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TABLES OF JOINT PROBABILITIES USEFUL IN EVALUATING MIXED ACCEPTANCE SAMPLING PLANS

by

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and

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TABLES OF JOINT PROBABILITIES USEFUL IN EVALUATING MIXED ACCEPTANCE SAMPLING PLANS

by

E. G. Schilling[1]

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1. INTRODUCTION

This report supplements Technical Reports No. N-26 [1] and No. N-27 [2] and provides tables for the evaluation of OC curves and associated measures of dependent mixed variables-attributes sampling plans for the case of single specification limit, and known standard deviation, assuming a normal distribution. The tables give values of $P_n(i, \bar{x} > A)$, the joint probability of a sample mean greater than some limit A and exactly i defectives in a sample, for sample sizes n = 4 to 10, values of i = 0, 1, 2, and fraction defective p = .005, .01, .02, .05, .10, .15, .20.

These tables can be used in assessing the properties of various types of dependent mixed plans, by setting up the appropriate equations for such measures as the probability of acceptance (P_a), average sample number (ASN), average outgoing quality (AOQ), and average total inspection (ATI). The method for evaluating one such plan of particular importance is presented below for reference.

2. PROCEDURE AND EVALUATION

2.1 Procedure

Technical Report No. N-27 presented a generalized dependent mixed

[1]The material in this report is based in part on work being done in preparation of a doctoral dissertation at Rutgers - The State University.

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procedure, with provision for two attributes acceptance numbers, which is felt to be especially advantageous because of its potential and flexibility. This procedure is given below together with the formulas that apply to it. The formulas are given for the case of an upper specification limit (U). When a lower specification limit (L) is involved, the procedure and the formulas are easily modified by reversing all inequalities in the variables constituent of the plan and changing the sign of the argument in the tables given in the appendix to convert to tables of $P_n(i, \bar{x} \leq A)$.

Let:

N = lot size

n_1 = first sample size

n_2 = second sample size

A = acceptance limit[2] on sample mean ($\bar{x}$)

c_1 = attributes acceptance number on first sample

c_2 = attributes acceptance number on second sample.

The steps for carrying out the generalized plan are as follows:

1. Determine the parameters of the mixed plan: n_1, n_2, A, c_1, c_2.
2. Take a random sample of n_1 from the lot.
3. If the sample average $\bar{x} \leq A$, accept the lot.
4. If the sample average $\bar{x} > A$, examine the first sample for the number of defectives d_1 therein.
5. If $d_1 > c_1$, reject the lot.
6. If $d_1 \leq c_1$, take a second random sample of n_2 from the lot and determine the number of defectives d_2 therein.

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[2] Of the several methods of specifying the variables constituent of known standard deviation (σ) variables plans, designation by sample size (n_1) and acceptance limit on the sample average (A) is used here since it simplifies the notation somewhat. Note that $A = (U - k\sigma)$ for upper specification limit (U) and standard variables acceptance factor k. $A = (L + k\sigma)$ if a lower specification limit (L) is employed.

7. If in the combined sample of $n = n_1 + n_2$, the total number of defectives $d = d_1 + d_2 \leq c_2$, accept the lot.

8. If $d > c_2$, reject the lot.

When semi-curtailed inspection is employed, a desirable practice and normally to be recommended, the procedure remains the same, except that if c_2 is exceeded at any time during the inspection of the second sample, inspection is stopped at once and the lot is rejected.

The operating characteristic curve and associated measures of the plan can be determined using the formulas shown in Table 1, where,

$P(V)$ = probability of V

$P(V,W)$ = joint probability of V and W

$P(i;n)$ = probability of i defectives in a sample of n.

Under semi-curtailed inspection the formulas for P_a, ATI, and AOQ remain the same as for complete inspection of the second sample and are as shown in Table 1; however, the average sample number under curtailed inspection (ASN_c) becomes that shown in Table 1.

TABLE 1

FORMULAS FOR PROBABILITY OF ACCEPTANCE AND ASSOCIATED MEASURES

Measure	Formula
Probability of Acceptance (P_a)	$P_a = P(\bar{x} \leq A) + \sum_{i=0}^{c_1} \sum_{j=0}^{c_2-i} P_{n_1}(i, \bar{x} > A) P(j; n_2)$
Average Sample Number (ASN)	$ASN = n_1 + n_2 \sum_{i=0}^{c_1} P_{n_1}(i, \bar{x} > A)$
Average Sample Number for Semi-curtailed Inspection (ASN_c)	$ASN_c = n_1 + \sum_{i=0}^{c_1} P_{n_1}(i, \bar{x} > A) \left[\frac{c_2-i+1}{p} \sum_{k=c_2-i+2}^{n_2+1} P(k; n_2+1) + n_2 \sum_{j=0}^{c_2-i} P(j; n_2) \right]$
Average Total Inspection (ATI)	$ATI = ASN + (N-n_1) \sum_{i=c_1+1}^{n_1} P_{n_1}(i, \bar{x} > A) + (N-n_1-n_2)(1-P_a - \sum_{i=c_1+1}^{n_1} P_{n_1}(i, \bar{x} > A))$
Average Outgoing Quality (AOQ)	$AOQ = \frac{p}{N} \left[P(\bar{x} \leq A)(N-n_1) + (P_a - P(\bar{x} \leq A))(N-n_1-n_2) \right]$

It is possible to evaluate the expressions shown above using tables of $P_n(i,\bar{x} > A)$ for a "standard normal universe" (i.e., normal, $\mu = 0$, $\sigma = 1$) as given in the appendix of this report. To accomplish this the value of $P_n(i,\bar{x} > A)$ for a particular application can be found by use of the z transformation.

Let:

μ = population (process) mean

σ = population (process) standard deviation - known

p = population (process) fraction defective

$\bar{x}$ = sample mean.

Then:

$$P_n(i,\bar{x} > A) = P_n(i,\bar{z} > z_A)$$

where $\bar{z}$ and z_A are standard normal deviates such that

$$\bar{z} = \frac{\bar{x}-\mu}{\sigma}$$

and

$$z_A = \frac{A-\mu}{\sigma}.$$

The tables in the appendix are entered with these values for the sample mean and the acceptance limit. Directions for their use are given in the appendix.
Note that for values of $z < -2.50$,

$$P_n(i,\bar{z} > z_A) \simeq P(i;n\ )$$

Variables plans to be incorporated in a mixed procedure are often expressed in terms of sample size, n, and acceptance factor k. The relationship between k, A, z_A and z_U is shown in Figure 1.

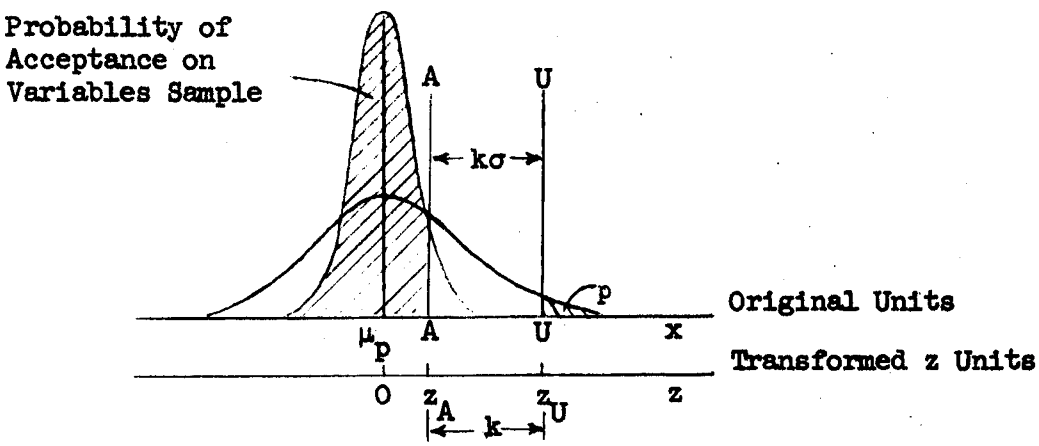

Figure 1 - Relationship Between k, A, z_A and z_U

2.2 Example

As an illustration of the method of evaluating a given plan, consider the following example:

> The maximum temperature of operation for a certain device is specified as 209.0°F. The standard deviation of the process producing these devices is known to be 4.0°F from past experience substantiated by a control chart. Suppose, arbitrarily, the plan[3] to be applied is as follows:

$n_1 = 5$ $\qquad k = 2.0$

$n_2 = 20$ $\qquad c_1 = 1,\ c_2 = 2$

Here:

$U = 209.0^\circ F$

$\sigma = 4.0^\circ F$

$A = U - k\sigma = 209.0 - 2.0(4.0) = 201.0^\circ F.$

For this the procedure would be carried out as follows:

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[3]Normally we would not expect to use $c_1=1$ for a small sample of $n_1=5$, but it is used here to show more fully what calculations may be involved.

STEP	RESULT OR ACTION
1. Determine parameters of plan.	$n_1 = 5$, $n_2 = 20$, $A = 201.0$, $c_1 = 1$, $c_2 = 2$.
2. Take sample of $n_1 = 5$ from lot.	First sample results: 205, 202, 208, 198, 207.
3. If $\bar{x} \leq A$, accept the lot.	$\bar{x} = 204$; not $\leq A = 201.0$, so go to next step.
4. If $\bar{x} > A$, examine first sample for number of defectives, d_1, therein.	No sample value $> U = 209.0$, so $d_1 = 0$.
5. If $d_1 > c_1$, reject the lot.	$d_1 = 0$; not $> c_1 = 1$, so go to next step.
6. If $d_1 \leq c_1$ take second sample of $n_2 = 20$ and determine number of defectives, d_2, therein.	Second sample results: 3 defectives, in $n_2 = 20$, so $d_2 = 3$.
7. If in combined sample, total defectives $d = d_1 + d_2 \leq c_2$, accept the lot.	$d = d_1 + d_2 = 0 + 3 = 3$ not $\leq c_2 = 2$, so go to next step.
8. If $d > c_2$, reject the lot.	$d = 3 > c_2 = 2$; reject the lot.

Suppose the probability of acceptance and associated measures are to be calculated for fraction defective p = .02.

Thus, since the distribution is normal, p = .02 implies the distribution of individuals for p = .02 will be as indicated in Figure 2, and from a normal probability table we find z_U = ,205 for p = .02. Thus[4],

$$z_A = z_U - k = 2.05 - 2.0 = 0.05$$

[4]The example is for a mixed plan specified in terms of n_1, k, n_2, c_1 and c_2. For plans having variables constituant specified directly in terms of acceptance limit A and first sample size n_1, determine z_A as $z_A = z_U - (\frac{U-A}{\sigma})$. The relationship between μ, A, U, z_A, z_U and k is shown in Figure 1.

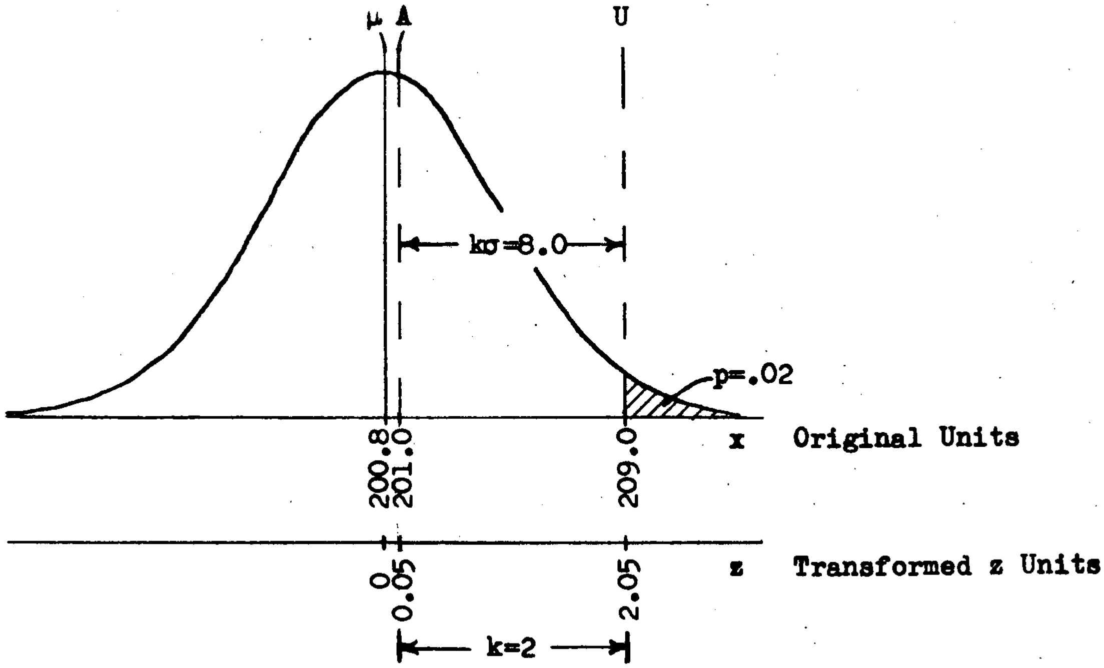

Figure 2 - Distribution When p=.02, Known σ=4.0

The following, then, are the probability of acceptance and associated measures of the plan given above. Note, that in calculating the probability of acceptance under the variables part of the plan, $P(\bar{x} \leq A)$, z_A is adjusted by multiplying by $\sqrt{n_1}$ to express the deviation of A from μ in terms of the standard error of the mean, $\sigma_{\bar{x}} = \sigma/\sqrt{n}$, so that the standard normal probability tables can be used. No such adjustment is necessary in finding values of $P_n(i,\bar{x} > A)$ in the appendix since the tables are constructed to be evaluated directly in terms of the standard deviation of individuals, σ.

1. Probability of Acceptance (at p = .02)

$$P_a = P(\bar{x} \leq A) + \sum_{i=0}^{c_1} \sum_{j=0}^{c_2 - i} P_{n_1}(i,\bar{x} > A)P(j;20)$$

$$= P(\bar{z} \leq \sqrt{n_1}z_A) + P_5(0,\bar{z} > z_A)\sum_{j=0}^{2} P(j;20) + P_5(1,\bar{z} > z_A)\sum_{j=0}^{1} (j;20)$$

$$= P(\bar{z} \leq \sqrt{5}(0.05)) + P_5(0,\bar{z} > 0.05)\sum_{j=0}^{2} P(j;20) + P_5(1,\bar{z} > 0.05)\sum_{j=0}^{1} (j;20)$$

$$= .5445 + .3736(.9929) + .078(.9401)$$

$$= .988$$

2. Average Sample Number (at p = .02)

$$ASN = n_1 + n_2 \sum_{i=0}^{c_1} P_{n_1}(i, \bar{x} > A)$$

$$= 5 + 20 \sum_{i=0}^{1} P_5(i, \bar{z} > z_A)$$

$$= 5 + 20 \sum_{i=0}^{1} P_5(i, \bar{z} > 0.05)$$

$$= 5 + 20 \left[.3736 + .078\right]$$

$$= 14.04$$

3. Average Sample Number Under Semi-Curtailed Inspection (at p = .02)

$$ASN_c = n_1 + \sum_{i=0}^{c_1} P_{n_1}(i, \bar{x} > A) \left[\frac{c_2 - i + 1}{p} \sum_{k=c_2-i+2}^{n_2+1} P(k; n_2+1) + n_2 \sum_{j=0}^{c_2-i} P(j; n_2) \right]$$

$$= 5 + \sum_{i=0}^{1} P_5(i, \bar{z} > 0.05) \left[\frac{2-i+1}{.02} \sum_{k=2-i+2}^{20+1} P(k; 20+1) + 20 \sum_{j=0}^{2-i} P(j; 20) \right]$$

$$= 5 + .3736 \left[\frac{3-0}{.02} \sum_{k=4-0}^{21} P(k; 21) + 20 \sum_{j=0}^{2-0} P(j; 20) \right]$$

$$+ .078 \left[\frac{3-1}{.02} \sum_{k=4-1}^{21} P(k; 21) + 20 \sum_{j=0}^{2-1} P(j; 20) \right]$$

$$= 5 + .3736 \left[150(.0007) + 20(.9929) \right] + .078 \left[100(.0081) + 20(.9401) \right]$$

$$= 13.99$$

4. Average Total Inspection, for Lot Size N=1000 (at p = .02)

$$ATI = ASN + (N-n_1) \sum_{i=c_1+1}^{n_1} P_{n_1}(i,\bar{x} > A) + (N-n_1-n_2)\left(1-P_a - \sum_{i=c_1+1}^{n_1} P_{n_1}(i,\bar{x} > A)\right)$$

$$= ASN + (1000-5) \sum_{i=1+1}^{20} P_5(i,\bar{z} > 0.05) + (1000-5-20)\left(1-P_a - \sum_{i=1+1}^{n_1} P_5(i,\bar{z} > 0.05)\right)$$

but

$$\sum_{i=2}^{5} P_5(i,\bar{x} > A) = P(\bar{x} > A) - \sum_{i=0}^{1} P_5(i,\bar{x} > A)$$

$$\sum_{i=2}^{5} P_5(i,\bar{z} > 0.05) = P(\bar{z} > \sqrt{5}(0.05)) - \sum_{i=0}^{1} P_5(i,\bar{z} > 0.05)$$

$$= .4555 - (.3736 + .078)$$

$$= .004$$

so

$$ATI = 14.04 + 995\,(.004) + 975\,(1 - .988 - .004)$$

$$= 14.04 + 3.98 + 7.80$$

$$= 25.82$$

5. Average Outgoing Quality, for Lot Size = 1000 (at p = .02)

$$AOQ = \frac{p}{N}\left[P(\bar{x} \le A)(N-n_1) + (P_a - P(\bar{x} \le A))\,(N-n_1-n_2)\right]$$

$$= \frac{.02}{1000}\left[P(\bar{z} \le \sqrt{n_1}z_A)(1000-5) + (.988-P(\bar{z} \le \sqrt{n_1}z_A))\,(1000-5-20)\right]$$

$$= .00002\,[.5445(995) + (.998-.5445)(975)]$$

$$= .0197$$

3. VALUES OF $P_n(i, \bar{x} > A)$

3.1 The Nature of $P_n(i, \bar{x} > A)$

As indicated in Technical Report N-26 [1], the probability $P_n(i, \bar{x} > A)$ can be evaluated by use of the formulas:

$$P_n(i, \bar{z} > z_A) = \int_{z_A}^{z_U} \frac{\sqrt{n}}{\sqrt{2\pi}} e^{-\frac{nt^2}{2}} F_n(z_U - t)dt \qquad , i = 0$$

and,

$$P_n(i, \bar{z} > z_A) = \binom{n}{i} \int_{z_U}^{\infty} \int_{\frac{nz_A - iw}{n-i}}^{z_U} \frac{\sqrt{i(n-i)}}{2\pi} e^{-\frac{1}{2}[iw^2 + (n-i)y^2]}$$

$$F_i(w - z_U)F_{n-i}(z_U - y)dydw \qquad , i > 0$$

where

z_A = z value of acceptance limit for the sample mean

z_U = z value of the upper specification limit

$\bar{z}$ = z value of a sample mean

t,y,w = variables of integration

$F_n(u)$ = cumulative probability of the extreme deviate from the sample mean in studentized form (u) from a sample of n as tabulated by Nair [3] and Grubbs [4].

$P_n(i, \bar{z} > z_A)$, then, represents the probability desired for samples taken from a standard normal universe, i.e. a normal distribution having mean 0 and standard deviation 1. Using the z transformation, for a particular value of i:

$$P_n(i, \overline{x} > A) = P_n(i, \overline{z} = (\frac{\overline{x}-\mu}{\sigma}) > z_A = (\frac{A-\mu}{\sigma}))$$

and conversely

$$P_n(i, \overline{z} > z_A) = P_n(i, \overline{x} = (\overline{z}\sigma+\mu) > A = (z_A\sigma+\mu))$$

3.2 Computation of Tables

Values of $P_n(i, \overline{x} > A)$ for samples from a standard normal universe were calculated on the 7040 computer at the Computation Center of Rutgers - The State University using a program based on the scheme presented in [1]. This program integrates, using the extended Simpson's rule, with a provision for varying the number of intervals automatically to achieve less than a predetermined residual error in the resulting answer. All interpolations are performed using the Lagrangian six point formula which has proved to be more than adequate in most cases. The routine was designed to accept either the Nair [3] or the Grubbs [4] tables of $F_n(u)$ as input[5]. For samples of size less than 10, Nair's tables are to be preferred because of smaller increments in the argument and greater precision. Grubbs' tables can be employed for sample sizes 10 to 25. Tables of $P_n(0, \overline{x} > A)$ were prepared and used as input for computation of $P_n(i, \overline{x} > A)$ for acceptance numbers greater than zero as indicated in [1].

The program was designed to calculate the residual error for each integration; if the error exceeded a predetermined limit the number of intervals was automatically increased until the error was made small enough or until the number of intervals reached 1000. The final printout included the residual error for each integration. Residual error for all entries in the appendix is less than 5×10^{-6}.

Generated and propagated error were also investigated. Forward difference tables were prepared on all input data, i.e., $F_n(u)$ and

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[5] $F_n(u)$ is the cumulative probability of the extreme deviate from the sample mean in studentized form.

$P_n(0, \bar{z} > z_A)$, to assess the generated error resulting from the interpolations performed and to check their accuracy. Propagated error throughout the entire program was investigated by examining the increment of the function involved as approximated by the total differential. Thus, an upper bound was determined for the magnitude of the maximum error[6]. Because of the extremely conservative nature of this approach the actual error in the tabulated values is expected to be much less than the upper bound. As a result the values presented in the appendix are believed to be accurate to 4 places when c = 0 and 3 places when c = 1, 2.

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[6]For sample sizes less than 10 the upper bound was determined as 5×10^{-5} for c = 0; 5×10^{-5} for c - 1, 2. For sample size 10 the upper bound was 5×10^{-5} for c = 0; 6×10^{-3} for c = 1 and 2×10^{-2} for c = 2.

4. REFERENCES

[1] Schilling, E. G. and H. F. Dodge. On Some Joint Probabilities Useful in Mixed Acceptance Sampling. Technical Report No. N-26. Rutgers - The State University Statistics Center, December, 1966.

[2] Schilling, E. G. and H. F. Dodge. Dependent Mixed Acceptance Sampling Plans and Their Evaluation. Technical Report No. N-27. Rutgers - The State University Statistics Center, April, 1967.

[3] Nair, K. R. "The Distribution of the Extreme Deviate from the Sample Mean and Its Studentized Form," Biometrika, May, 1948, pp. 118-144.

[4] Grubbs, F. E. "Sample Criteria for Testing Outlying Observations," Annals of Mathematical Statistics, March, 1950, pp. 27-58.

APPENDIX - TABLES

The following tables give values of the joint probability of a sample mean greater than a given limit z_A and i defectives in the sample, for samples from the standard normal distribution, i.e. one having mean 0, and standard deviation 1.

To use these tables to evaluate $P_n(i,\bar{x} > A)$ for some specified fraction defective p, with known standard deviation σ, upper specification limit U, and acceptance limit A, for i defectives in a sample of n, proceed as follows:

(1) Determine the standard normal deviate cutting off an upper tail area of p in the normal distribution. Call this z_U. By definition, this corresponds to the z-value of U.

(2) Calculate:

$$z_A = z_U - \left(\frac{U-A}{\sigma}\right) = z_U - k.$$

(3) From the appropriate table for n and i, find the probability desired in the column headed with the specified value of p and in the row corresponding to z_A.

For example, to obtain $P_5(0,\bar{x} > 201.0)$ for fraction defective p = .02, with known standard deviation σ = 4.0, upper specification limit 209.0 and acceptance limit A = 201.0 for exactly i = 0 defectives in a sample of n = 5:

(1) From normal tables, the z value cutting off an upper tail area of p = .02 is:

$$z_U = 2.05$$

(2) Calculate

$$z_A = 2.05 - \left(\frac{209.0-201.0}{4.0}\right) = .05$$

(3) From the table for n = 5, i = 0, under fraction defective p = .02, the probability corresponding to z_A = .05 as the argument is:

$$P_5(0,\bar{x} > 201.0) = .3736.$$

4. APPENDIX

JOINT PROBABILITY OF SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES, IN SAMPLES FROM A NORMAL DISTRIBUTION ($\mu=0,\sigma=1$)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

n = 4
i = 0

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-2.50	.9801	.9606	.9224	.8145	.6561	.5220	.4096
-2.45	.9801	.9606	.9224	.8145	.6561	.5220	.4096
-2.40	.9801	.9606	.9224	.8145	.6561	.5220	.4096
-2.35	.9801	.9606	.9224	.8145	.6561	.5220	.4096
-2.30	.9801	.9606	.9224	.8145	.6561	.5220	.4096
-2.25	.9801	.9606	.9224	.8145	.6561	.5220	.4096
-2.20	.9801	.9606	.9224	.8145	.6561	.5220	.4096
-2.15	.9801	.9606	.9224	.8145	.6561	.5220	.4096
-2.10	.9801	.9606	.9224	.8145	.6561	.5220	.4096
-2.05	.9801	.9606	.9223	.8145	.6561	.5220	.4096
-2.00	.9801	.9606	.9223	.8145	.6561	.5220	.4096
-1.95	.9801	.9605	.9223	.8145	.6561	.5220	.4096
-1.90	.9801	.9605	.9223	.8144	.6560	.5219	.4095
-1.85	.9800	.9605	.9223	.8144	.6560	.5219	.4095
-1.80	.9800	.9604	.9222	.8143	.6559	.5218	.4094
-1.75	.9799	.9604	.9221	.8143	.6559	.5218	.4094
-1.70	.9798	.9603	.9220	.8142	.6558	.5217	.4093
-1.65	.9797	.9601	.9219	.8140	.6556	.5215	.4091
-1.60	.9795	.9599	.9217	.8138	.6554	.5213	.4089
-1.55	.9792	.9596	.9214	.8135	.6551	.5210	.4086
-1.50	.9788	.9592	.9210	.8132	.6548	.5207	.4083
-1.45	.9783	.9587	.9205	.8126	.6542	.5201	.4078
-1.40	.9776	.9580	.9198	.8120	.6536	.5195	.4071
-1.35	.9767	.9571	.9189	.8110	.6526	.5186	.4062
-1.30	.9755	.9559	.9177	.8098	.6515	.5174	.4050
-1.25	.9739	.9544	.9162	.8083	.6499	.5159	.4035
-1.20	.9720	.9524	.9142	.8063	.6479	.5139	.4016
-1.15	.9694	.9499	.9116	.8038	.6454	.5114	.3992
-1.10	.9662	.9467	.9085	.8006	.6423	.5083	.3961
-1.05	.9623	.9427	.9045	.7967	.6384	.5045	.3924
-1.00	.9574	.9378	.8996	.7918	.6336	.4998	.3878
-0.95	.9514	.9319	.8937	.7859	.6277	.4941	.3823
-0.90	.9442	.9247	.8865	.7787	.6207	.4872	.3757
-0.85	.9356	.9160	.8778	.7701	.6122	.4790	.3678
-0.80	.9254	.9058	.8676	.7600	.6023	.4694	.3587
-0.75	.9133	.8938	.8556	.7481	.5907	.4583	.3482
-0.70	.8994	.8799	.8417	.7343	.5774	.4455	.3362
-0.65	.8834	.8638	.8257	.7185	.5621	.4310	.3227
-0.60	.8651	.8456	.8075	.7006	.5448	.4148	.3077
-0.55	.8445	.8250	.7870	.6804	.5256	.3967	.2913
-0.50	.8215	.8021	.7642	.6580	.5043	.3770	.2735

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-0.45	.7962	.7768	.7390	.6333	.4810	.3557	.2545
-0.40	.7684	.7490	.7114	.6065	.4559	.3330	.2345
-0.35	.7383	.7190	.6816	.5775	.4292	.3090	.2138
-0.30	.7061	.6869	.6497	.5467	.4010	.2841	.1927
-0.25	.6719	.6528	.6159	.5143	.3716	.2586	.1715
-0.20	.6359	.6170	.5805	.4804	.3415	.2328	.1505
-0.15	.5985	.5798	.5437	.4456	.3108	.2071	.1301
-0.10	.5600	.5415	.5060	.4101	.2802	.1820	.1106
-0.05	.5208	.5025	.4677	.3744	.2498	.1577	.0924
0.00	.4811	.4632	.4291	.3388	.2203	.1346	.0756
0.05	.4416	.4240	.3908	.3039	.1919	.1131	.0606
0.10	.4024	.3853	.3532	.2699	.1651	.0934	.0474
0.15	.3642	.3475	.3165	.2374	.1400	.0757	.0362
0.20	.3271	.3110	.2813	.2065	.1170	.0601	.0268
0.25	.2915	.2760	.2477	.1777	.0963	.0467	.0192
0.30	.2578	.2430	.2162	.1511	.0779	.0354	.0132
0.35	.2261	.2120	.1868	.1269	.0619	.0261	.0087
0.40	.1966	.1834	.1599	.1052	.0482	.0187	.0055
0.45	.1696	.1571	.1354	.0860	.0368	.0129	.0032
0.50	.1449	.1334	.1135	.0693	.0274	.0086	.0018
0.55	.1228	.1121	.0940	.0550	.0199	.0055	.0009
0.60	.1030	.0933	.0770	.0430	.0141	.0033	.0004
0.65	.0856	.0768	.0623	.0330	.0097	.0019	.0001
0.70	.0705	.0626	.0498	.0248	.0064	.0010	.0000
0.75	.0575	.0504	.0393	.0183	.0041	.0005	.0000
0.80	.0463	.0401	.0305	.0133	.0025	.0002	.0000
0.85	.0370	.0316	.0234	.0094	.0014	.0001	.0000
0.90	.0292	.0246	.0177	.0065	.0008	.0000	.0000
0.95	.0228	.0189	.0132	.0043	.0004	.0000	.0000
1.00	.0176	.0143	.0096	.0028	.0002	.0000	.0000
1.05	.0134	.0107	.0069	.0018	.0001	.0000	.0000
1.10	.0101	.0079	.0049	.0011	.0000	.0000	.0000
1.15	.0075	.0057	.0034	.0006	.0000	.0000	.0000
1.20	.0055	.0041	.0023	.0003	.0000	.0000	.0000
1.25	.0040	.0029	.0015	.0002	.0000	.0000	.0000
1.30	.0029	.0020	.0010	.0001	.0000	.0000	.0000
1.35	.0020	.0013	.0006	.0000	.0000	.0000	.0000
1.40	.0014	.0009	.0004	.0000	.0000	.0000	.0000
1.45	.0010	.0006	.0002	.0000	.0000	.0000	.0000
1.50	.0006	.0004	.0001	.0000	.0000	.0000	.0000
1.55	.0004	.0002	.0001	.0000	.0000	.0000	.0000
1.60	.0003	.0001	.0000	.0000	.0000	.0000	.0000
1.65	.0002	.0001	.0000	.0000	.0000	.0000	.0000
1.70	.0001	.0000	.0000	.0000	.0000	.0000	.0000
1.75	.0001	.0000	.0000	.0000	.0000	.0000	.0000
1.80	.0000	.0000	.0000	.0000	.0000	.0000	.0000

JOINT PROBABILITY OF
SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES,
IN SAMPLES FROM A NORMAL DISTRIBUTION (μ=0,σ=1)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

n = 4
i = 1

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-2.50	.020	.039	.075	.171	.292	.368	.410
-2.45	.020	.039	.075	.171	.292	.368	.410
-2.40	.020	.039	.075	.171	.292	.368	.410
-2.35	.020	.039	.075	.171	.292	.368	.410
-2.30	.020	.039	.075	.171	.292	.368	.410
-2.25	.020	.039	.075	.171	.292	.368	.410
-2.20	.020	.039	.075	.171	.292	.368	.410
-2.15	.020	.039	.075	.171	.292	.368	.410
-2.10	.020	.039	.075	.171	.292	.368	.410
-2.05	.020	.039	.075	.171	.292	.368	.410
-2.00	.020	.039	.075	.171	.292	.368	.410
-1.95	.020	.039	.075	.171	.292	.368	.410
-1.90	.020	.039	.075	.171	.292	.368	.410
-1.85	.020	.039	.075	.171	.292	.368	.410
-1.80	.020	.039	.075	.171	.292	.368	.410
-1.75	.020	.039	.075	.171	.292	.368	.410
-1.70	.020	.039	.075	.171	.292	.368	.410
-1.65	.020	.039	.075	.171	.292	.368	.410
-1.60	.020	.039	.075	.171	.292	.368	.410
-1.55	.020	.039	.075	.171	.292	.368	.410
-1.50	.020	.039	.075	.171	.292	.368	.410
-1.45	.020	.039	.075	.171	.292	.368	.410
-1.40	.020	.039	.075	.171	.292	.368	.410
-1.35	.020	.039	.075	.171	.292	.368	.410
-1.30	.020	.039	.075	.171	.292	.368	.410
-1.25	.020	.039	.075	.171	.292	.368	.410
-1.20	.020	.039	.075	.171	.292	.368	.409
-1.15	.020	.039	.075	.171	.292	.368	.409
-1.10	.020	.039	.075	.171	.291	.368	.409
-1.05	.020	.039	.075	.171	.291	.368	.409
-1.00	.020	.039	.075	.171	.291	.368	.409
-0.95	.020	.039	.075	.171	.291	.368	.408
-0.90	.020	.039	.075	.171	.291	.367	.408
-0.85	.020	.039	.075	.171	.291	.367	.407
-0.80	.020	.039	.075	.171	.291	.366	.406
-0.75	.020	.039	.075	.171	.290	.365	.404
-0.70	.020	.039	.075	.171	.290	.364	.402
-0.65	.020	.039	.075	.171	.289	.363	.400
-0.60	.020	.039	.075	.170	.288	.361	.396
-0.55	.020	.039	.075	.170	.286	.358	.392
-0.50	.020	.039	.075	.169	.285	.355	.387

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-0.45	.020	.039	.075	.169	.283	.351	.381
-0.40	.020	.038	.074	.168	.280	.346	.373
-0.35	.020	.038	.074	.166	.277	.340	.364
-0.30	.019	.038	.074	.165	.272	.332	.353
-0.25	.019	.038	.073	.163	.268	.324	.341
-0.20	.019	.038	.073	.161	.262	.314	.326
-0.15	.019	.038	.072	.158	.255	.302	.310
-0.10	.019	.037	.071	.155	.247	.289	.292
-0.05	.019	.037	.070	.151	.238	.275	.273
0.00	.019	.036	.068	.147	.228	.259	.252
0.05	.018	.036	.067	.142	.217	.241	.230
0.10	.018	.035	.065	.137	.205	.223	.207
0.15	.018	.034	.063	.131	.191	.204	.184
0.20	.017	.033	.061	.124	.177	.184	.160
0.25	.017	.032	.058	.117	.163	.164	.138
0.30	.016	.031	.056	.109	.148	.144	.116
0.35	.016	.029	.053	.102	.133	.124	.096
0.40	.015	.028	.050	.093	.118	.106	.078
0.45	.014	.026	.046	.085	.103	.088	.061
0.50	.014	.025	.043	.076	.089	.072	.047
0.55	.013	.023	.039	.068	.075	.058	.035
0.60	.012	.021	.036	.060	.063	.045	.026
0.65	.011	.019	.032	.052	.051	.035	.018
0.70	.010	.018	.029	.045	.041	.026	.012
0.75	.009	.016	.025	.038	.033	.019	.008
0.80	.008	.014	.022	.032	.025	.013	.005
0.85	.007	.012	.019	.026	.019	.009	.003
0.90	.007	.011	.016	.021	.014	.006	.002
0.95	.006	.009	.014	.017	.010	.004	.001
1.00	.005	.008	.011	.013	.007	.002	.001
1.05	.004	.007	.009	.010	.005	.001	.000
1.10	.004	.006	.008	.007	.003	.001	.000
1.15	.003	.005	.006	.005	.002	.000	.000
1.20	.003	.004	.005	.004	.001	.000	.000
1.25	.002	.003	.004	.003	.001	.000	.000
1.30	.002	.002	.003	.002	.000	.000	.000
1.35	.001	.002	.002	.001	.000	.000	.000
1.40	.001	.001	.002	.001	.000	.000	.000
1.45	.001	.001	.001	.000	.000	.000	.000
1.50	.001	.001	.001	.000	.000	.000	.000
1.55	.000	.001	.001	.000	.000	.000	.000
1.60	.000	.000	.000	.000	.000	.000	.000
1.65	.000	.000	.000	.000	.000	.000	.000
1.70	.000	.000	.000	.000	.000	.000	.000
1.75	.000	.000	.000	.000	.000	.000	.000
1.80	.000	.000	.000	.000	.000	.000	.000

JOINT PROBABILITY OF
SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES,
IN SAMPLES FROM A NORMAL DISTRIBUTION (μ=0,σ=1)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN
IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

n = 4
i = 2

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-2.50	.000	.001	.002	.014	.049	.098	.154
-2.45	.000	.001	.002	.014	.049	.098	.154
-2.40	.000	.001	.002	.014	.049	.098	.154
-2.35	.000	.001	.002	.014	.049	.098	.154
-2.30	.000	.001	.002	.014	.049	.098	.154
-2.25	.000	.001	.002	.014	.049	.098	.154
-2.20	.000	.001	.002	.014	.049	.098	.154
-2.15	.000	.001	.002	.014	.049	.098	.154
-2.10	.000	.001	.002	.014	.049	.098	.154
-2.05	.000	.001	.002	.014	.049	.098	.154
-2.00	.000	.001	.002	.014	.049	.098	.154
-1.95	.000	.001	.002	.014	.049	.098	.154
-1.90	.000	.001	.002	.014	.049	.098	.154
-1.85	.000	.001	.002	.014	.049	.098	.154
-1.80	.000	.001	.002	.014	.049	.098	.154
-1.75	.000	.001	.002	.014	.049	.098	.154
-1.70	.000	.001	.002	.014	.049	.098	.154
-1.65	.000	.001	.002	.014	.049	.098	.154
-1.60	.000	.001	.002	.014	.049	.098	.154
-1.55	.000	.001	.002	.014	.049	.098	.154
-1.50	.000	.001	.002	.014	.049	.098	.154
-1.45	.000	.001	.002	.014	.049	.098	.154
-1.40	.000	.001	.002	.014	.049	.098	.154
-1.35	.000	.001	.002	.014	.049	.098	.154
-1.30	.000	.001	.002	.014	.049	.098	.154
-1.25	.000	.001	.002	.014	.049	.098	.154
-1.20	.000	.001	.002	.014	.049	.098	.154
-1.15	.000	.001	.002	.014	.049	.098	.154
-1.10	.000	.001	.002	.014	.049	.098	.154
-1.05	.000	.001	.002	.014	.049	.098	.154
-1.00	.000	.001	.002	.014	.049	.098	.154
-0.95	.000	.001	.002	.014	.049	.098	.154
-0.90	.000	.001	.002	.014	.049	.098	.154
-0.85	.000	.001	.002	.014	.049	.098	.154
-0.80	.000	.001	.002	.014	.049	.098	.154
-0.75	.000	.001	.002	.014	.049	.098	.154
-0.70	.000	.001	.002	.014	.049	.098	.154
-0.65	.000	.001	.002	.014	.049	.098	.154
-0.60	.000	.001	.002	.014	.049	.098	.154
-0.55	.000	.001	.002	.014	.049	.098	.154
-0.50	.000	.001	.002	.014	.049	.098	.153

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-0.45	.000	.001	.002	.014	.049	.098	.153
-0.40	.000	.001	.002	.014	.049	.097	.153
-0.35	.000	.001	.002	.014	.049	.097	.153
-0.30	.000	.001	.002	.014	.049	.097	.153
-0.25	.000	.001	.002	.014	.049	.097	.152
-0.20	.000	.001	.002	.014	.048	.097	.151
-0.15	.000	.001	.002	.014	.048	.097	.150
-0.10	.000	.001	.002	.014	.048	.096	.149
-0.05	.000	.001	.002	.014	.048	.096	.147
0.00	.000	.001	.002	.013	.048	.095	.145
0.05	.000	.001	.002	.013	.048	.094	.143
0.10	.000	.001	.002	.013	.047	.092	.139
0.15	.000	.001	.002	.013	.047	.091	.135
0.20	.000	.001	.002	.013	.046	.089	.130
0.25	.000	.001	.002	.013	.046	.086	.124
0.30	.000	.001	.002	.013	.045	.083	.118
0.35	.000	.001	.002	.013	.044	.080	.110
0.40	.000	.001	.002	.013	.042	.076	.102
0.45	.000	.001	.002	.013	.041	.071	.093
0.50	.000	.001	.002	.012	.039	.066	.084
0.55	.000	.001	.002	.012	.037	.061	.074
0.60	.000	.001	.002	.012	.035	.055	.064
0.65	.000	.001	.002	.011	.032	.049	.055
0.70	.000	.001	.002	.011	.029	.043	.046
0.75	.000	.001	.002	.010	.027	.037	.037
0.80	.000	.001	.002	.009	.024	.031	.029
0.85	.000	.001	.002	.009	.021	.026	.023
0.90	.000	.001	.002	.008	.018	.021	.017
0.95	.000	.000	.002	.007	.015	.016	.013
1.00	.000	.000	.002	.007	.013	.013	.009
1.05	.000	.000	.002	.006	.010	.009	.007
1.10	.000	.000	.001	.005	.008	.007	.004
1.15	.000	.000	.001	.004	.006	.005	.003
1.20	.000	.000	.001	.004	.005	.003	.002
1.25	.000	.000	.001	.003	.004	.002	.001
1.30	.000	.000	.001	.002	.003	.002	.001
1.35	.000	.000	.001	.002	.002	.001	.001
1.40	.000	.000	.001	.001	.001	.001	.000
1.45	.000	.000	.001	.001	.001	.000	.000
1.50	.000	.000	.000	.001	.001	.000	.000
1.55	.000	.000	.000	.001	.000	.000	.000
1.60	.000	.000	.000	.000	.000	.000	.000
1.65	.000	.000	.000	.000	.000	.000	.000
1.70	.000	.000	.000	.000	.000	.000	.000
1.75	.000	.000	.000	.000	.000	.000	.000
1.80	.000	.000	.000	.000	.000	.000	.000

JOINT PROBABILITY OF
SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES,
IN SAMPLES FROM A NORMAL DISTRIBUTION (μ=0,σ=1)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN
IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

n = 5
i = 0

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-2.50	.9752	.9510	.9039	.7738	.5905	.4437	.3277
-2.45	.9752	.9510	.9039	.7738	.5905	.4437	.3277
-2.40	.9752	.9510	.9039	.7738	.5905	.4437	.3277
-2.35	.9752	.9510	.9039	.7738	.5905	.4437	.3277
-2.30	.9752	.9510	.9039	.7738	.5905	.4437	.3277
-2.25	.9752	.9510	.9039	.7738	.5905	.4437	.3277
-2.20	.9752	.9510	.9039	.7738	.5905	.4437	.3277
-2.15	.9752	.9510	.9039	.7738	.5905	.4437	.3277
-2.10	.9752	.9510	.9039	.7738	.5905	.4437	.3277
-2.05	.9752	.9510	.9039	.7738	.5905	.4437	.3277
-2.00	.9752	.9510	.9039	.7738	.5905	.4437	.3277
-1.95	.9752	.9510	.9039	.7738	.5905	.4437	.3277
-1.90	.9752	.9510	.9039	.7738	.5905	.4437	.3277
-1.85	.9752	.9510	.9039	.7738	.5905	.4437	.3277
-1.80	.9752	.9510	.9039	.7738	.5905	.4437	.3277
-1.75	.9752	.9509	.9039	.7737	.5904	.4437	.3276
-1.70	.9752	.9509	.9038	.7737	.5904	.4436	.3276
-1.65	.9751	.9509	.9038	.7737	.5904	.4436	.3276
-1.60	.9751	.9508	.9037	.7737	.5903	.4435	.3275
-1.55	.9750	.9507	.9037	.7735	.5902	.4434	.3274
-1.50	.9749	.9506	.9035	.7734	.5901	.4433	.3273
-1.45	.9747	.9504	.9033	.7732	.5899	.4431	.3271
-1.40	.9744	.9501	.9030	.7729	.5896	.4428	.3268
-1.35	.9740	.9497	.9027	.7725	.5892	.4425	.3264
-1.30	.9734	.9492	.9021	.7720	.5887	.4419	.3259
-1.25	.9727	.9484	.9013	.7712	.5879	.4412	.3252
-1.20	.9716	.9473	.9003	.7701	.5869	.4401	.3242
-1.15	.9702	.9459	.8989	.7687	.5855	.4388	.3228
-1.10	.9683	.9440	.8970	.7669	.5836	.4370	.3211
-1.05	.9658	.9416	.8945	.7644	.5812	.4346	.3188
-1.00	.9626	.9383	.8913	.7612	.5780	.4315	.3159
-0.95	.9584	.9342	.8871	.7571	.5740	.4276	.3121
-0.90	.9532	.9289	.8819	.7518	.5689	.4227	.3075
-0.85	.9466	.9223	.8753	.7453	.5626	.4167	.3018
-0.80	.9384	.9142	.8672	.7373	.5548	.4093	.2949
-0.75	.9285	.9043	.8573	.7275	.5454	.4004	.2867
-0.70	.9165	.8923	.8453	.7158	.5342	.3899	.2771
-0.65	.9022	.8780	.8311	.7018	.5209	.3776	.2660
-0.60	.8854	.8613	.8144	.6855	.5055	.3634	.2533
-0.55	.8659	.8418	.7951	.6666	.4878	.3473	.2391
-0.50	.8436	.8195	.7729	.6451	.4678	.3294	.2235

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-0.45	.8182	.7942	.7478	.6208	.4456	.3096	.2067
-0.40	.7899	.7660	.7198	.5939	.4211	.2883	.1889
-0.35	.7586	.7348	.6890	.5644	.3947	.2656	.1703
-0.30	.7245	.7008	.6554	.5325	.3666	.2419	.1513
-0.25	.6877	.6642	.6193	.4985	.3371	.2176	.1323
-0.20	.6486	.6254	.5811	.4628	.3067	.1930	.1137
-0.15	.6075	.5846	.5411	.4258	.2758	.1687	.0959
-0.10	.5649	.5424	.4998	.3880	.2449	.1452	.0792
-0.05	.5213	.4992	.4578	.3500	.2146	.1227	.0639
0.00	.4771	.4557	.4155	.3123	.1854	.1018	.0503
0.05	.4331	.4123	.3736	.2755	.1577	.0828	.0386
0.10	.3897	.3696	.3326	.2401	.1320	.0659	.0287
0.15	.3475	.3282	.2930	.2066	.1086	.0511	.0206
0.20	.3070	.2886	.2554	.1754	.0876	.0387	.0143
0.25	.2685	.2512	.2201	.1468	.0694	.0285	.0095
0.30	.2326	.2163	.1875	.1210	.0537	.0203	.0060
0.35	.1993	.1842	.1577	.0982	.0407	.0140	.0036
0.40	.1690	.1551	.1311	.0784	.0300	.0093	.0020
0.45	.1418	.1291	.1075	.0615	.0216	.0059	.0010
0.50	.1176	.1061	.0869	.0474	.0151	.0036	.0005
0.55	.0964	.0861	.0693	.0358	.0102	.0020	.0002
0.60	.0781	.0691	.0545	.0265	.0066	.0011	.0001
0.65	.0625	.0546	.0421	.0191	.0042	.0005	.0000
0.70	.0494	.0426	.0321	.0135	.0025	.0002	.0000
0.75	.0386	.0328	.0240	.0093	.0014	.0001	.0000
0.80	.0297	.0249	.0177	.0063	.0008	.0000	.0000
0.85	.0226	.0186	.0128	.0041	.0004	.0000	.0000
0.90	.0169	.0136	.0091	.0026	.0002	.0000	.0000
0.95	.0125	.0099	.0063	.0016	.0001	.0000	.0000
1.00	.0091	.0070	.0043	.0009	.0000	.0000	.0000
1.05	.0066	.0049	.0028	.0005	.0000	.0000	.0000
1.10	.0046	.0034	.0018	.0003	.0000	.0000	.0000
1.15	.0032	.0023	.0012	.0001	.0000	.0000	.0000
1.20	.0022	.0015	.0007	.0001	.0000	.0000	.0000
1.25	.0015	.0010	.0004	.0000	.0000	.0000	.0000
1.30	.0010	.0006	.0003	.0000	.0000	.0000	.0000
1.35	.0006	.0004	.0001	.0000	.0000	.0000	.0000
1.40	.0004	.0002	.0001	.0000	.0000	.0000	.0000
1.45	.0003	.0001	.0000	.0000	.0000	.0000	.0000
1.50	.0002	.0001	.0000	.0000	.0000	.0000	.0000
1.55	.0001	.0000	.0000	.0000	.0000	.0000	.0000
1.60	.0001	.0000	.0000	.0000	.0000	.0000	.0000
1.65	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.70	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.75	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.80	.0000	.0000	.0000	.0000	.0000	.0000	.0000

JOINT PROBABILITY OF
SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES,
IN SAMPLES FROM A NORMAL DISTRIBUTION (μ=0,σ=1)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN
IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

n = 5
i = 1

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-2.50	.024	.048	.092	.204	.328	.391	.410
-2.45	.024	.048	.092	.204	.328	.391	.410
-2.40	.024	.048	.092	.204	.328	.391	.410
-2.35	.024	.048	.092	.204	.328	.391	.410
-2.30	.024	.048	.092	.204	.328	.391	.410
-2.25	.024	.048	.092	.204	.328	.391	.410
-2.20	.024	.048	.092	.204	.328	.391	.410
-2.15	.024	.048	.092	.204	.328	.391	.410
-2.10	.024	.048	.092	.204	.328	.391	.410
-2.05	.024	.048	.092	.204	.328	.391	.410
-2.00	.024	.048	.092	.204	.328	.391	.410
-1.95	.024	.048	.092	.204	.328	.391	.410
-1.90	.024	.048	.092	.204	.328	.391	.410
-1.85	.024	.048	.092	.204	.328	.391	.410
-1.80	.024	.048	.092	.204	.328	.391	.410
-1.75	.024	.048	.092	.204	.328	.391	.410
-1.70	.024	.048	.092	.204	.328	.391	.410
-1.65	.024	.048	.092	.204	.328	.391	.410
-1.60	.024	.048	.092	.204	.328	.391	.410
-1.55	.024	.048	.092	.204	.328	.391	.410
-1.50	.024	.048	.092	.204	.328	.391	.410
-1.45	.024	.048	.092	.204	.328	.391	.410
-1.40	.024	.048	.092	.204	.328	.391	.410
-1.35	.024	.048	.092	.204	.328	.391	.410
-1.30	.024	.048	.092	.204	.328	.391	.410
-1.25	.024	.048	.092	.204	.328	.391	.409
-1.20	.024	.048	.092	.204	.328	.391	.409
-1.15	.024	.048	.092	.204	.328	.391	.409
-1.10	.024	.048	.092	.204	.328	.391	.409
-1.05	.024	.048	.092	.204	.328	.391	.409
-1.00	.024	.048	.092	.204	.328	.391	.409
-0.95	.024	.048	.092	.203	.328	.391	.408
-0.90	.024	.048	.092	.203	.327	.390	.408
-0.85	.024	.048	.092	.203	.327	.390	.407
-0.80	.024	.048	.092	.203	.327	.389	.406
-0.75	.024	.048	.092	.203	.326	.388	.404
-0.70	.024	.048	.092	.203	.326	.387	.402
-0.65	.024	.048	.092	.202	.325	.385	.398
-0.60	.024	.048	.092	.202	.323	.382	.394
-0.55	.024	.048	.092	.201	.321	.379	.389
-0.50	.024	.048	.091	.201	.319	.374	.383

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-0.45	.024	.048	.091	.199	.316	.369	.375
-0.40	.024	.047	.091	.198	.312	.362	.365
-0.35	.024	.047	.090	.196	.307	.353	.353
-0.30	.024	.047	.090	.194	.301	.343	.339
-0.25	.024	.047	.089	.191	.294	.331	.322
-0.20	.024	.046	.088	.187	.285	.317	.304
-0.15	.024	.046	.086	.183	.275	.302	.283
-0.10	.023	.045	.085	.178	.263	.284	.261
-0.05	.023	.044	.083	.172	.250	.264	.237
0.00	.023	.043	.081	.165	.236	.243	.212
0.05	.022	.042	.078	.158	.220	.221	.187
0.10	.022	.041	.075	.149	.203	.198	.161
0.15	.021	.039	.072	.140	.185	.175	.136
0.20	.020	.038	.068	.130	.167	.151	.113
0.25	.019	.036	.064	.120	.148	.129	.091
0.30	.018	.034	.060	.109	.129	.108	.072
0.35	.017	.032	.055	.098	.111	.088	.055
0.40	.016	.029	.051	.087	.094	.070	.041
0.45	.015	.027	.046	.077	.078	.055	.029
0.50	.014	.025	.041	.066	.064	.041	.020
0.55	.013	.022	.037	.057	.051	.030	.014
0.60	.011	.020	.032	.047	.039	.022	.009
0.65	.010	.018	.028	.039	.030	.015	.005
0.70	.009	.015	.024	.032	.022	.010	.003
0.75	.008	.013	.020	.025	.016	.006	.002
0.80	.007	.011	.017	.020	.011	.004	.001
0.85	.006	.009	.014	.015	.007	.002	.000
0.90	.005	.008	.011	.011	.005	.001	.000
0.95	.004	.006	.009	.008	.003	.001	.000
1.00	.003	.005	.007	.006	.002	.000	.000
1.05	.003	.004	.005	.004	.001	.000	.000
1.10	.002	.003	.004	.003	.001	.000	.000
1.15	.002	.002	.003	.002	.000	.000	.000
1.20	.001	.002	.002	.001	.000	.000	.000
1.25	.001	.001	.001	.001	.000	.000	.000
1.30	.001	.001	.001	.000	.000	.000	.000
1.35	.001	.001	.001	.000	.000	.000	.000
1.40	.000	.000	.000	.000	.000	.000	.000
1.45	.000	.000	.000	.000	.000	.000	.000
1.50	.000	.000	.000	.000	.000	.000	.000
1.55	.000	.000	.000	.000	.000	.000	.000
1.60	.000	.000	.000	.000	.000	.000	.000
1.65	.000	.000	.000	.000	.000	.000	.000
1.70	.000	.000	.000	.000	.000	.000	.000
1.75	.000	.000	.000	.000	.000	.000	.000
1.80	.000	.000	.000	.000	.000	.000	.000

JOINT PROBABILITY OF
SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES,
IN SAMPLES FROM A NORMAL DISTRIBUTION (μ=0,σ=1)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN
IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

n = 5
i = 2

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-2.50	.000	.001	.004	.021	.073	.138	.205
-2.45	.000	.001	.004	.021	.073	.138	.205
-2.40	.000	.001	.004	.021	.073	.138	.205
-2.35	.000	.001	.004	.021	.073	.138	.205
-2.30	.000	.001	.004	.021	.073	.138	.205
-2.25	.000	.001	.004	.021	.073	.138	.205
-2.20	.000	.001	.004	.021	.073	.138	.205
-2.15	.000	.001	.004	.021	.073	.138	.205
-2.10	.000	.001	.004	.021	.073	.138	.205
-2.05	.000	.001	.004	.021	.073	.138	.205
-2.00	.000	.001	.004	.021	.073	.138	.205
-1.95	.000	.001	.004	.021	.073	.138	.205
-1.90	.000	.001	.004	.021	.073	.138	.205
-1.85	.000	.001	.004	.021	.073	.138	.205
-1.80	.000	.001	.004	.021	.073	.138	.205
-1.75	.000	.001	.004	.021	.073	.138	.205
-1.70	.000	.001	.004	.021	.073	.138	.205
-1.65	.000	.001	.004	.021	.073	.138	.205
-1.60	.000	.001	.004	.021	.073	.138	.205
-1.55	.000	.001	.004	.021	.073	.138	.205
-1.50	.000	.001	.004	.021	.073	.138	.205
-1.45	.000	.001	.004	.021	.073	.138	.205
-1.40	.000	.001	.004	.021	.073	.138	.205
-1.35	.000	.001	.004	.021	.073	.138	.205
-1.30	.000	.001	.004	.021	.073	.138	.205
-1.25	.000	.001	.004	.021	.073	.138	.205
-1.20	.000	.001	.004	.021	.073	.138	.205
-1.15	.000	.001	.004	.021	.073	.138	.205
-1.10	.000	.001	.004	.021	.073	.138	.205
-1.05	.000	.001	.004	.021	.073	.138	.205
-1.00	.000	.001	.004	.021	.073	.138	.205
-0.95	.000	.001	.004	.021	.073	.138	.205
-0.90	.000	.001	.004	.021	.073	.138	.205
-0.85	.000	.001	.004	.021	.073	.138	.205
-0.80	.000	.001	.004	.021	.073	.138	.205
-0.75	.000	.001	.004	.021	.073	.138	.205
-0.70	.000	.001	.004	.021	.073	.138	.205
-0.65	.000	.001	.004	.021	.073	.138	.205
-0.60	.000	.001	.004	.021	.073	.138	.205
-0.55	.000	.001	.004	.021	.073	.138	.204
-0.50	.000	.001	.004	.021	.073	.138	.204

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-0.45	.000	.001	.004	.021	.073	.138	.204
-0.40	.000	.001	.004	.021	.073	.138	.203
-0.35	.000	.001	.004	.021	.073	.137	.202
-0.30	.000	.001	.004	.021	.073	.137	.201
-0.25	.000	.001	.004	.021	.072	.136	.199
-0.20	.000	.001	.004	.021	.072	.135	.197
-0.15	.000	.001	.004	.021	.072	.134	.194
-0.10	.000	.001	.004	.021	.072	.133	.191
-0.05	.000	.001	.004	.021	.071	.131	.186
0.00	.000	.001	.004	.021	.070	.128	.180
0.05	.000	.001	.004	.021	.069	.125	.173
0.10	.000	.001	.004	.021	.068	.121	.165
0.15	.000	.001	.004	.021	.066	.116	.155
0.20	.000	.001	.004	.020	.065	.111	.144
0.25	.000	.001	.004	.020	.062	.105	.132
0.30	.000	.001	.004	.020	.060	.097	.119
0.35	.000	.001	.004	.019	.056	.090	.105
0.40	.000	.001	.004	.018	.053	.081	.091
0.45	.000	.001	.003	.018	.049	.072	.078
0.50	.000	.001	.003	.017	.045	.063	.065
0.55	.000	.001	.003	.016	.041	.054	.052
0.60	.000	.001	.003	.015	.036	.046	.041
0.65	.000	.001	.003	.014	.031	.037	.031
0.70	.000	.001	.003	.012	.027	.030	.023
0.75	.000	.001	.003	.011	.023	.023	.017
0.80	.000	.001	.002	.010	.018	.018	.012
0.85	.000	.001	.002	.009	.015	.013	.008
0.90	.000	.001	.002	.007	.012	.009	.005
0.95	.000	.001	.002	.006	.009	.006	.003
1.00	.000	.001	.002	.005	.007	.004	.002
1.05	.000	.000	.001	.004	.005	.003	.001
1.10	.000	.000	.001	.003	.003	.002	.001
1.15	.000	.000	.001	.003	.002	.001	.000
1.20	.000	.000	.001	.002	.001	.001	.000
1.25	.000	.000	.001	.001	.001	.000	.000
1.30	.000	.000	.001	.001	.001	.000	.000
1.35	.000	.000	.000	.001	.000	.000	.000
1.40	.000	.000	.000	.000	.000	.000	.000
1.45	.000	.000	.000	.000	.000	.000	.000
1.50	.000	.000	.000	.000	.000	.000	.000
1.55	.000	.000	.000	.000	.000	.000	.000
1.60	.000	.000	.000	.000	.000	.000	.000
1.65	.000	.000	.000	.000	.000	.000	.000
1.70	.000	.000	.000	.000	.000	.000	.000
1.75	.000	.000	.000	.000	.000	.000	.000
1.80	.000	.000	.000	.000	.000	.000	.000

JOINT PROBABILITY OF
SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES,
IN SAMPLES FROM A NORMAL DISTRIBUTION (μ=0,σ=1)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN
IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

n = 6
i = 0

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-2.50	.9704	.9415	.8858	.7351	.5314	.3771	.2621
-2.45	.9704	.9415	.8858	.7351	.5314	.3771	.2621
-2.40	.9704	.9415	.8858	.7351	.5314	.3771	.2621
-2.35	.9704	.9415	.8858	.7351	.5314	.3771	.2621
-2.30	.9704	.9415	.8858	.7351	.5314	.3771	.2621
-2.25	.9704	.9415	.8858	.7351	.5314	.3771	.2621
-2.20	.9704	.9415	.8858	.7351	.5314	.3771	.2621
-2.15	.9704	.9415	.8858	.7351	.5314	.3771	.2621
-2.10	.9704	.9415	.8858	.7351	.5314	.3771	.2621
-2.05	.9704	.9415	.8858	.7351	.5314	.3771	.2621
-2.00	.9704	.9415	.8858	.7351	.5314	.3771	.2621
-1.95	.9704	.9415	.8858	.7351	.5314	.3771	.2621
-1.90	.9704	.9415	.8858	.7351	.5314	.3771	.2621
-1.85	.9704	.9415	.8858	.7351	.5314	.3771	.2621
-1.80	.9704	.9415	.8858	.7351	.5314	.3771	.2621
-1.75	.9704	.9415	.8858	.7351	.5314	.3771	.2621
-1.70	.9704	.9415	.8858	.7351	.5314	.3771	.2621
-1.65	.9703	.9415	.8858	.7351	.5314	.3771	.2621
-1.60	.9703	.9414	.8858	.7350	.5314	.3771	.2621
-1.55	.9703	.9414	.8858	.7350	.5314	.3771	.2621
-1.50	.9703	.9414	.8857	.7350	.5313	.3770	.2620
-1.45	.9702	.9413	.8857	.7349	.5313	.3770	.2620
-1.40	.9701	.9412	.8855	.7348	.5311	.3769	.2619
-1.35	.9699	.9410	.8854	.7346	.5310	.3767	.2617
-1.30	.9696	.9408	.8851	.7344	.5307	.3764	.2614
-1.25	.9693	.9404	.8847	.7340	.5304	.3761	.2611
-1.20	.9687	.9398	.8842	.7335	.5298	.3756	.2606
-1.15	.9679	.9391	.8834	.7327	.5291	.3748	.2599
-1.10	.9680	.9380	.8823	.7316	.5280	.3738	.2589
-1.05	.9653	.9364	.8808	.7301	.5265	.3723	.2575
-1.00	.9632	.9343	.8787	.7280	.5245	.3704	.2557
-0.95	.9604	.9315	.8759	.7252	.5218	.3678	.2532
-0.90	.9566	.9277	.8721	.7215	.5182	.3644	.2500
-0.85	.9517	.9228	.8672	.7167	.5135	.3600	.2460
-0.80	.9454	.9165	.8609	.7104	.5076	.3544	.2409
-0.75	.9373	.9084	.8529	.7026	.5001	.3475	.2346
-0.70	.9272	.8982	.8428	.6927	.4908	.3390	.2271
-0.65	.9147	.8859	.8305	.6807	.4795	.3287	.2181
-0.60	.8996	.8708	.8155	.6661	.4660	.3166	.2076
-0.55	.8815	.8528	.7976	.6488	.4502	.3026	.1956
-0.50	.8602	.8315	.7765	.6285	.4318	.2866	.1823

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-0.45	.8354	.8068	.7521	.6052	.4110	.2687	.1677
-0.40	.8071	.7786	.7242	.5788	.3877	.2492	.1521
-0.35	.7751	.7469	.6929	.5493	.3622	.2282	.1358
-0.30	.7397	.7117	.6583	.5170	.3347	.2061	.1191
-0.25	.7010	.6733	.6206	.4822	.3057	.1834	.1025
-0.20	.6593	.6320	.5803	.4453	.2756	.1605	.0864
-0.15	.6151	.5882	.5377	.4068	.2451	.1380	.0712
-0.10	.5689	.5427	.4934	.3674	.2147	.1164	.0571
-0.05	.5215	.4959	.4483	.3278	.1851	.0961	.0446
0.00	.4734	.4486	.4028	.2887	.1568	.0776	.0338
0.05	.4254	.4016	.3579	.2507	.1304	.0611	.0248
0.10	.3783	.3555	.3142	.2146	.1063	.0469	.0175
0.15	.3327	.3111	.2724	.1808	.0849	.0349	.0119
0.20	.2893	.2690	.2331	.1499	.0662	.0252	.0077
0.25	.2486	.2298	.1967	.1221	.0504	.0176	.0048
0.30	.2110	.1937	.1637	.0977	.0374	.0118	.0028
0.35	.1769	.1611	.1342	.0767	.0270	.0076	.0015
0.40	.1464	.1322	.1083	.0590	.0189	.0047	.0008
0.45	.1195	.1069	.0861	.0445	.0128	.0027	.0003
0.50	.0963	.0852	.0672	.0327	.0084	.0015	.0001
0.55	.0764	.0669	.0516	.0235	.0053	.0008	.0000
0.60	.0598	.0517	.0389	.0165	.0032	.0004	.0000
0.65	.0462	.0393	.0288	.0113	.0018	.0002	.0000
0.70	.0351	.0294	.0209	.0075	.0010	.0001	.0000
0.75	.0262	.0216	.0149	.0048	.0005	.0000	.0000
0.80	.0193	.0156	.0104	.0030	.0002	.0000	.0000
0.85	.0140	.0110	.0071	.0018	.0001	.0000	.0000
0.90	.0100	.0077	.0047	.0010	.0000	.0000	.0000
0.95	.0070	.0052	.0031	.0006	.0000	.0000	.0000
1.00	.0048	.0035	.0019	.0003	.0000	.0000	.0000
1.05	.0032	.0023	.0012	.0002	.0000	.0000	.0000
1.10	.0021	.0015	.0007	.0001	.0000	.0000	.0000
1.15	.0014	.0009	.0004	.0000	.0000	.0000	.0000
1.20	.0009	.0006	.0002	.0000	.0000	.0000	.0000
1.25	.0006	.0003	.0001	.0000	.0000	.0000	.0000
1.30	.0003	.0002	.0001	.0000	.0000	.0000	.0000
1.35	.0002	.0001	.0000	.0000	.0000	.0000	.0000
1.40	.0001	.0001	.0000	.0000	.0000	.0000	.0000
1.45	.0001	.0000	.0000	.0000	.0000	.0000	.0000
1.50	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.55	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.60	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.65	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.70	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.75	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.80	.0000	.0000	.0000	.0000	.0000	.0000	.0000

JOINT PROBABILITY OF SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES, IN SAMPLES FROM A NORMAL DISTRIBUTION ($\mu=0,\sigma=1$)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

$n = 6$
$i = 1$

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-2.50	.029	.057	.108	.232	.354	.399	.393
-2.45	.029	.057	.108	.232	.354	.399	.393
-2.40	.029	.057	.108	.232	.354	.399	.393
-2.35	.029	.057	.108	.232	.354	.399	.393
-2.30	.029	.057	.108	.232	.354	.399	.393
-2.25	.029	.057	.108	.232	.354	.399	.393
-2.20	.029	.057	.108	.232	.354	.399	.393
-2.15	.029	.057	.108	.232	.354	.399	.393
-2.10	.029	.057	.108	.232	.354	.399	.393
-2.05	.029	.057	.108	.232	.354	.399	.393
-2.00	.029	.057	.108	.232	.354	.399	.393
-1.95	.029	.057	.108	.232	.354	.399	.393
-1.90	.029	.057	.108	.232	.354	.399	.393
-1.85	.029	.057	.108	.232	.354	.399	.393
-1.80	.029	.057	.108	.232	.354	.399	.393
-1.75	.029	.057	.108	.232	.354	.399	.393
-1.70	.029	.057	.108	.232	.354	.399	.393
-1.65	.029	.057	.108	.232	.354	.399	.393
-1.60	.029	.057	.108	.232	.354	.399	.393
-1.55	.029	.057	.108	.232	.354	.399	.393
-1.50	.029	.057	.108	.232	.354	.399	.393
-1.45	.029	.057	.108	.232	.354	.399	.393
-1.40	.029	.057	.108	.232	.354	.399	.393
-1.35	.029	.057	.108	.232	.354	.399	.393
-1.30	.029	.057	.108	.232	.354	.399	.393
-1.25	.029	.057	.108	.232	.354	.399	.393
-1.20	.029	.057	.108	.232	.354	.399	.393
-1.15	.029	.057	.108	.232	.354	.399	.393
-1.10	.029	.057	.108	.232	.354	.399	.393
-1.05	.029	.057	.108	.232	.354	.399	.393
-1.00	.029	.057	.108	.232	.354	.399	.393
-0.95	.029	.057	.108	.232	.354	.399	.392
-0.90	.029	.057	.108	.232	.354	.398	.392
-0.85	.029	.057	.108	.232	.354	.398	.391
-0.80	.029	.057	.108	.232	.353	.397	.389
-0.75	.029	.057	.108	.232	.353	.396	.388
-0.70	.029	.057	.108	.231	.352	.394	.385
-0.65	.029	.057	.108	.231	.351	.392	.382
-0.60	.029	.057	.108	.230	.349	.389	.378
-0.55	.029	.057	.108	.229	.347	.385	.372
-0.50	.029	.057	.107	.228	.344	.380	.364

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-0.45	.029	.056	.107	.227	.340	.373	.355
-0.40	.029	.056	.106	.225	.335	.365	.343
-0.35	.029	.056	.106	.222	.328	.355	.330
-0.30	.029	.056	.105	.219	.321	.342	.313
-0.25	.028	.055	.103	.215	.311	.327	.294
-0.20	.028	.054	.102	.210	.300	.310	.273
-0.15	.028	.054	.100	.204	.286	.291	.250
-0.10	.027	.053	.098	.197	.271	.269	.225
-0.05	.027	.051	.095	.189	.254	.246	.199
0.00	.026	.050	.091	.179	.236	.221	.172
0.05	.025	.048	.088	.169	.216	.195	.146
0.10	.025	.046	.083	.157	.194	.170	.121
0.15	.024	.044	.079	.145	.173	.144	.097
0.20	.022	.042	.074	.132	.151	.120	.076
0.25	.021	.039	.068	.119	.130	.098	.058
0.30	.020	.036	.062	.106	.109	.077	.043
0.35	.018	.033	.056	.092	.090	.060	.030
0.40	.017	.030	.050	.079	.073	.045	.021
0.45	.015	.027	.044	.067	.057	.032	.013
0.50	.014	.024	.038	.056	.044	.023	.008
0.55	.012	.021	.033	.045	.033	.015	.005
0.60	.011	.018	.028	.036	.024	.010	.003
0.65	.009	.015	.023	.028	.017	.006	.001
0.70	.008	.013	.019	.022	.011	.004	.001
0.75	.007	.011	.015	.016	.007	.002	.000
0.80	.005	.009	.012	.012	.005	.001	.000
0.85	.004	.007	.009	.008	.003	.001	.000
0.90	.004	.005	.007	.006	.002	.000	.000
0.95	.003	.004	.005	.004	.001	.000	.000
1.00	.002	.003	.004	.002	.000	.000	.000
1.05	.002	.002	.003	.002	.000	.000	.000
1.10	.001	.002	.002	.001	.000	.000	.000
1.15	.001	.001	.001	.001	.000	.000	.000
1.20	.001	.001	.001	.000	.000	.000	.000
1.25	.000	.001	.001	.000	.000	.000	.000
1.30	.000	.000	.000	.000	.000	.000	.000
1.35	.000	.000	.000	.000	.000	.000	.000
1.40	.000	.000	.000	.000	.000	.000	.000
1.45	.000	.000	.000	.000	.000	.000	.000
1.50	.000	.000	.000	.000	.000	.000	.000
1.55	.000	.000	.000	.000	.000	.000	.000
1.60	.000	.000	.000	.000	.000	.000	.000
1.65	.000	.000	.000	.000	.000	.000	.000
1.70	.000	.000	.000	.000	.000	.000	.000
1.75	.000	.000	.000	.000	.000	.000	.000
1.80	.000	.000	.000	.000	.000	.000	.000

JOINT PROBABILITY OF
SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES,
IN SAMPLES FROM A NORMAL DISTRIBUTION (μ=0,σ=1)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN
IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

n = 6
i = 2

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-2.50	.000	.001	.006	.031	.098	.176	.246
-2.45	.000	.001	.006	.031	.098	.176	.246
-2.40	.000	.001	.006	.031	.098	.176	.246
-2.35	.000	.001	.006	.031	.098	.176	.246
-2.30	.000	.001	.006	.031	.098	.176	.246
-2.25	.000	.001	.006	.031	.098	.176	.246
-2.20	.000	.001	.006	.031	.098	.176	.246
-2.15	.000	.001	.006	.031	.098	.176	.246
-2.10	.000	.001	.006	.031	.098	.176	.246
-2.05	.000	.001	.006	.031	.098	.176	.246
-2.00	.000	.001	.006	.031	.098	.176	.246
-1.95	.000	.001	.006	.031	.098	.176	.246
-1.90	.000	.001	.006	.031	.098	.176	.246
-1.85	.000	.001	.006	.031	.098	.176	.246
-1.80	.000	.001	.006	.031	.098	.176	.246
-1.75	.000	.001	.006	.031	.098	.176	.246
-1.70	.000	.001	.006	.031	.098	.176	.246
-1.65	.000	.001	.006	.031	.098	.176	.246
-1.60	.000	.001	.006	.031	.098	.176	.246
-1.55	.000	.001	.006	.031	.098	.176	.246
-1.50	.000	.001	.006	.031	.098	.176	.246
-1.45	.000	.001	.006	.031	.098	.176	.246
-1.40	.000	.001	.006	.031	.098	.176	.246
-1.35	.000	.001	.006	.031	.098	.176	.246
-1.30	.000	.001	.006	.031	.098	.176	.246
-1.25	.000	.001	.006	.031	.098	.176	.246
-1.20	.000	.001	.006	.031	.098	.176	.246
-1.15	.000	.001	.006	.031	.098	.176	.246
-1.10	.000	.001	.006	.031	.098	.176	.246
-1.05	.000	.001	.006	.031	.098	.176	.246
-1.00	.000	.001	.006	.031	.098	.176	.246
-0.95	.000	.001	.006	.031	.098	.176	.246
-0.90	.000	.001	.006	.031	.098	.176	.246
-0.85	.000	.001	.006	.031	.098	.176	.246
-0.80	.000	.001	.006	.031	.098	.176	.246
-0.75	.000	.001	.006	.031	.098	.176	.246
-0.70	.000	.001	.006	.031	.098	.176	.246
-0.65	.000	.001	.006	.031	.098	.176	.245
-0.60	.000	.001	.006	.031	.098	.176	.245
-0.55	.000	.001	.006	.031	.098	.176	.245
-0.50	.000	.001	.006	.031	.098	.176	.244

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-0.45	.000	.001	.006	.031	.098	.175	.243
-0.40	.000	.001	.006	.031	.098	.175	.242
-0.35	.000	.001	.006	.030	.098	.174	.240
-0.30	.000	.001	.006	.030	.098	.173	.238
-0.25	.000	.001	.006	.030	.097	.172	.234
-0.20	.000	.001	.006	.030	.097	.170	.230
-0.15	.000	.001	.006	.030	.096	.167	.224
-0.10	.000	.001	.006	.030	.095	.164	.217
-0.05	.000	.001	.005	.030	.094	.160	.208
0.00	.000	.001	.005	.030	.092	.154	.197
0.05	.000	.001	.005	.029	.089	.148	.185
0.10	.000	.001	.005	.029	.087	.140	.170
0.15	.000	.001	.005	.028	.083	.131	.155
0.20	.000	.001	.005	.028	.079	.122	.138
0.25	.000	.001	.005	.027	.075	.111	.120
0.30	.000	.001	.005	.026	.069	.099	.103
0.35	.000	.001	.005	.025	.064	.087	.086
0.40	.000	.001	.005	.023	.057	.075	.069
0.45	.000	.001	.005	.022	.051	.063	.054
0.50	.000	.001	.004	.020	.044	.051	.041
0.55	.000	.001	.004	.018	.038	.041	.030
0.60	.000	.001	.004	.016	.032	.032	.022
0.65	.000	.001	.004	.014	.026	.024	.015
0.70	.000	.001	.003	.012	.021	.017	.010
0.75	.000	.001	.003	.010	.016	.012	.006
0.80	.000	.001	.003	.009	.012	.008	.004
0.85	.000	.001	.002	.007	.009	.005	.002
0.90	.000	.001	.002	.006	.006	.003	.001
0.95	.000	.001	.002	.004	.004	.002	.001
1.00	.000	.001	.001	.003	.003	.001	.000
1.05	.000	.000	.001	.002	.002	.001	.000
1.10	.000	.000	.001	.002	.001	.000	.000
1.15	.000	.000	.001	.001	.001	.000	.000
1.20	.000	.000	.001	.001	.000	.000	.000
1.25	.000	.000	.000	.001	.000	.000	.000
1.30	.000	.000	.000	.000	.000	.000	.000
1.35	.000	.000	.000	.000	.000	.000	.000
1.40	.000	.000	.000	.000	.000	.000	.000
1.45	.000	.000	.000	.000	.000	.000	.000
1.50	.000	.000	.000	.000	.000	.000	.000
1.55	.000	.000	.000	.000	.000	.000	.000
1.60	.000	.000	.000	.000	.000	.000	.000
1.65	.000	.000	.000	.000	.000	.000	.000
1.70	.000	.000	.000	.000	.000	.000	.000
1.75	.000	.000	.000	.000	.000	.000	.000
1.80	.000	.000	.000	.000	.000	.000	.000

JOINT PROBABILITY OF
SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES,
IN SAMPLES FROM A NORMAL DISTRIBUTION ($\mu=0,\sigma=1$)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN
IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

n = 7
i = 0

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-2.50	.9655	.9321	.8681	.6983	.4783	.3206	.2097
-2.45	.9655	.9321	.8681	.6983	.4783	.3206	.2097
-2.40	.9655	.9321	.8681	.6983	.4783	.3206	.2097
-2.35	.9655	.9321	.8681	.6983	.4783	.3206	.2097
-2.30	.9655	.9321	.8681	.6983	.4783	.3206	.2097
-2.25	.9655	.9321	.8681	.6983	.4783	.3206	.2097
-2.20	.9655	.9321	.8681	.6983	.4783	.3206	.2097
-2.15	.9655	.9321	.8681	.6983	.4783	.3206	.2097
-2.10	.9655	.9321	.8681	.6983	.4783	.3206	.2097
-2.05	.9655	.9321	.8681	.6983	.4783	.3206	.2097
-2.00	.9655	.9321	.8681	.6983	.4783	.3206	.2097
-1.95	.9655	.9321	.8681	.6983	.4783	.3206	.2097
-1.90	.9655	.9321	.8681	.6983	.4783	.3206	.2097
-1.85	.9655	.9321	.8681	.6983	.4783	.3206	.2097
-1.80	.9655	.9321	.8681	.6983	.4783	.3206	.2097
-1.75	.9655	.9321	.8681	.6983	.4783	.3206	.2097
-1.70	.9655	.9321	.8681	.6983	.4783	.3206	.2097
-1.65	.9655	.9321	.8681	.6983	.4783	.3206	.2097
-1.60	.9655	.9321	.8681	.6983	.4783	.3206	.2097
-1.55	.9655	.9320	.8681	.6983	.4783	.3206	.2097
-1.50	.9655	.9320	.8681	.6983	.4783	.3205	.2097
-1.45	.9655	.9320	.8681	.6983	.4782	.3205	.2097
-1.40	.9654	.9320	.8680	.6983	.4782	.3205	.2096
-1.35	.9653	.9319	.8679	.6982	.4781	.3204	.2095
-1.30	.9652	.9318	.8678	.6980	.4781	.3203	.2094
-1.25	.9650	.9316	.8677	.6979	.4778	.3201	.2093
-1.20	.9648	.9313	.8674	.6976	.4776	.3199	.2090
-1.15	.9643	.9309	.8670	.6972	.4772	.3195	.2086
-1.10	.9637	.9303	.8663	.6965	.4765	.3189	.2081
-1.05	.9628	.9293	.8654	.6956	.4756	.3180	.2073
-1.00	.9614	.9280	.8641	.6943	.4744	.3168	.2061
-0.95	.9595	.9261	.8622	.6924	.4726	.3151	.2046
-0.90	.9569	.9234	.8595	.6898	.4701	.3128	.2024
-0.85	.9533	.9198	.8559	.6863	.4667	.3096	.1996
-0.80	.9484	.9149	.8511	.6815	.4622	.3055	.1959
-0.75	.9419	.9085	.8446	.6753	.4563	.3001	.1911
-0.70	.9335	.9001	.8363	.6672	.4488	.2933	.1853
-0.65	.9228	.8894	.8257	.6569	.4394	.2850	.1781
-0.60	.9094	.8760	.8124	.6441	.4277	.2748	.1696
-0.55	.8928	.8595	.7961	.6285	.4137	.2627	.1596
-0.50	.8727	.8396	.7763	.6097	.3970	.2487	.1484

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-0.45	.8489	.8158	.7529	.5875	.3778	.2327	.1359
-0.40	.8209	.7880	.7256	.5620	.3559	.2150	.1225
-0.35	.7888	.7562	.6943	.5330	.3316	.1959	.1084
-0.30	.7526	.7203	.6591	.5007	.3052	.1756	.0939
-0.25	.7124	.6805	.6203	.4655	.2771	.1547	.0796
-0.20	.6686	.6372	.5783	.4279	.2478	.1337	.0659
-0.15	.6217	.5910	.5336	.3885	.2181	.1132	.0530
-0.10	.5724	.5424	.4869	.3481	.1886	.0937	.0414
-0.05	.5214	.4924	.4390	.3074	.1601	.0756	.0314
0.00	.4697	.4419	.3909	.2674	.1331	.0594	.0229
0.05	.4182	.3916	.3435	.2288	.1083	.0454	.0161
0.10	.3677	.3426	.2976	.1924	.0861	.0336	.0108
0.15	.3192	.2957	.2540	.1589	.0668	.0240	.0069
0.20	.2734	.2516	.2135	.1288	.0504	.0165	.0042
0.25	.2309	.2110	.1766	.1022	.0370	.0109	.0024
0.30	.1923	.1743	.1436	.0794	.0263	.0069	.0013
0.35	.1577	.1417	.1148	.0603	.0181	.0042	.0006
0.40	.1274	.1133	.0901	.0448	.0120	.0024	.0003
0.45	.1013	.0891	.0694	.0324	.0077	.0013	.0001
0.50	.0793	.0688	.0524	.0228	.0047	.0006	.0000
0.55	.0610	.0522	.0388	.0156	.0028	.0003	.0000
0.60	.0462	.0389	.0281	.0104	.0015	.0001	.0000
0.65	.0343	.0285	.0199	.0067	.0008	.0000	.0000
0.70	.0251	.0204	.0138	.0042	.0004	.0000	.0000
0.75	.0180	.0143	.0093	.0025	.0002	.0000	.0000
0.80	.0127	.0099	.0061	.0015	.0001	.0000	.0000
0.85	.0087	.0066	.0039	.0008	.0000	.0000	.0000
0.90	.0059	.0044	.0025	.0004	.0000	.0000	.0000
0.95	.0039	.0028	.0015	.0002	.0000	.0000	.0000
1.00	.0025	.0018	.0009	.0001	.0000	.0000	.0000
1.05	.0016	.0011	.0005	.0000	.0000	.0000	.0000
1.10	.0010	.0006	.0003	.0000	.0000	.0000	.0000
1.15	.0006	.0004	.0001	.0000	.0000	.0000	.0000
1.20	.0004	.0002	.0001	.0000	.0000	.0000	.0000
1.25	.0002	.0001	.0000	.0000	.0000	.0000	.0000
1.30	.0001	.0001	.0000	.0000	.0000	.0000	.0000
1.35	.0001	.0000	.0000	.0000	.0000	.0000	.0000
1.40	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.45	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.50	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.55	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.60	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.65	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.70	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.75	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.80	.0000	.0000	.0000	.0000	.0000	.0000	.0000

JOINT PROBABILITY OF
SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES,
IN SAMPLES FROM A NORMAL DISTRIBUTION (μ=0,σ=1)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN
IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

n = 7
i = 1

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-2.50	.034	.066	.124	.257	.372	.396	.367
-2.45	.034	.066	.124	.257	.372	.396	.367
-2.40	.034	.066	.124	.257	.372	.396	.367
-2.35	.034	.066	.124	.257	.372	.396	.367
-2.30	.034	.066	.124	.257	.372	.396	.367
-2.25	.034	.066	.124	.257	.372	.396	.367
-2.20	.034	.066	.124	.257	.372	.396	.367
-2.15	.034	.066	.124	.257	.372	.396	.367
-2.10	.034	.066	.124	.257	.372	.396	.367
-2.05	.034	.066	.124	.257	.372	.396	.367
-2.00	.034	.066	.124	.257	.372	.396	.367
-1.95	.034	.066	.124	.257	.372	.396	.367
-1.90	.034	.066	.124	.257	.372	.396	.367
-1.85	.034	.066	.124	.257	.372	.396	.367
-1.80	.034	.066	.124	.257	.372	.396	.367
-1.75	.034	.066	.124	.257	.372	.396	.367
-1.70	.034	.066	.124	.257	.372	.396	.367
-1.65	.034	.066	.124	.257	.372	.396	.367
-1.60	.034	.066	.124	.257	.372	.396	.367
-1.55	.034	.066	.124	.257	.372	.396	.367
-1.50	.034	.066	.124	.257	.372	.396	.367
-1.45	.034	.066	.124	.257	.372	.396	.367
-1.40	.034	.066	.124	.257	.372	.396	.367
-1.35	.034	.066	.124	.257	.372	.396	.367
-1.30	.034	.066	.124	.257	.372	.396	.367
-1.25	.034	.066	.124	.257	.372	.396	.367
-1.20	.034	.066	.124	.257	.372	.396	.367
-1.15	.034	.066	.124	.257	.372	.396	.367
-1.10	.034	.066	.124	.257	.372	.396	.367
-1.05	.034	.066	.124	.257	.372	.396	.367
-1.00	.034	.066	.124	.257	.372	.396	.366
-0.95	.034	.066	.124	.257	.372	.395	.366
-0.90	.034	.066	.124	.257	.372	.395	.366
-0.85	.034	.066	.124	.257	.371	.395	.365
-0.80	.034	.066	.124	.257	.371	.394	.364
-0.75	.034	.066	.124	.257	.370	.393	.362
-0.70	.034	.066	.124	.256	.369	.391	.360
-0.65	.034	.066	.124	.256	.368	.389	.356
-0.60	.034	.066	.123	.255	.366	.386	.352
-0.55	.034	.066	.123	.254	.364	.382	.346
-0.50	.034	.065	.123	.253	.361	.376	.338

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-0.45	.034	.065	.122	.251	.356	.368	.328
-0.40	.034	.065	.122	.249	.350	.359	.316
-0.35	.033	.065	.121	.245	.342	.347	.301
-0.30	.033	.064	.119	.241	.333	.333	.283
-0.25	.033	.063	.118	.236	.321	.316	.262
-0.20	.032	.062	.115	.230	.307	.296	.240
-0.15	.032	.061	.113	.222	.291	.274	.215
-0.10	.031	.060	.110	.213	.273	.249	.189
-0.05	.031	.058	.106	.202	.252	.223	.163
0.00	.030	.056	.101	.190	.230	.196	.136
0.05	.029	.054	.096	.177	.207	.169	.111
0.10	.027	.051	.090	.162	.182	.142	.088
0.15	.026	.048	.084	.147	.158	.117	.068
0.20	.024	.045	.077	.131	.134	.093	.050
0.25	.023	.041	.070	.115	.111	.072	.036
0.30	.021	.038	.063	.100	.090	.054	.024
0.35	.019	.034	.056	.084	.071	.039	.016
0.40	.017	.030	.049	.070	.055	.028	.010
0.45	.015	.026	.042	.057	.041	.018	.006
0.50	.013	.022	.035	.045	.029	.012	.003
0.55	.011	.019	.029	.035	.021	.007	.002
0.60	.010	.016	.023	.027	.014	.004	.001
0.65	.008	.013	.019	.020	.009	.002	.000
0.70	.007	.010	.015	.014	.006	.001	.000
0.75	.005	.008	.011	.010	.003	.001	.000
0.80	.004	.006	.008	.007	.002	.000	.000
0.85	.003	.005	.006	.004	.001	.000	.000
0.90	.002	.004	.004	.003	.001	.000	.000
0.95	.002	.003	.003	.002	.000	.000	.000
1.00	.001	.002	.002	.001	.000	.000	.000
1.05	.001	.001	.001	.001	.000	.000	.000
1.10	.001	.001	.001	.000	.000	.000	.000
1.15	.000	.001	.001	.000	.000	.000	.000
1.20	.000	.000	.000	.000	.000	.000	.000
1.25	.000	.000	.000	.000	.000	.000	.000
1.30	.000	.000	.000	.000	.000	.000	.000
1.35	.000	.000	.000	.000	.000	.000	.000
1.40	.000	.000	.000	.000	.000	.000	.000
1.45	.000	.000	.000	.000	.000	.000	.000
1.50	.000	.000	.000	.000	.000	.000	.000
1.55	.000	.000	.000	.000	.000	.000	.000
1.60	.000	.000	.000	.000	.000	.000	.000
1.65	.000	.000	.000	.000	.000	.000	.000
1.70	.000	.000	.000	.000	.000	.000	.000
1.75	.000	.000	.000	.000	.000	.000	.000
1.80	.000	.000	.000	.000	.000	.000	.000

JOINT PROBABILITY OF
SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES,
IN SAMPLES FROM A NORMAL DISTRIBUTION ($\mu=0,\sigma=1$)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN
IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

n = 7
i = 2

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-2.50	.001	.002	.008	.041	.124	.210	.275
-2.45	.001	.002	.008	.041	.124	.210	.275
-2.40	.001	.002	.008	.041	.124	.210	.275
-2.35	.001	.002	.008	.041	.124	.210	.275
-2.30	.001	.002	.008	.041	.124	.210	.275
-2.25	.001	.002	.008	.041	.124	.210	.275
-2.20	.001	.002	.008	.041	.124	.210	.275
-2.15	.001	.002	.008	.041	.124	.210	.275
-2.10	.001	.002	.008	.041	.124	.210	.275
-2.05	.001	.002	.008	.041	.124	.210	.275
-2.00	.001	.002	.008	.041	.124	.210	.275
-1.95	.001	.002	.008	.041	.124	.210	.275
-1.90	.001	.002	.008	.041	.124	.210	.275
-1.85	.001	.002	.008	.041	.124	.210	.275
-1.80	.001	.002	.008	.041	.124	.210	.275
-1.75	.001	.002	.008	.041	.124	.210	.275
-1.70	.001	.002	.008	.041	.124	.210	.275
-1.65	.001	.002	.008	.041	.124	.210	.275
-1.60	.001	.002	.008	.041	.124	.210	.275
-1.55	.001	.002	.008	.041	.124	.210	.275
-1.50	.001	.002	.008	.041	.124	.210	.275
-1.45	.001	.002	.008	.041	.124	.210	.275
-1.40	.001	.002	.008	.041	.124	.210	.275
-1.35	.001	.002	.008	.041	.124	.210	.275
-1.30	.001	.002	.008	.041	.124	.210	.275
-1.25	.001	.002	.008	.041	.124	.210	.275
-1.20	.001	.002	.008	.041	.124	.210	.275
-1.15	.001	.002	.008	.041	.124	.210	.275
-1.10	.001	.002	.008	.041	.124	.210	.275
-1.05	.001	.002	.008	.041	.124	.210	.275
-1.00	.001	.002	.008	.041	.124	.210	.275
-0.95	.001	.002	.008	.041	.124	.210	.275
-0.90	.001	.002	.008	.041	.124	.210	.275
-0.85	.001	.002	.008	.041	.124	.210	.275
-0.80	.001	.002	.008	.041	.124	.210	.275
-0.75	.001	.002	.008	.041	.124	.210	.275
-0.70	.001	.002	.008	.041	.124	.210	.275
-0.65	.001	.002	.008	.041	.124	.209	.275
-0.60	.001	.002	.008	.041	.124	.209	.274
-0.55	.001	.002	.008	.041	.124	.209	.274
-0.50	.001	.002	.008	.041	.124	.209	.273

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-0.45	.001	.002	.008	.041	.124	.208	.271
-0.40	.001	.002	.008	.041	.123	.207	.269
-0.35	.001	.002	.008	.041	.123	.206	.266
-0.30	.001	.002	.008	.040	.122	.204	.262
-0.25	.001	.002	.008	.040	.122	.202	.256
-0.20	.001	.002	.008	.040	.121	.198	.249
-0.15	.001	.002	.008	.040	.119	.194	.240
-0.10	.001	.002	.008	.040	.117	.188	.229
-0.05	.001	.002	.007	.039	.115	.181	.215
0.00	.001	.002	.007	.039	.111	.172	.199
0.05	.001	.002	.007	.038	.107	.162	.181
0.10	.001	.002	.007	.037	.102	.150	.162
0.15	.001	.002	.007	.036	.096	.136	.141
0.20	.000	.002	.007	.035	.090	.122	.120
0.25	.000	.002	.007	.033	.082	.107	.100
0.30	.000	.002	.007	.031	.074	.092	.080
0.35	.000	.002	.006	.029	.065	.076	.062
0.40	.000	.002	.006	.026	.057	.062	.047
0.45	.000	.002	.006	.024	.048	.049	.034
0.50	.000	.002	.005	.021	.040	.037	.023
0.55	.000	.001	.005	.019	.032	.027	.016
0.60	.000	.001	.004	.016	.025	.019	.010
0.65	.000	.001	.004	.013	.019	.013	.006
0.70	.000	.001	.003	.011	.014	.009	.003
0.75	.000	.001	.003	.009	.010	.005	.002
0.80	.000	.001	.002	.007	.007	.003	.001
0.85	.000	.001	.002	.005	.005	.002	.000
0.90	.000	.001	.002	.004	.003	.001	.000
0.95	.000	.001	.001	.003	.002	.000	.000
1.00	.000	.000	.001	.002	.001	.000	.000
1.05	.000	.000	.001	.001	.001	.000	.000
1.10	.000	.000	.001	.001	.000	.000	.000
1.15	.000	.000	.000	.001	.000	.000	.000
1.20	.000	.000	.000	.000	.000	.000	.000
1.25	.000	.000	.000	.000	.000	.000	.000
1.30	.000	.000	.000	.000	.000	.000	.000
1.35	.000	.000	.000	.000	.000	.000	.000
1.40	.000	.000	.000	.000	.000	.000	.000
1.45	.000	.000	.000	.000	.000	.000	.000
1.50	.000	.000	.000	.000	.000	.000	.000
1.55	.000	.000	.000	.000	.000	.000	.000
1.60	.000	.000	.000	.000	.000	.000	.000
1.65	.000	.000	.000	.000	.000	.000	.000
1.70	.000	.000	.000	.000	.000	.000	.000
1.75	.000	.000	.000	.000	.000	.000	.000
1.80	.000	.000	.000	.000	.000	.000	.000

JOINT PROBABILITY OF SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES, IN SAMPLES FROM A NORMAL DISTRIBUTION ($\mu=0,\sigma=1$)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

n = 8
i = 0

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-2.50	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-2.45	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-2.40	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-2.35	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-2.30	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-2.25	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-2.20	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-2.15	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-2.10	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-2.05	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-2.00	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-1.95	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-1.90	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-1.85	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-1.80	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-1.75	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-1.70	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-1.65	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-1.60	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-1.55	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-1.50	.9607	.9227	.8508	.6634	.4305	.2725	.1678
-1.45	.9607	.9227	.8507	.6634	.4304	.2725	.1678
-1.40	.9607	.9227	.8507	.6634	.4304	.2725	.1678
-1.35	.9606	.9227	.8507	.6634	.4304	.2724	.1677
-1.30	.9606	.9226	.8506	.6633	.4304	.2724	.1677
-1.25	.9605	.9225	.8506	.6632	.4304	.2723	.1676
-1.20	.9603	.9224	.8504	.6631	.4301	.2722	.1675
-1.15	.9601	.9222	.8502	.6629	.4299	.2720	.1673
-1.10	.9598	.9218	.8498	.6625	.4296	.2716	.1670
-1.05	.9592	.9213	.8493	.6619	.4290	.2711	.1665
-1.00	.9584	.9204	.8484	.6611	.4282	.2704	.1658
-0.95	.9571	.9191	.8472	.6599	.4270	.2693	.1648
-0.90	.9552	.9173	.8453	.6581	.4253	.2677	.1633
-0.85	.9526	.9147	.8427	.6555	.4229	.2654	.1614
-0.80	.9489	.9109	.8390	.6519	.4195	.2624	.1587
-0.75	.9438	.9058	.8339	.6470	.4150	.2583	.1552
-0.70	.9369	.8990	.8271	.6404	.4089	.2530	.1507
-0.65	.9277	.8899	.8181	.6317	.4011	.2462	.1450
-0.60	.9159	.8781	.8065	.6206	.3912	.2377	.1381
-0.55	.9009	.8632	.7917	.6066	.3789	.2274	.1300
-0.50	.8822	.8446	.7734	.5894	.3640	.2152	.1206

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-0.45	.8594	.8219	.7511	.5686	.3464	.2012	.1100
-0.40	.8322	.7949	.7246	.5441	.3261	.1854	.0986
-0.35	.8002	.7632	.6937	.5158	.3032	.1681	.0865
-0.30	.7636	.7270	.6583	.4840	.2780	.1497	.0742
-0.25	.7223	.6862	.6188	.4488	.2510	.1307	.0620
-0.20	.6767	.6413	.5754	.4109	.2229	.1116	.0503
-0.15	.6275	.5929	.5289	.3710	.1943	.0931	.0396
-0.10	.5753	.5418	.4801	.3298	.1660	.0756	.0302
-0.05	.5212	.4889	.4300	.2885	.1388	.0597	.0221
0.00	.4662	.4354	.3796	.2480	.1133	.0457	.0156
0.05	.4114	.3823	.3300	.2092	.0903	.0339	.0105
0.10	.3580	.3307	.2823	.1731	.0700	.0242	.0067
0.15	.3069	.2816	.2374	.1402	.0527	.0166	.0041
0.20	.2590	.2359	.1962	.1110	.0385	.0109	.0023
0.25	.2152	.1944	.1591	.0859	.0272	.0069	.0012
0.30	.1758	.1573	.1265	.0648	.0186	.0041	.0006
0.35	.1412	.1250	.0986	.0477	.0122	.0023	.0003
0.40	.1114	.0975	.0753	.0341	.0077	.0012	.0001
0.45	.0863	.0746	.0562	.0237	.0046	.0006	.0000
0.50	.0656	.0559	.0410	.0160	.0027	.0003	.0000
0.55	.0490	.0411	.0293	.0104	.0015	.0001	.0000
0.60	.0358	.0295	.0204	.0066	.0007	.0000	.0000
0.65	.0257	.0208	.0138	.0040	.0004	.0000	.0000
0.70	.0180	.0143	.0091	.0024	.0002	.0000	.0000
0.75	.0124	.0096	.0059	.0013	.0001	.0000	.0000
0.80	.0083	.0063	.0037	.0007	.0000	.0000	.0000
0.85	.0055	.0040	.0022	.0004	.0000	.0000	.0000
0.90	.0035	.0025	.0013	.0002	.0000	.0000	.0000
0.95	.0022	.0015	.0007	.0001	.0000	.0000	.0000
1.00	.0014	.0009	.0004	.0000	.0000	.0000	.0000
1.05	.0008	.0005	.0002	.0000	.0000	.0000	.0000
1.10	.0005	.0003	.0001	.0000	.0000	.0000	.0000
1.15	.0003	.0002	.0001	.0000	.0000	.0000	.0000
1.20	.0002	.0001	.0000	.0000	.0000	.0000	.0000
1.25	.0001	.0000	.0000	.0000	.0000	.0000	.0000
1.30	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.35	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.40	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.45	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.50	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.55	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.60	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.65	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.70	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.75	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.80	.0000	.0000	.0000	.0000	.0000	.0000	.0000

JOINT PROBABILITY OF
SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES,
IN SAMPLES FROM A NORMAL DISTRIBUTION (μ=0,σ=1)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN
IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

n = 8
i = 1

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-2.50	.039	.074	.139	.279	.383	.385	.336
-2.45	.039	.074	.139	.279	.383	.385	.336
-2.40	.039	.074	.139	.279	.383	.385	.336
-2.35	.039	.074	.139	.279	.383	.385	.336
-2.30	.039	.074	.139	.279	.383	.385	.336
-2.25	.039	.074	.139	.279	.383	.385	.336
-2.20	.039	.074	.139	.279	.383	.385	.336
-2.15	.039	.074	.139	.279	.383	.385	.336
-2.10	.039	.074	.139	.279	.383	.385	.336
-2.05	.039	.074	.139	.279	.383	.385	.336
-2.00	.039	.074	.139	.279	.383	.385	.336
-1.95	.039	.074	.139	.279	.383	.385	.336
-1.90	.039	.074	.139	.279	.383	.385	.336
-1.85	.039	.074	.139	.279	.383	.385	.336
-1.80	.039	.074	.139	.279	.383	.385	.336
-1.75	.039	.074	.139	.279	.383	.385	.336
-1.70	.039	.074	.139	.279	.383	.385	.336
-1.65	.039	.074	.139	.279	.383	.385	.336
-1.60	.039	.074	.139	.279	.383	.385	.336
-1.55	.039	.074	.139	.279	.383	.385	.336
-1.50	.039	.074	.139	.279	.383	.385	.336
-1.45	.039	.074	.139	.279	.383	.385	.336
-1.40	.039	.074	.139	.279	.383	.385	.336
-1.35	.039	.074	.139	.279	.383	.385	.336
-1.30	.039	.074	.139	.279	.383	.385	.336
-1.25	.039	.074	.139	.279	.383	.385	.336
-1.20	.039	.074	.139	.279	.383	.385	.335
-1.15	.039	.074	.139	.279	.383	.385	.335
-1.10	.039	.074	.139	.279	.383	.385	.335
-1.05	.039	.074	.139	.279	.383	.385	.335
-1.00	.039	.074	.139	.279	.382	.384	.335
-0.95	.039	.074	.139	.279	.382	.384	.335
-0.90	.039	.074	.139	.279	.382	.384	.335
-0.85	.039	.074	.139	.279	.382	.384	.334
-0.80	.039	.074	.139	.279	.382	.383	.333
-0.75	.039	.074	.139	.279	.381	.382	.331
-0.70	.039	.074	.139	.278	.380	.380	.329
-0.65	.039	.074	.138	.278	.379	.378	.326
-0.60	.038	.074	.138	.277	.377	.375	.322
-0.55	.038	.074	.138	.276	.375	.371	.316
-0.50	.038	.074	.138	.275	.371	.365	.308

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-0.45	.038	.074	.137	.273	.366	.357	.298
-0.40	.038	.073	.136	.270	.359	.347	.285
-0.35	.038	.073	.135	.266	.350	.334	.269
-0.30	.038	.072	.133	.261	.340	.318	.251
-0.25	.037	.071	.131	.255	.326	.299	.230
-0.20	.037	.070	.128	.247	.310	.278	.207
-0.15	.036	.069	.125	.237	.291	.254	.182
-0.10	.035	.067	.121	.226	.270	.227	.157
-0.05	.034	.065	.116	.213	.246	.200	.131
0.00	.033	.062	.110	.198	.221	.171	.106
0.05	.032	.059	.104	.182	.195	.144	.084
0.10	.030	.055	.097	.165	.168	.117	.063
0.15	.028	.051	.089	.147	.142	.093	.046
0.20	.026	.047	.080	.128	.117	.071	.032
0.25	.024	.043	.072	.110	.094	.052	.022
0.30	.022	.038	.063	.092	.073	.037	.014
0.35	.019	.034	.054	.076	.055	.025	.008
0.40	.017	.029	.046	.061	.040	.017	.005
0.45	.015	.025	.038	.048	.029	.010	.002
0.50	.012	.021	.031	.037	.019	.006	.001
0.55	.010	.017	.025	.027	.013	.003	.001
0.60	.009	.014	.020	.020	.008	.002	.000
0.65	.007	.011	.015	.014	.005	.001	.000
0.70	.005	.008	.011	.009	.003	.000	.000
0.75	.004	.006	.008	.006	.001	.000	.000
0.80	.003	.005	.006	.004	.001	.000	.000
0.85	.002	.003	.004	.002	.000	.000	.000
0.90	.002	.002	.003	.001	.000	.000	.000
0.95	.001	.002	.002	.001	.000	.000	.000
1.00	.001	.001	.001	.000	.000	.000	.000
1.05	.001	.001	.001	.000	.000	.000	.000
1.10	.000	.000	.000	.000	.000	.000	.000
1.15	.000	.000	.000	.000	.000	.000	.000
1.20	.000	.000	.000	.000	.000	.000	.000
1.25	.000	.000	.000	.000	.000	.000	.000
1.30	.000	.000	.000	.000	.000	.000	.000
1.35	.000	.000	.000	.000	.000	.000	.000
1.40	.000	.000	.000	.000	.000	.000	.000
1.45	.000	.000	.000	.000	.000	.000	.000
1.50	.000	.000	.000	.000	.000	.000	.000
1.55	.000	.000	.000	.000	.000	.000	.000
1.60	.000	.000	.000	.000	.000	.000	.000
1.65	.000	.000	.000	.000	.000	.000	.000
1.70	.000	.000	.000	.000	.000	.000	.000
1.75	.000	.000	.000	.000	.000	.000	.000
1.80	.000	.000	.000	.000	.000	.000	.000

JOINT PROBABILITY OF
SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES,
IN SAMPLES FROM A NORMAL DISTRIBUTION (μ=0,σ=1)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN
IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

n = 8
i = 2

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-2.50	.001	.003	.010	.051	.149	.238	.294
-2.45	.001	.003	.010	.051	.149	.238	.294
-2.40	.001	.003	.010	.051	.149	.238	.294
-2.35	.001	.003	.010	.051	.149	.238	.294
-2.30	.001	.003	.010	.051	.149	.238	.294
-2.25	.001	.003	.010	.051	.149	.238	.294
-2.20	.001	.003	.010	.051	.149	.238	.294
-2.15	.001	.003	.010	.051	.149	.238	.294
-2.10	.001	.003	.010	.051	.149	.238	.294
-2.05	.001	.003	.010	.051	.149	.238	.294
-2.00	.001	.003	.010	.051	.149	.238	.294
-1.95	.001	.003	.010	.051	.149	.238	.294
-1.90	.001	.003	.010	.051	.149	.238	.294
-1.85	.001	.003	.010	.051	.149	.238	.294
-1.80	.001	.003	.010	.051	.149	.238	.294
-1.75	.001	.003	.010	.051	.149	.238	.294
-1.70	.001	.003	.010	.051	.149	.238	.294
-1.65	.001	.003	.010	.051	.149	.238	.294
-1.60	.001	.003	.010	.051	.149	.238	.294
-1.55	.001	.003	.010	.051	.149	.238	.294
-1.50	.001	.003	.010	.051	.149	.238	.294
-1.45	.001	.003	.010	.051	.149	.238	.294
-1.40	.001	.003	.010	.051	.149	.238	.294
-1.35	.001	.003	.010	.051	.149	.238	.294
-1.30	.001	.003	.010	.051	.149	.238	.294
-1.25	.001	.003	.010	.051	.149	.238	.294
-1.20	.001	.003	.010	.051	.149	.238	.294
-1.15	.001	.003	.010	.051	.149	.238	.294
-1.10	.001	.003	.010	.051	.149	.238	.294
-1.05	.001	.003	.010	.051	.149	.238	.294
-1.00	.001	.003	.010	.051	.149	.238	.294
-0.95	.001	.003	.010	.051	.149	.238	.294
-0.90	.001	.003	.010	.051	.149	.238	.294
-0.85	.001	.003	.010	.051	.149	.238	.294
-0.80	.001	.003	.010	.051	.149	.238	.293
-0.75	.001	.003	.010	.051	.149	.238	.293
-0.70	.001	.003	.010	.051	.149	.237	.293
-0.65	.001	.003	.010	.051	.149	.237	.293
-0.60	.001	.003	.010	.051	.149	.237	.292
-0.55	.001	.003	.010	.051	.149	.237	.291
-0.50	.001	.003	.010	.051	.148	.236	.290

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-0.45	.001	.003	.010	.051	.148	.235	.288
-0.40	.001	.003	.010	.051	.148	.234	.285
-0.35	.001	.003	.010	.051	.147	.232	.281
-0.30	.001	.003	.010	.051	.146	.229	.275
-0.25	.001	.003	.010	.051	.145	.225	.267
-0.20	.001	.003	.010	.051	.143	.220	.257
-0.15	.001	.003	.010	.050	.141	.214	.244
-0.10	.001	.003	.010	.050	.138	.205	.229
-0.05	.001	.003	.010	.049	.133	.194	.211
0.00	.001	.003	.010	.048	.128	.182	.190
0.05	.001	.003	.010	.047	.122	.167	.168
0.10	.001	.003	.009	.045	.114	.151	.145
0.15	.001	.003	.009	.043	.105	.134	.121
0.20	.001	.002	.009	.041	.096	.115	.098
0.25	.001	.002	.009	.038	.085	.097	.077
0.30	.001	.002	.008	.035	.074	.079	.058
0.35	.001	.002	.008	.032	.063	.063	.042
0.40	.001	.002	.007	.029	.053	.048	.029
0.45	.001	.002	.007	.025	.042	.035	.019
0.50	.001	.002	.006	.021	.033	.025	.012
0.55	.000	.002	.005	.018	.025	.017	.007
0.60	.000	.001	.005	.015	.019	.011	.004
0.65	.000	.001	.004	.012	.013	.007	.002
0.70	.000	.001	.003	.009	.009	.004	.001
0.75	.000	.001	.003	.007	.006	.002	.001
0.80	.000	.001	.002	.005	.004	.001	.000
0.85	.000	.001	.002	.004	.002	.001	.000
0.90	.000	.001	.001	.002	.001	.000	.000
0.95	.000	.000	.001	.002	.001	.000	.000
1.00	.000	.000	.001	.001	.000	.000	.000
1.05	.000	.000	.000	.001	.000	.000	.000
1.10	.000	.000	.000	.000	.000	.000	.000
1.15	.000	.000	.000	.000	.000	.000	.000
1.20	.000	.000	.000	.000	.000	.000	.000
1.25	.000	.000	.000	.000	.000	.000	.000
1.30	.000	.000	.000	.000	.000	.000	.000
1.35	.000	.000	.000	.000	.000	.000	.000
1.40	.000	.000	.000	.000	.000	.000	.000
1.45	.000	.000	.000	.000	.000	.000	.000
1.50	.000	.000	.000	.000	.000	.000	.000
1.55	.000	.000	.000	.000	.000	.000	.000
1.60	.000	.000	.000	.000	.000	.000	.000
1.65	.000	.000	.000	.000	.000	.000	.000
1.70	.000	.000	.000	.000	.000	.000	.000
1.75	.000	.000	.000	.000	.000	.000	.000
1.80	.000	.000	.000	.000	.000	.000	.000

JOINT PROBABILITY OF
SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES,
IN SAMPLES FROM A NORMAL DISTRIBUTION (μ=0,σ=1)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN
IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

n = 9
i = 0

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-2.50	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-2.45	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-2.40	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-2.35	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-2.30	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-2.25	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-2.20	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-2.15	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-2.10	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-2.05	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-2.00	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-1.95	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-1.90	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-1.85	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-1.80	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-1.75	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-1.70	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-1.65	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-1.60	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-1.55	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-1.50	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-1.45	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-1.40	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-1.35	.9559	.9135	.8337	.6302	.3874	.2316	.1342
-1.30	.9558	.9135	.8337	.6302	.3874	.2316	.1342
-1.25	.9558	.9134	.8337	.6302	.3873	.2315	.1341
-1.20	.9557	.9134	.8336	.6301	.3873	.2315	.1341
-1.15	.9556	.9132	.8335	.6300	.3871	.2314	.1340
-1.10	.9554	.9130	.8333	.6298	.3870	.2312	.1338
-1.05	.9551	.9127	.8329	.6294	.3866	.2309	.1335
-1.00	.9545	.9122	.8324	.6289	.3861	.2304	.1331
-0.95	.9537	.9113	.8316	.6281	.3854	.2297	.1325
-0.90	.9524	.9101	.8303	.6269	.3842	.2286	.1315
-0.85	.9505	.9081	.8284	.6250	.3825	.2271	.1302
-0.80	.9477	.9053	.8256	.6223	.3800	.2248	.1282
-0.75	.9437	.9013	.8216	.6185	.3765	.2218	.1256
-0.70	.9381	.8957	.8161	.6131	.3717	.2176	.1222
-0.65	.9303	.8881	.8085	.6059	.3652	.2121	.1178
-0.60	.9200	.8778	.7984	.5963	.3568	.2051	.1123
-0.55	.9065	.8644	.7851	.5839	.3461	.1964	.1056
-0.50	.8893	.8472	.7683	.5682	.3329	.1859	.0979

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-0.45	.8677	.8258	.7473	.5488	.3169	.1736	.0890
-0.40	.8413	.7997	.7218	.5256	.2982	.1596	.0793
-0.35	.8098	.7685	.6914	.4983	.2768	.1441	.0691
-0.30	.7729	.7321	.6561	.4670	.2530	.1275	.0586
-0.25	.7308	.6907	.6161	.4322	.2274	.1104	.0483
-0.20	.6839	.6445	.5718	.3943	.2005	.0932	.0386
-0.15	.6326	.5943	.5239	.3541	.1732	.0766	.0297
-0.10	.5779	.5408	.4733	.3127	.1463	.0612	.0220
-0.05	.5209	.4854	.4212	.2710	.1205	.0473	.0157
0.00	.4628	.4291	.3688	.2304	.0967	.0353	.0106
0.05	.4050	.3734	.3174	.1917	.0754	.0254	.0069
0.10	.3488	.3195	.2682	.1560	.0571	.0175	.0042
0.15	.2954	.2686	.2224	.1239	.0418	.0115	.0024
0.20	.2459	.2217	.1806	.0960	.0296	.0073	.0013
0.25	.2009	.1795	.1437	.0724	.0202	.0043	.0006
0.30	.1611	.1424	.1118	.0532	.0132	.0024	.0003
0.35	.1267	.1107	.0850	.0379	.0083	.0013	.0001
0.40	.0977	.0843	.0632	.0261	.0050	.0006	.0000
0.45	.0738	.0627	.0457	.0175	.0028	.0003	.0000
0.50	.0546	.0456	.0323	.0113	.0015	.0001	.0000
0.55	.0395	.0324	.0222	.0070	.0008	.0000	.0000
0.60	.0279	.0225	.0148	.0042	.0004	.0000	.0000
0.65	.0193	.0152	.0096	.0024	.0002	.0000	.0000
0.70	.0130	.0100	.0061	.0013	.0001	.0000	.0000
0.75	.0086	.0064	.0037	.0007	.0000	.0000	.0000
0.80	.0055	.0040	.0022	.0003	.0000	.0000	.0000
0.85	.0035	.0024	.0013	.0002	.0000	.0000	.0000
0.90	.0021	.0014	.0007	.0001	.0000	.0000	.0000
0.95	.0013	.0008	.0004	.0000	.0000	.0000	.0000
1.00	.0007	.0005	.0002	.0000	.0000	.0000	.0000
1.05	.0004	.0002	.0001	.0000	.0000	.0000	.0000
1.10	.0002	.0001	.0000	.0000	.0000	.0000	.0000
1.15	.0001	.0001	.0000	.0000	.0000	.0000	.0000
1.20	.0001	.0000	.0000	.0000	.0000	.0000	.0000
1.25	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.30	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.35	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.40	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.45	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.50	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.55	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.60	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.65	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.70	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.75	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.80	.0000	.0000	.0000	.0000	.0000	.0000	.0000

JOINT PROBABILITY OF
SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES,
IN SAMPLES FROM A NORMAL DISTRIBUTION (μ=0,σ=1)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN
IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

n = 9
i = 1

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-2.50	.043	.083	.153	.298	.387	.368	.302
-2.45	.043	.083	.153	.298	.387	.368	.302
-2.40	.043	.083	.153	.298	.387	.368	.302
-2.35	.043	.083	.153	.298	.387	.368	.302
-2.30	.043	.083	.153	.298	.387	.368	.302
-2.25	.043	.083	.153	.298	.387	.368	.302
-2.20	.043	.083	.153	.298	.387	.368	.302
-2.15	.043	.083	.153	.298	.387	.368	.302
-2.10	.043	.083	.153	.298	.387	.368	.302
-2.05	.043	.083	.153	.298	.387	.368	.302
-2.00	.043	.083	.153	.298	.387	.368	.302
-1.95	.043	.083	.153	.298	.387	.368	.302
-1.90	.043	.083	.153	.298	.387	.368	.302
-1.85	.043	.083	.153	.298	.387	.368	.302
-1.80	.043	.083	.153	.298	.387	.368	.302
-1.75	.043	.083	.153	.298	.387	.368	.302
-1.70	.043	.083	.153	.298	.387	.368	.302
-1.65	.043	.083	.153	.298	.387	.368	.302
-1.60	.043	.083	.153	.298	.387	.368	.302
-1.55	.043	.083	.153	.298	.387	.368	.302
-1.50	.043	.083	.153	.298	.387	.368	.302
-1.45	.043	.083	.153	.298	.387	.368	.302
-1.40	.043	.083	.153	.298	.387	.368	.302
-1.35	.043	.083	.153	.298	.387	.368	.302
-1.30	.043	.083	.153	.298	.387	.368	.302
-1.25	.043	.083	.153	.298	.387	.368	.302
-1.20	.043	.083	.153	.298	.387	.368	.302
-1.15	.043	.083	.153	.298	.387	.368	.302
-1.10	.043	.083	.153	.298	.387	.368	.302
-1.05	.043	.083	.153	.298	.387	.368	.302
-1.00	.043	.083	.153	.298	.387	.368	.302
-0.95	.043	.083	.153	.298	.387	.368	.302
-0.90	.043	.083	.153	.298	.387	.367	.301
-0.85	.043	.083	.153	.298	.387	.367	.301
-0.80	.043	.083	.153	.298	.387	.366	.300
-0.75	.043	.083	.153	.298	.386	.366	.299
-0.70	.043	.083	.153	.298	.385	.364	.297
-0.65	.043	.083	.153	.297	.384	.362	.294
-0.60	.043	.083	.153	.297	.382	.359	.290
-0.55	.043	.083	.152	.295	.380	.355	.284
-0.50	.043	.082	.152	.294	.376	.349	.276

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-0.45	.043	.082	.151	.291	.370	.340	.266
-0.40	.043	.082	.150	.288	.363	.330	.254
-0.35	.042	.081	.149	.284	.354	.316	.238
-0.30	.042	.080	.147	.278	.341	.300	.220
-0.25	.042	.079	.144	.271	.326	.280	.199
-0.20	.041	.078	.141	.261	.308	.257	.176
-0.15	.040	.076	.137	.250	.287	.232	.152
-0.10	.039	.074	.132	.237	.264	.205	.128
-0.05	.038	.071	.126	.221	.238	.176	.104
0.00	.036	.067	.119	.204	.210	.148	.082
0.05	.034	.064	.111	.185	.181	.121	.062
0.10	.032	.059	.102	.165	.153	.095	.045
0.15	.030	.054	.092	.144	.126	.073	.031
0.20	.028	.049	.082	.124	.101	.053	.021
0.25	.025	.044	.072	.104	.078	.038	.013
0.30	.022	.039	.062	.085	.058	.025	.008
0.35	.019	.033	.052	.068	.042	.016	.004
0.40	.017	.028	.043	.053	.029	.010	.002
0.45	.014	.023	.035	.040	.020	.006	.001
0.50	.012	.019	.028	.029	.013	.003	.000
0.55	.009	.015	.021	.021	.008	.002	.000
0.60	.007	.012	.016	.014	.005	.001	.000
0.65	.006	.009	.012	.009	.002	.000	.000
0.70	.004	.007	.008	.006	.001	.000	.000
0.75	.003	.005	.006	.004	.001	.000	.000
0.80	.002	.003	.004	.002	.000	.000	.000
0.85	.002	.002	.003	.001	.000	.000	.000
0.90	.001	.002	.002	.001	.000	.000	.000
0.95	.001	.001	.001	.000	.000	.000	.000
1.00	.001	.001	.001	.000	.000	.000	.000
1.05	.000	.000	.000	.000	.000	.000	.000
1.10	.000	.000	.000	.000	.000	.000	.000
1.15	.000	.000	.000	.000	.000	.000	.000
1.20	.000	.000	.000	.000	.000	.000	.000
1.25	.000	.000	.000	.000	.000	.000	.000
1.30	.000	.000	.000	.000	.000	.000	.000
1.35	.000	.000	.000	.000	.000	.000	.000
1.40	.000	.000	.000	.000	.000	.000	.000
1.45	.000	.000	.000	.000	.000	.000	.000
1.50	.000	.000	.000	.000	.000	.000	.000
1.55	.000	.000	.000	.000	.000	.000	.000
1.60	.000	.000	.000	.000	.000	.000	.000
1.65	.000	.000	.000	.000	.000	.000	.000
1.70	.000	.000	.000	.000	.000	.000	.000
1.75	.000	.000	.000	.000	.000	.000	.000
1.80	.000	.000	.000	.000	.000	.000	.000

JOINT PROBABILITY OF
SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES,
IN SAMPLES FROM A NORMAL DISTRIBUTION (μ=0,σ=1)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN
IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

n = 9
i = 2

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-2.50	.001	.003	.013	.063	.172	.260	.302
-2.45	.001	.003	.013	.063	.172	.260	.302
-2.40	.001	.003	.013	.063	.172	.260	.302
-2.35	.001	.003	.013	.063	.172	.260	.302
-2.30	.001	.003	.013	.063	.172	.260	.302
-2.25	.001	.003	.013	.063	.172	.260	.302
-2.20	.001	.003	.013	.063	.172	.260	.302
-2.15	.001	.003	.013	.063	.172	.260	.302
-2.10	.001	.003	.013	.063	.172	.260	.302
-2.05	.001	.003	.013	.063	.172	.260	.302
-2.00	.001	.003	.013	.063	.172	.260	.302
-1.95	.001	.003	.013	.063	.172	.260	.302
-1.90	.001	.003	.013	.063	.172	.260	.302
-1.85	.001	.003	.013	.063	.172	.260	.302
-1.80	.001	.003	.013	.063	.172	.260	.302
-1.75	.001	.003	.013	.063	.172	.260	.302
-1.70	.001	.003	.013	.063	.172	.260	.302
-1.65	.001	.003	.013	.063	.172	.260	.302
-1.60	.001	.003	.013	.063	.172	.260	.302
-1.55	.001	.003	.013	.063	.172	.260	.302
-1.50	.001	.003	.013	.063	.172	.260	.302
-1.45	.001	.003	.013	.063	.172	.260	.302
-1.40	.001	.003	.013	.063	.172	.260	.302
-1.35	.001	.003	.013	.063	.172	.260	.302
-1.30	.001	.003	.013	.063	.172	.260	.302
-1.25	.001	.003	.013	.063	.172	.260	.302
-1.20	.001	.003	.013	.063	.172	.260	.302
-1.15	.001	.003	.013	.063	.172	.260	.302
-1.10	.001	.003	.013	.063	.172	.260	.302
-1.05	.001	.003	.013	.063	.172	.260	.302
-1.00	.001	.003	.013	.063	.172	.260	.302
-0.95	.001	.003	.013	.063	.172	.260	.302
-0.90	.001	.003	.013	.063	.172	.260	.302
-0.85	.001	.003	.013	.063	.172	.260	.302
-0.80	.001	.003	.013	.063	.172	.260	.302
-0.75	.001	.003	.013	.063	.172	.260	.302
-0.70	.001	.003	.013	.063	.172	.259	.301
-0.65	.001	.003	.013	.063	.172	.259	.301
-0.60	.001	.003	.013	.063	.172	.259	.300
-0.55	.001	.003	.012	.063	.172	.259	.299
-0.50	.001	.003	.012	.063	.172	.258	.297

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-0.45	.001	.003	.012	.063	.171	.257	.295
-0.40	.001	.003	.012	.063	.171	.255	.291
-0.35	.001	.003	.012	.063	.170	.252	.285
-0.30	.001	.003	.012	.062	.169	.248	.278
-0.25	.001	.003	.012	.062	.167	.243	.268
-0.20	.001	.003	.012	.062	.164	.236	.255
-0.15	.001	.003	.012	.061	.160	.227	.239
-0.10	.001	.003	.012	.060	.156	.215	.220
-0.05	.001	.003	.012	.059	.149	.201	.198
0.00	.001	.003	.012	.057	.142	.185	.174
0.05	.001	.003	.012	.055	.133	.166	.149
0.10	.001	.003	.011	.053	.122	.146	.124
0.15	.001	.003	.011	.050	.111	.125	.099
0.20	.001	.003	.011	.047	.098	.104	.077
0.25	.001	.003	.010	.043	.085	.084	.057
0.30	.001	.003	.010	.039	.071	.066	.040
0.35	.001	.003	.009	.034	.059	.049	.027
0.40	.001	.002	.008	.029	.047	.035	.017
0.45	.001	.002	.007	.025	.036	.024	.010
0.50	.001	.002	.006	.021	.027	.016	.006
0.55	.001	.002	.005	.016	.019	.010	.003
0.60	.000	.002	.005	.013	.013	.006	.002
0.65	.000	.001	.004	.010	.009	.003	.001
0.70	.000	.001	.003	.007	.005	.002	.000
0.75	.000	.001	.002	.005	.003	.001	.000
0.80	.000	.001	.002	.003	.002	.000	.000
0.85	.000	.001	.001	.002	.001	.000	.000
0.90	.000	.000	.001	.001	.000	.000	.000
0.95	.000	.000	.001	.001	.000	.000	.000
1.00	.000	.000	.000	.000	.000	.000	.000
1.05	.000	.000	.000	.000	.000	.000	.000
1.10	.000	.000	.000	.000	.000	.000	.000
1.15	.000	.000	.000	.000	.000	.000	.000
1.20	.000	.000	.000	.000	.000	.000	.000
1.25	.000	.000	.000	.000	.000	.000	.000
1.30	.000	.000	.000	.000	.000	.000	.000
1.35	.000	.000	.000	.000	.000	.000	.000
1.40	.000	.000	.000	.000	.000	.000	.000
1.45	.000	.000	.000	.000	.000	.000	.000
1.50	.000	.000	.000	.000	.000	.000	.000
1.55	.000	.000	.000	.000	.000	.000	.000
1.60	.000	.000	.000	.000	.000	.000	.000
1.65	.000	.000	.000	.000	.000	.000	.000
1.70	.000	.000	.000	.000	.000	.000	.000
1.75	.000	.000	.000	.000	.000	.000	.000
1.80	.000	.000	.000	.000	.000	.000	.000

JOINT PROBABILITY OF
SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES,
IN SAMPLES FROM A NORMAL DISTRIBUTION (μ=0,σ=1)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN
IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

n = 10
i = 0

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-2.50	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-2.45	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-2.40	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-2.35	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-2.30	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-2.25	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-2.20	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-2.15	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-2.10	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-2.05	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-2.00	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-1.95	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-1.90	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-1.85	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-1.80	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-1.75	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-1.70	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-1.65	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-1.60	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-1.55	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-1.50	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-1.45	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-1.40	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-1.35	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-1.30	.9511	.9044	.8171	.5987	.3487	.1969	.1074
-1.25	.9511	.9043	.8170	.5987	.3486	.1968	.1073
-1.20	.9510	.9043	.8170	.5987	.3486	.1968	.1073
-1.15	.9510	.9042	.8169	.5986	.3485	.1967	.1073
-1.10	.9509	.9041	.8168	.5985	.3484	.1966	.1072
-1.05	.9507	.9039	.8166	.5983	.3483	.1965	.1070
-1.00	.9503	.9036	.8163	.5980	.3479	.1962	.1068
-0.95	.9498	.9031	.8157	.5974	.3474	.1957	.1063
-0.90	.9489	.9022	.8149	.5966	.3466	.1950	.1057
-0.85	.9475	.9008	.8135	.5953	.3454	.1939	.1048
-0.80	.9454	.8987	.8114	.5932	.3436	.1923	.1034
-0.75	.9423	.8956	.8083	.5903	.3409	.1900	.1015
-0.70	.9377	.8910	.8038	.5860	.3371	.1867	.0989
-0.65	.9312	.8846	.7975	.5800	.3318	.1824	.0955
-0.60	.9223	.8757	.7887	.5717	.3248	.1767	.0911
-0.55	.9102	.8637	.7769	.5608	.3155	.1694	.0857
-0.50	.8944	.8480	.7615	.5466	.3038	.1604	.0793

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-0.45	.8741	.8279	.7419	.5287	.2895	.1497	.0720
-0.40	.8487	.8028	.7174	.5067	.2723	.1373	.0638
-0.35	.8178	.7722	.6878	.4805	.2524	.1235	.0552
-0.30	.7810	.7360	.6529	.4501	.2301	.1087	.0464
-0.25	.7384	.6941	.6127	.4157	.2059	.0933	.0377
-0.20	.6902	.6469	.5677	.3781	.1804	.0780	.0296
-0.15	.6371	.5951	.5186	.3379	.1545	.0632	.0223
-0.10	.5801	.5396	.4665	.2964	.1290	.0496	.0161
-0.05	.5204	.4818	.4127	.2548	.1048	.0375	.0111
0.00	.4595	.4231	.3585	.2142	.0827	.0273	.0073
0.05	.3989	.3650	.3056	.1759	.0632	.0190	.0045
0.10	.3402	.3091	.2552	.1408	.0467	.0127	.0026
0.15	.2848	.2566	.2086	.1098	.0333	.0080	.0014
0.20	.2337	.2087	.1667	.0833	.0228	.0048	.0007
0.25	.1880	.1661	.1301	.0613	.0150	.0027	.0003
0.30	.1480	.1293	.0991	.0437	.0094	.0015	.0001
0.35	.1141	.0983	.0735	.0302	.0056	.0007	.0001
0.40	.0859	.0730	.0531	.0201	.0032	.0003	.0000
0.45	.0633	.0529	.0374	.0129	.0017	.0001	.0000
0.50	.0455	.0373	.0255	.0080	.0009	.0001	.0000
0.55	.0319	.0257	.0169	.0047	.0004	.0000	.0000
0.60	.0218	.0172	.0109	.0027	.0002	.0000	.0000
0.65	.0146	.0112	.0068	.0015	.0001	.0000	.0000
0.70	.0095	.0071	.0041	.0008	.0000	.0000	.0000
0.75	.0060	.0043	.0024	.0004	.0000	.0000	.0000
0.80	.0037	.0026	.0013	.0002	.0000	.0000	.0000
0.85	.0022	.0015	.0007	.0001	.0000	.0000	.0000
0.90	.0013	.0008	.0004	.0000	.0000	.0000	.0000
0.95	.0007	.0004	.0002	.0000	.0000	.0000	.0000
1.00	.0004	.0002	.0001	.0000	.0000	.0000	.0000
1.05	.0002	.0001	.0000	.0000	.0000	.0000	.0000
1.10	.0001	.0001	.0000	.0000	.0000	.0000	.0000
1.15	.0001	.0000	.0000	.0000	.0000	.0000	.0000
1.20	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.25	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.30	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.35	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.40	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.45	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.50	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.55	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.60	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.65	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.70	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.75	.0000	.0000	.0000	.0000	.0000	.0000	.0000
1.80	.0000	.0000	.0000	.0000	.0000	.0000	0000

JOINT PROBABILITY OF
SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES,
IN SAMPLES FROM A NORMAL DISTRIBUTION ($\mu=0,\sigma=1$)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN
IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

n = 10
i = 1

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-2.50	.048	.091	.167	.315	.387	.347	.268
-2.45	.048	.091	.167	.315	.387	.347	.268
-2.40	.048	.091	.167	.315	.387	.347	.268
-2.35	.048	.091	.167	.315	.387	.347	.268
-2.30	.048	.091	.167	.315	.387	.347	.268
-2.25	.048	.091	.167	.315	.387	.347	.268
-2.20	.048	.091	.167	.315	.387	.347	.268
-2.15	.048	.091	.167	.315	.387	.347	.268
-2.10	.048	.091	.167	.315	.387	.347	.268
-2.05	.048	.091	.167	.315	.387	.347	.268
-2.00	.048	.091	.167	.315	.387	.347	.268
-1.95	.048	.091	.167	.315	.387	.347	.268
-1.90	.048	.091	.167	.315	.387	.347	.268
-1.85	.048	.091	.167	.315	.387	.347	.268
-1.80	.048	.091	.167	.315	.387	.347	.268
-1.75	.048	.091	.167	.315	.387	.347	.268
-1.70	.048	.091	.167	.315	.387	.347	.268
-1.65	.048	.091	.167	.315	.387	.347	.268
-1.60	.048	.091	.167	.315	.387	.347	.268
-1.55	.048	.091	.167	.315	.387	.347	.268
-1.50	.048	.091	.167	.315	.387	.347	.268
-1.45	.048	.091	.167	.315	.387	.347	.268
-1.40	.048	.091	.167	.315	.387	.347	.268
-1.35	.048	.091	.167	.315	.387	.347	.268
-1.30	.048	.091	.167	.315	.387	.347	.268
-1.25	.048	.091	.167	.315	.387	.347	.268
-1.20	.048	.091	.167	.315	.387	.347	.268
-1.15	.048	.091	.167	.315	.387	.347	.268
-1.10	.048	.091	.167	.315	.387	.347	.268
-1.05	.048	.091	.167	.315	.387	.347	.268
-1.00	.048	.091	.167	.315	.387	.347	.268
-0.95	.048	.091	.167	.315	.387	.347	.268
-0.90	.048	.091	.167	.315	.387	.347	.268
-0.85	.048	.091	.167	.315	.387	.347	.268
-0.80	.048	.091	.167	.315	.387	.346	.267
-0.75	.048	.091	.167	.315	.386	.346	.266
-0.70	.048	.091	.166	.314	.386	.344	.264
-0.65	.048	.091	.166	.314	.384	.342	.261
-0.60	.048	.091	.166	.313	.383	.339	.258
-0.55	.048	.091	.166	.312	.380	.335	.252
-0.50	.047	.091	.165	.310	.376	.329	.245

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-0.45	.047	.090	.165	.308	.370	.321	.236
-0.40	.047	.090	.163	.304	.363	.310	.223
-0.35	.047	.089	.162	.300	.353	.297	.208
-0.30	.046	.088	.160	.293	.340	.280	.191
-0.25	.046	.087	.157	.285	.323	.259	.171
-0.20	.045	.085	.153	.274	.304	.236	.149
-0.15	.044	.083	.148	.261	.281	.210	.126
-0.10	.043	.080	.142	.246	.255	.183	.104
-0.05	.041	.077	.134	.228	.227	.154	.082
0.00	.039	.073	.126	.208	.197	.127	.062
0.05	.037	.068	.117	.186	.168	.100	.045
0.10	.035	.063	.106	.164	.138	.077	.031
0.15	.032	.057	.095	.141	.111	.056	.021
0.20	.029	.051	.083	.118	.086	.040	.013
0.25	.026	.045	.072	.097	.064	.027	.008
0.30	.022	.039	.061	.077	.046	.017	.004
0.35	.019	.033	.050	.060	.032	.010	.002
0.40	.016	.027	.040	.045	.021	.006	.001
0.45	.013	.022	.032	.033	.014	.003	.000
0.50	.011	.017	.024	.023	.008	.002	.000
0.55	.008	.013	.018	.016	.005	.001	.000
0.60	.007	.010	.013	.010	.003	.000	.000
0.65	.005	.007	.009	.006	.001	.000	.000
0.70	.004	.005	.006	.004	.001	.000	.000
0.75	.003	.004	.004	.002	.000	.000	.000
0.80	.002	.002	.003	.001	.000	.000	.000
0.85	.001	.002	.002	.001	.000	.000	.000
0.90	.001	.001	.001	.000	.000	.000	.000
0.95	.001	.001	.001	.000	.000	.000	.000
1.00	.000	.000	.000	.000	.000	.000	.000
1.05	.000	.000	.000	.000	.000	.000	.000
1.10	.000	.000	.000	.000	.000	.000	.000
1.15	.000	.000	.000	.000	.000	.000	.000
1.20	.000	.000	.000	.000	.000	.000	.000
1.25	.000	.000	.000	.000	.000	.000	.000
1.30	.000	.000	.000	.000	.000	.000	.000
1.35	.000	.000	.000	.000	.000	.000	.000
1.40	.000	.000	.000	.000	.000	.000	.000
1.45	.000	.000	.000	.000	.000	.000	.000
1.50	.000	.000	.000	.000	.000	.000	.000
1.55	.000	.000	.000	.000	.000	.000	.000
1.60	.000	.000	.000	.000	.000	.000	.000
1.65	.000	.000	.000	.000	.000	.000	.000
1.70	.000	.000	.000	.000	.000	.000	.000
1.75	.000	.000	.000	.000	.000	.000	.000
1.80	.000	.000	.000	.000	.000	.000	.000

JOINT PROBABILITY OF
SAMPLE MEAN GREATER THAN z_A AND EXACTLY i DEFECTIVES,
IN SAMPLES FROM A NORMAL DISTRIBUTION (μ=0,σ=1)

(z_A-DEVIATION OF ACCEPTANCE LIMIT, A, FROM PROCESS MEAN
IN UNITS OF KNOWN STANDARD DEVIATION OF INDIVIDUALS)

n = 10
i = 2

MEAN	FRACTION DEFECTIVE, p						
z_A	.005	.01	.02	.05	.10	.15	.20
-2.50	.001	.004	.015	.075	.194	.276	.302
-2.45	.001	.004	.015	.075	.194	.276	.302
-2.40	.001	.004	.015	.075	.194	.276	.302
-2.35	.001	.004	.015	.075	.194	.276	.302
-2.30	.001	.004	.015	.075	.194	.276	.302
-2.25	.001	.004	.015	.075	.194	.276	.302
-2.20	.001	.004	.015	.075	.194	.276	.302
-2.15	.001	.004	.015	.075	.194	.276	.302
-2.10	.001	.004	.015	.075	.194	.276	.302
-2.05	.001	.004	.015	.075	.194	.276	.302
-2.00	.001	.004	.015	.075	.194	.276	.302
-1.95	.001	.004	.015	.075	.194	.276	.302
-1.90	.001	.004	.015	.075	.194	.276	.302
-1.85	.001	.004	.015	.075	.194	.276	.302
-1.80	.001	.004	.015	.075	.194	.276	.302
-1.75	.001	.004	.015	.075	.194	.276	.302
-1.70	.001	.004	.015	.075	.194	.276	.302
-1.65	.001	.004	.015	.075	.194	.276	.302
-1.60	.001	.004	.015	.075	.194	.276	.302
-1.55	.001	.004	.015	.075	.194	.276	.302
-1.50	.001	.004	.015	.075	.194	.276	.302
-1.45	.001	.004	.015	.075	.194	.276	.302
-1.40	.001	.004	.015	.075	.194	.276	.302
-1.35	.001	.004	.015	.075	.194	.276	.302
-1.30	.001	.004	.015	.075	.194	.276	.302
-1.25	.001	.004	.015	.075	.194	.276	.302
-1.20	.001	.004	.015	.075	.194	.276	.302
-1.15	.001	.004	.015	.075	.194	.276	.302
-1.10	.001	.004	.015	.075	.194	.276	.302
-1.05	.001	.004	.015	.075	.194	.276	.302
-1.00	.001	.004	.015	.075	.194	.276	.302
-0.95	.001	.004	.015	.075	.194	.276	.302
-0.90	.001	.004	.015	.075	.194	.276	.302
-0.85	.001	.004	.015	.075	.194	.276	.302
-0.80	.001	.004	.015	.075	.194	.276	.302
-0.75	.001	.004	.015	.075	.194	.276	.302
-0.70	.001	.004	.015	.075	.194	.276	.301
-0.65	.001	.004	.015	.075	.194	.275	.301
-0.60	.001	.004	.015	.075	.194	.275	.300
-0.55	.001	.004	.015	.075	.193	.275	.299
-0.50	.001	.004	.015	.075	.193	.274	.297

MEAN z_A	FRACTION DEFECTIVE, p .005	.01	.02	.05	.10	.15	.20
-0.45	.001	.004	.015	.074	.193	.272	.294
-0.40	.001	.004	.015	.074	.192	.270	.289
-0.35	.001	.004	.015	.074	.191	.266	.282
-0.30	.001	.004	.015	.074	.189	.261	.273
-0.25	.001	.004	.015	.073	.186	.255	.261
-0.20	.001	.004	.015	.073	.182	.245	.246
-0.15	.001	.004	.015	.072	.178	.234	.227
-0.10	.001	.004	.015	.071	.171	.219	.205
-0.05	.001	.004	.015	.069	.163	.202	.181
0.00	.001	.004	.015	.067	.153	.182	.155
0.05	.001	.004	.014	.064	.141	.160	.128
0.10	.001	.004	.014	.060	.127	.137	.102
0.15	.001	.004	.013	.056	.113	.114	.078
0.20	.001	.004	.012	.051	.097	.091	.057
0.25	.001	.003	.012	.046	.081	.070	.040
0.30	.001	.003	.011	.041	.066	.052	.027
0.35	.001	.003	.010	.035	.052	.037	.017
0.40	.001	.003	.009	.029	.040	.025	.010
0.45	.001	.002	.008	.024	.029	.016	.005
0.50	.001	.002	.006	.019	.020	.010	.003
0.55	.001	.002	.005	.015	.014	.006	.001
0.60	.000	.002	.004	.011	.009	.003	.001
0.65	.000	.001	.003	.008	.005	.002	.000
0.70	.000	.001	.003	.005	.003	.001	.000
0.75	.000	.001	.002	.004	.002	.000	.000
0.80	.000	.001	.001	.002	.001	.000	.000
0.85	.000	.000	.001	.001	.000	.000	.000
0.90	.000	.000	.001	.001	.000	.000	.000
0.95	.000	.000	.000	.000	.000	.000	.000
1.00	.000	.000	.000	.000	.000	.000	.000
1.05	.000	.000	.000	.000	.000	.000	.000
1.10	.000	.000	.000	.000	.000	.000	.000
1.15	.000	.000	.000	.000	.000	.000	.000
1.20	.000	.000	.000	.000	.000	.000	.000
1.25	.000	.000	.000	.000	.000	.000	.000
1.30	.000	.000	.000	.000	.000	.000	.000
1.35	.000	.000	.000	.000	.000	.000	.000
1.40	.000	.000	.000	.000	.000	.000	.000
1.45	.000	.000	.000	.000	.000	.000	.000
1.50	.000	.000	.000	.000	.000	.000	.000
1.55	.000	.000	.000	.000	.000	.000	.000
1.60	.000	.000	.000	.000	.000	.000	.000
1.65	.000	.000	.000	.000	.000	.000	.000
1.70	.000	.000	.000	.000	.000	.000	.000
1.75	.000	.000	.000	.000	.000	.000	.000
1.80	.000	.000	.000	.000	.000	.000	.000