16.549614	8.204256	4.158881	2.734376
	S(R)	6.442137	5.870983	4.068122	2.864307	2.039333	1.653595
29	U50%	(21).47679	(15).49414	(10).47804	(8).38557	(6).45747	(6).34616
29	U25%	(28).24972	(20).23100	(13).22872	(10).18460	(8).16109	(7).17832
29	U10%	(**)******	(26).08399	(17).07656	(12).08398	(9).09263	(8).08803
29	U 5%	(**)******	(29).04710	(19).04323	(14).03729	(11).03016	(9).04263
29	U 2%	(**)******	(**)******	(22).01771	(16).01628	(12).01715	(11).00976
29	U 1%	(**)******	(**)******	(24).00944	(18).00700	(13).00973	(11).00976
	E(R)	21.008059	15.808516	10.267545	7.400987	5.794262	5.242285
30	V(R)	44.341452	36.051909	16.917714	8.320062	4.204176	2.754142
	S(R)	6.658938	6.004324	4.113115	2.884452	2.050409	1.659561
30	U50%	(21).49381	(16).44472	(10).49306	(8).39814	(6).47061	(6).35729
30	U25%	(29).23723	(20).24315	(13).23875	(10).19219	(8).16742	(7).18507
30	U10%	(**)******	(26).09046	(17).08106	(12).08799	(9).09658	(8).09170
30	U 5%	(**)******	(30).04239	(19).04612	(14).03931	(11).03161	(9).04453
30	U 2%	(**)******	(**)******	(22).01918	(16).01728	(12).01802	(11).01024
30	U 1%	(**)******	(**)******	(25).00756	(18).00749	(14).00583	(12).00488
	E(R)	21.501277	16.097830	10.409460	7.488577	5.852591	5.289496
31	V(R)	47.314157	37.622007	17.268051	8.429811	4.247253	2.772786
	S(R)	6.878529	6.133678	4.155484	2.903414	2.060886	1.665169
31	U50%	(22).46912	(16).46326	(11).40559	(8).41045	(6).48343	(6).36823
31	U25%	(29).24853	(21).21884	(13).24866	(10).19971	(8).17370	(7).19176
31	U10%	(**)******	(26).09692	(17).08557	(12).09198	(10).05775	(8).09535
31	U 5%	(**)******	(30).04663	(19).04900	(14).04132	(11).03307	(9).04642
31	U 2%	(**)******	(**)******	(23).01535	(16).01828	(12).01890	(11).01073
31	U 1%	(**)******	(**)******	(25).00831	(18).00798	(14).00614	(12).00512

TABLE 6 (continued)

N		p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
	E(R)	21.990327	16.381190	10.547140	7.573527	5.909155	5.335215
32	V(R)	50.274775	39.164797	17.603346	8.534043	4.288283	2.790402
	S(R)	7.090471	6.258178	4.195634	2.921308	2.070817	1.670450
32	U50%	(22).48530	(16).48179	(11).41864	(8).42250	(6).49594	(6).37899
32	U25%	(30).23610	(21).22978	(14).20030	(10).20716	(8).17993	(7).19839
32	U10%	(**)******	(27).08722	(17).09007	(12).09595	(10).06015	(8).09898
32	U 5%	(**)******	(31).04197	(20).03920	(14).04333	(11).03452	(9).04831
32	U 2%	(**)******	(**)******	(23).01653	(16).01928	(12).01977	(11).01121
32	U 1%	(**)******	(**)******	(25).00907	(18).00847	(14).00646	(12).00537
	E(R)	22.465631	16.655419	10.680670	7.655990	5.964060	5.379536
33	V(R)	53.348125	40.686861	17.923036	8.633126	4.327421	2.807071
	S(R)	7.303980	6.378625	4.233561	2.938218	2.080245	1.675432
33	U50%	(23).46104	(16).49688	(11).43139	(8).43431	(7).31393	(6).38956
33	U25%	(30).24683	(21).24072	(14).20840	(10).21454	(8).18612	(7).20497
33	U10%	(**)******	(27).09304	(17).09458	(12).09991	(10).06254	(9).05020
33	U 5%	(**)******	(31).04578	(20).04151	(14).04533	(11).03597	(10).02430
33	U 2%	(**)******	(**)******	(23).01771	(17).01349	(13).01183	(11).01170
33	U 1%	(**)******	(**)******	(25).00982	(18).00896	(14).00677	(12).00561
	E(R)	22.936494	16.923852	10.810401	7.736107	6.017402	5.422539
34	V(R)	56.415152	42.183734	18.229317	8.727477	4.364806	2.822872
	S(R)	7.511002	6.494901	4.269580	2.954230	2.089212	1.680140
34	U50%	(23).47640	(17).45028	(11).44385	(8).44588	(7).32307	(6).39996
34	U25%	(31).23449	(22).21665	(14).21642	(10).22185	(8).19226	(7).21150
34	U10%	(**)******	(27).09885	(17).09908	(13).07027	(10).06493	(9).05209
34	U 5%	(**)******	(31).04960	(20).04381	(14).04733	(11).03742	(10).02526
34	U 2%	(**)******	(**)******	(23).01889	(17).01419	(13).01235	(11).01218
34	U 1%	(**)******	(**)******	(26).00786	(18).00944	(14).00708	(12).00585
	E(R)	23.394715	17.184218	10.936457	7.814009	6.069267	5.464300
35	V(R)	59.577303	43.655104	18.521908	8.817413	4.400564	2.837871
	S(R)	7.718634	6.607201	4.303709	2.969413	2.097752	1.684598
35	U50%	(23).49177	(17).46418	(11).45604	(8).45722	(7).33209	(6).41017
35	U25%	(31).24469	(22).22650	(14).22437	(10).22910	(8).19835	(7).21797
35	U10%	(**)******	(28).08897	(18).07926	(13).07308	(10).06730	(9).05397
35	U 5%	(**)******	(32).04464	(20).04612	(14).04933	(11).03886	(10).02622
35	U 2%	(**)******	(**)******	(24).01511	(17).01489	(13).01288	(11).01267
35	U 1%	(**)******	(**)******	(26).00846	(18).00993	(14).00740	(12).00610

TABLE 6 (continued)

N		p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
	E(R)	23.848696	17.439240	11.059111	7.889814	6.119736	5.504889
36	V(R)	62.727819	45.099853	18.802550	8.903264	4.434811	2.852132
	S(R)	7.920090	6.715642	4.336191	2.983834	2.105899	1.688825
36	U50%	(24).46718	(17).47780	(11).46796	(8).46832	(7).34099	(6).42021
36	U25%	(32).23245	(22).23635	(14).23223	(10).23627	(8).20440	(7).22439
36	U10%	(**)******	(28).09420	(18).08287	(13).07588	(10).06968	(9).05585
36	U 5%	(**)******	(32).04807	(20).04842	(15).03459	(11).04030	(10).02718
36	U 2%	(**)******	(**)******	(24).01606	(17).01558	(13).01340	(11).01315
36	U 1%	(**)******	(**)******	(26).00907	(19).00695	(14).00771	(12).00634
	E(R)	24.290644	17.686873	11.178473	7.963632	6.168883	5.544370
37	V(R)	65.966759	46.518635	19.071162	8.985296	4.467648	2.865711
	S(R)	8.121992	6.820457	4.367054	2.997548	2.113681	1.692841
37	U50%	(24).48178	(17).49114	(11).47962	(8).47919	(7).34977	(6).43009
37	U25%	(32).24214	(22).24619	(14).24002	(10).24338	(8).21040	(7).23076
37	U10%	(**)******	(28).09944	(18).08640	(13).07868	(10).07205	(9).05772
37	U 5%	(**)******	(33).04326	(21).03874	(15).03599	(11).04174	(10).02814
37	U 2%	(**)******	(**)******	(24).01700	(17).01628	(13).01392	(11).01364
37	U 1%	(**)******	(**)******	(26).00967	(19).00730	(14).00803	(12).00658
	E(R)	24.728541	17.929565	11.294772	8.035565	6.216777	5.582799
38	V(R)	69.189429	47.910032	19.329125	9.063777	4.499172	2.878660
	S(R)	8.318018	6.921707	4.396490	3.010611	2.121125	1.696661
38	U50%	(24).49638	(18).44555	(11).49103	(8).48984	(7).35844	(6).43979
38	U25%	(33).23003	(23).22157	(14).24774	(11).17388	(8).21636	(7).23707
38	U10%	(**)******	(29).08949	(18).08993	(13).08146	(10).07441	(9).05959
38	U 5%	(**)******	(33).04635	(21).04058	(15).03740	(11).04318	(10).02910
38	U 2%	(**)******	(38).01825	(24).01794	(17).01697	(13).01445	(11).01412
38	U 1%	(**)******	(**)******	(27).00774	(19).00764	(14).00834	(12).00683
	E(R)	25.155357	18.165681	11.408118	8.105706	6.263479	5.620233
39	V(R)	72.484263	49.272894	19.576494	9.138934	4.529467	2.891025
	S(R)	8.513769	7.019465	4.424533	3.023067	2.128254	1.700301
39	U50%	(25).47156	(18).45786	(12).40585	(9).36361	(7).36699	(6).44933
39	U25%	(33).23923	(23).23044	(15).20006	(11).17914	(8).22227	(7).24333
39	U10%	(**)******	(29).09420	(18).09344	(13).08424	(10).07676	(9).06146
39	U 5%	(**)******	(33).04945	(21).04243	(15).03880	(11).04462	(10).03005
39	U 2%	(**)******	(39).01642	(24).01889	(17).01767	(13).01497	(11).01460
39	U 1%	(**)******	(**)******	(27).00822	(19).00798	(14).00865	(12).00707

TABLE 6 (continued)

N		p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
	E(R)	25.577945	18.397041	11.518684	8.174144	6.309050	5.656720
40	V(R)	75.767641	50.610245	19.814358	9.210984	4.558612	2.902849
	S(R)	8.704461	7.114088	4.451332	3.034960	2.135091	1.703775
40	U50%	(25).48543	(18).46994	(12).41586	(9).37235	(7).37542	(6).45870
40	U25%	(33).24843	(23).23930	(15).20640	(11).18436	(8).22813	(7).24954
40	U10%	(**)******	(29).09891	(18).09694	(13).08701	(10).07911	(9).06332
40	U 5%	(**)******	(34).04450	(21).04427	(15).04020	(11).04605	(10).03101
40	U 2%	(**)******	(39).01807	(24).01983	(17).01836	(13).01549	(11).01509
40	U 1%	(**)******	(**)******	(27).00870	(19).00832	(14).00897	(12).00731
	E(R)	25.990302	18.622502	11.626581	8.240957	6.353542	5.692306
41	V(R)	79.109007	51.917905	20.042866	9.280120	4.586677	2.914170
	S(R)	8.894324	7.205408	4.476926	3.046329	2.141653	1.707094
41	U50%	(25).49930	(18).48180	(12).42570	(9).38096	(7).38374	(6).46792
41	U25%	(34).23601	(23).24816	(15).21270	(11).18955	(8).23396	(8).13104
41	U10%	(**)******	(30).08902	(19).07767	(13).08977	(10).08146	(9).06518
41	U 5%	(**)******	(34).04728	(21).04612	(15).04159	(11).04748	(10).03196
41	U 2%	(**)******	(39).01971	(25).01587	(17).01905	(13).01601	(11).01557
41	U 1%	(**)******	(**)******	(27).00919	(19).00866	(14).00928	(12).00756
	E(R)	26.398633	18.843570	11.731955	8.306222	6.397007	5.727036
42	V(R)	82.434087	53.199638	20.262881	9.346521	4.613729	2.925023
	S(R)	9.079322	7.293808	4.501431	3.057208	2.147959	1.710270
42	U50%	(26).47434	(18).49343	(12).43538	(9).38946	(7).39196	(6).47698
42	U25%	(34).24475	(24).22335	(15).21894	(11).19471	(8).23974	(8).13454
42	U10%	(**)******	(30).09326	(19).08049	(13).09252	(10).08379	(9).06703
42	U 5%	(**)******	(35).04255	(21).04796	(15).04299	(11).04891	(10).03292
42	U 2%	(**)******	(40).01774	(25).01662	(17).01975	(13).01654	(11).01605
42	U 1%	(**)******	(**)******	(27).00967	(19).00900	(14).00960	(12).00780
	E(R)	26.797221	19.059203	11.834902	8.370010	6.439491	5.760948
43	V(R)	85.811595	54.452520	20.474590	9.410351	4.639825	2.935439
	S(R)	9.263455	7.379195	4.524886	3.067630	2.154025	1.713312
43	U50%	(26).48751	(19).44834	(12).44490	(9).39784	(7).40006	(6).48588
43	U25%	(35).23252	(24).23132	(15).22514	(11).19984	(8).24547	(8).13801
43	U10%	(**)******	(30).09750	(19).08330	(13).09527	(10).08613	(9).06888
43	U 5%	(**)******	(35).04506	(21).04979	(15).04438	(12).02933	(10).03387
43	U 2%	(**)******	(40).01922	(25).01738	(18).01383	(13).01706	(11).01654
43	U 1%	(**)******	(**)******	(28).00774	(19).00934	(14).00991	(12).00804

TABLE 6 (continued)

N		p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
	E(R)	27.191943	19.270745	11.935547	8.432384	6.481038	5.794080
44	V(R)	89.169579	55.679902	20.678697	9.471762	4.665022	2.945448
	S(R)	9.442965	7.461897	4.547384	3.077623	2.159866	1.716231
44	U50%	(27).46314	(19).45911	(12).45425	(9).40610	(7).40805	(6).49464
44	U25%	(35).24082	(24).23930	(15).23128	(11).20493	(9).15011	(8).14148
44	U10%	(**)******	(31).08775	(19).08610	(13).09800	(10).08845	(9).07073
44	U 5%	(**)******	(35).04756	(22).03984	(15).04577	(12).03019	(10).03482
44	U 2%	(**)******	(41).01729	(25).01813	(18).01432	(13).01758	(11).01702
44	U 1%	(**)******	(44).00970	(28).00812	(19).00968	(15).00594	(12).00829
	E(R)	27.577658	19.477377	12.033978	8.493407	6.521689	5.826468
45	V(R)	92.567395	56.878285	20.875415	9.530893	4.689369	2.955075
	S(R)	9.621195	7.541769	4.568962	3.087214	2.165495	1.719033
45	U50%	(27).47565	(19).46970	(12).46345	(9).41425	(7).41594	(7).27984
45	U25%	(35).24913	(24).24728	(15).23738	(11).20999	(9).15381	(8).14493
45	U10%	(45).09944	(31).09156	(19).08889	(14).06906	(10).09077	(9).07257
45	U 5%	(**)******	(36).04280	(22).04131	(15).04716	(12).03106	(10).03577
45	U 2%	(**)******	(41).01862	(25).01889	(18).01480	(13).01810	(11).01750
45	U 1%	(**)******	(45).00873	(28).00851	(20).00678	(15).00613	(12).00853
	E(R)	27.959425	19.680117	12.130298	8.553135	6.561483	5.858143
46	V(R)	95.948778	58.052455	21.065301	9.587872	4.712913	2.964345
	S(R)	9.795345	7.619216	4.589695	3.096429	2.170925	1.721727
46	U50%	(27).48817	(19).48011	(12).47249	(9).42229	(7).42372	(7).28576
46	U25%	(36).23667	(25).22255	(15).24342	(11).21502	(9).15749	(8).14836
46	U10%	(46).09447	(31).09538	(19).09167	(14).07101	(10).09309	(9).07441
46	U 5%	(**)******	(36).04506	(22).04277	(15).04855	(12).03192	(10).03672
46	U 2%	(**)******	(41).01995	(25).01965	(18).01529	(13).01862	(11).01798
46	U 1%	(**)******	(45).00960	(28).00890	(20).00702	(15).00632	(12).00877
	E(R)	28.332844	19.878394	12.224591	8.611623	6.600455	5.889137
47	V(R)	99.359091	59.198060	21.248584	9.642818	4.735696	2.973278
	S(R)	9.967903	7.694028	4.609619	3.105289	2.176165	1.724320
47	U50%	(28).46376	(19).49033	(12).48138	(9).43022	(7).43140	(7).29162
47	U25%	(36).24456	(25).22973	(15).24942	(11).22002	(9).16116	(8).15178
47	U10%	(46).09919	(31).09920	(19).09444	(14).07296	(10).09539	(9).07625
47	U 5%	(**)******	(36).04731	(22).04423	(15).04993	(12).03278	(10).03767
47	U 2%	(**)******	(42).01796	(26).01572	(18).01577	(13).01914	(11).01846
47	U 1%	(**)******	(46).00864	(28).00928	(20).00726	(15).00650	(12).00901

TABLE 6 (continued)

N		p=0.05	p=0.10	p=0.20	p=0.30	p=0.40	p=0.50
	E(R)	28.702486	20.073047	12.316944	8.668921	6.638639	5.919477
48	V(R)	102.74964 6	60.319985	21.425721	9.695841	4.757757	2.981895
	S(R)	10.136550	7.766594	4.628793	3.113815	2.181228	1.726816
48	U50%	(28).47565	(20).44603	(12).49013	(9).43804	(7).43898	(7).29743
48	U25%	(37).23233	(25).23691	(16).20195	(11).22498	(9).16481	(8).15519
48	U10%	(47).09423	(32).08928	(19).09721	(14).07490	(10).09770	(9).07808
48	U 5%	(**)******	(36).04956	(22).04569	(16).03505	(12).03364	(10).03862
48	U 2%	(**)******	(42).01916	(26).01632	(18).01626	(13).01966	(11).01895
48	U 1%	(**)******	(46).00943	(28).00967	(20).00750	(15).00669	(12).00926
	E(R)	29.064169	20.263563	12.407430	8.725077	6.676067	5.949192
49	V(R)	106.16499 7	61.414720	21.596930	9.747045	4.779134	2.990214
	S(R)	10.303640	7.836754	4.647250	3.122026	2.186123	1.729223
49	U50%	(28).48755	(20).45553	(12).49872	(9).44575	(7).44645	(7).30320
49	U25%	(37).23982	(25).24409	(16).20692	(11).22991	(9).16845	(8).15859
49	U10%	(47).09872	(32).09271	(19).09997	(14).07684	(10).09999	(9).07991
49	U 5%	(**)******	(37).04461	(22).04715	(16).03603	(12).03450	(10).03957
49	U 2%	(**)******	(43).01724	(26).01692	(18).01674	(14).01179	(11).01943
49	U 1%	(**)******	(47).00848	(29).00774	(20).00774	(15).00688	(12).00950
	E(R)	29.422235	20.450697	12.496129	8.780134	6.712768	5.978305
50	V(R)	109.55769 1	62.486438	21.762593	9.796523	4.799859	2.998250
	S(R)	10.466981	7.904836	4.665039	3.129940	2.190858	1.731546
50	U50%	(28).49944	(20).46487	(13).41451	(9).45336	(7).45383	(7).30892
50	U25%	(37).24732	(26).21968	(16).21185	(11).23481	(9).17207	(8).16197
50	U10%	(48).09378	(32).09614	(20).08020	(14).07877	(11).06027	(9).08174
50	U 5%	(**)******	(37).04663	(22).04860	(16).03701	(12).03536	(10).04051
50	U 2%	(**)******	(43).01832	(26).01753	(18).01723	(14).01210	(11).01991
50	U 1%	(**)******	(47).00919	(29).00805	(20).00797	(15).00707	(12).00974

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