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A TABLE FOR SOLVING THE BINOMIAL EQUATION

$B(c,n,p) = P$

for $c = 0(1)50$ and 15 values of P

BY

A. HALD AND E. KOUSGAARD

København 1967

Kommissionær: Munksgaard

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Synopsis

The table contains values of n to four significant figures satisfying the equation

$$B(c,n,p) = \sum_{x=0}^{c} \binom{n}{x} p^x (1-p)^{n-x} = P$$

for $c = 0(1)50$, 14 values of p ranging from 0.001 to 0.5, and 15 values of P from 0.001 to 0.999. The variable n has been treated as a continuous variable by defining $\binom{n}{x}$ as $n(n-1)\ldots(n-x+1)/x!$ for real values of $n \geq x$.

Since $B(c, n, p) = 1 - B(n-c-1, n, 1-p)$ the table may also be used for $0.5 < p < 1$ and integral values of $n-c \leq 51$.

The table has been constructed with the main purpose to provide a simple and comprehensive means for computing the binomial operating characteristic of single sampling plans or equivalently to find confidence limits for p in the binomial distribution. Accurate approximation formulas are available for $c > 50$.

The new feature of the present table is to give n as function of p, $n = n(p)$, for given c and P with such a spacing of p that the function $pn(p)$ is practically linear between the given arguments. This leads to a very compact table and simple formulas of interpolation for both p and n with a maximum relative error of 0.1 % in most cases.

An essential advantage of the table as compared to other tables of the binomial distribution is that for $c \leq 50$ interpolation is required only with respect to n for determining p.

Even if the main purpose of the table has been to facilitate the determination of p for given values of the other parameters, the table may naturally be used to determine any one of the four parameters for given values of the three others.

A special table with smaller intervals for p has been given for $c = 1$, 2 and 3 to obtain sufficient accurate interpolates.

The binomial table has been supplemented by a corresponding Poisson table giving np as function of c for given P by solving the equation

$$B(c,np) = \sum_{x=0}^{c} e^{-np}(np)^x/x! = P.$$

Several examples of applications of the table are discussed.

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1. Introduction and Summary

The table contains values of n to four significant figures satisfying the equation

$$B(c,n,p) = \sum_{x=0}^{c} \binom{n}{x} p^x (1-p)^{n-x} = P \tag{1}$$

for $c = 0(1)50$, 14 values of p ranging from 0.001 to 0.5, and 15 values of P from 0.001 to 0.999. The variable n has been treated as a continuous variable by defining $\binom{n}{x}$ as $n(n-1)\ldots(n-x+1)/x!$ for real values of $n \geqq x$.

Since $B(c,n,p) = 1 - B(n-c-1, n, 1-p)$ the table may also be used for $0.5 < p < 1$ and integral values of $n - c \leqq 51$.

From the relationship

$$B(c,n,p) = 1 - I_p(c+1, n-c) = I_{1-p}(n-c, c+1),$$

where $I_x(a,b)$ denotes the cumulative beta distribution with parameters (a,b), it follows that the table also may be used to find fractiles of the beta distribution.

The table has been constructed with the main purpose to provide a simple and comprehensive means for computing the binomial operating characteristic of single sampling plans or equivalently to find confidence limits for p in the binomial distribution. Since acceptance numbers for sampling plans and number of failures in reliability investigations usually are less than 50 the table has been limited to $c = 0(1)50$. Accurate approximation formulas are available for $c > 50$.

Other tables constructed for similar purposes—including tables of fractiles of the beta distribution—give p directly as function of c and n (or $n-c$) for given P with a rather limited range of variation for (c,n) or with a spacing of (c,n) requiring interpolation with respect to *both* arguments apart from small values of both c and n.

The new feature of the present table is to give n as function of p, $n = n(p)$, for given c and P with such a spacing of p that the function $pn(p)$ is practically linear between the given arguments. This leads to a very compact table and simple formulas of interpolation for both p and n with a maximum relative error of 0.1 % in most cases.

Since $\Delta_n B(c,n,p) = -pb(c,n,p) < 0$ it follows that $n(p)$ is a decreasing function of p so that the values of n tabulated are larger than or equal to $n(0.5)$.

An essential advantage of the table as compared to the tables mentioned above is that for $c \leqq 50$ and $n \geqq n(0.5)$ interpolation is required only with respect to n for determining p.

The table has been calculated on a GIER-computer with an error on the fifth significant figure of n less than 1. The rounding off to four significant figures has been carried out so that the table gives for $P < 0.5$ the smallest n for which $B(c,n,p) \leqq P$, for $P > 0.5$ the largest n for which $B(c,n,p) \geqq P$, and for $P = 0.5$ the value of n which minimizes $|B(c,n,p) - 0.5|$.

Even if the main purpose of the table has been to facilitate the determination of p for given values of the other parameters, the table may naturally be used to determine any one of the four parameters for given values of the three others.

A special table with smaller intervals for p has been given for $c = 1,2$ and 3 to obtain sufficient accurate interpolates.

The binomial table has been supplemented by a corresponding Poisson table giving np as function of c for given P by solving the equation

$$B(c,np) = \sum_{x=0}^{c} e^{-np}(np)^x/x! = P. \tag{2}$$

This value of np naturally equals $\lim [pn(p)]$ for $p \to 0$.

The values of np for $P = 0.5$ have not been included because the formula $np = c + 2/3$ is correct to four significant figures for $c \geqq 10$, and the first 10 values of np are: 0.6931, 1.678, 2.674, 3.672, 4.671, 5.670, 6.670, 7.669, 8.669, 9.669.

As examples of applications of the table we shall discuss some problems from the theory of sampling inspection:

(1) To find the acceptance number corresponding to given sample size, quality level, and acceptance probability (Example 9).
(2) To find the sample size corresponding to given acceptance number, quality level and acceptance probability (Example 3).
(3) To find a sampling plan with given producer's and consumer's risk (Example 11).
(4) To find the operating characteristic for a given sampling plan (Example 5 and 6).
(5) To find a system of IQL plans with a producer's risk decreasing with lot size (Example 12).

Furthermore, examples are given on the computation of significance and confidence limits for the binomial distribution (Example 7 and 10), and the Pascal distribution (Example 4 and 8) which may be used for example in reliability theory.

For a reader familar with such problems it is necessary to read only the following section on interpolation to be able to use the table effectively.

2. Interpolation and Asymptotic Formulas

Interpolation for n or p

For given c and P the product $pn(p)$ is nearly a linear function of p between the given arguments. For arguments (p_1,p_2) and corresponding values (n_1,n_2) we therefore have with good approximation for $p_1 < p < p_2$ that

$$np = [n_1p_1(p_2 - p) + n_2p_2(p - p_1)]/(p_2 - p_1),$$

which leads to

$$p = [(n_1 - n_2)p_1p_2]/[(n_1 - n)p_1 + (n - n_2)p_2], \qquad n_1 > n > n_2, \tag{3}$$

and

$$n = [n_1p_1(p_2 - p) + n_2p_2(p - p_1)]/[(p_2 - p_1)p], \qquad p_1 < p < p_2. \tag{4}$$

If less accuracy is required $pn(p)$ may be considered to be nearly constant in the neighbourhood of the nearest tabulated value of p or n, i.e. $p = n_1p_1/n$ and $n = n_1p_1/p$.

An investigation of the accuracy of these formulas has been carried out by comparing interpolates with exact values for values of p equal to the midpoints of the intervals used in the main table. The result has been summarized in the following tables.

Maximum absolute error on fourth significant figure and maximum relative error in per cent by calculating p from formula (3).

	Max. error on 4th sign. figure					Max. relative error in per cent		
c	$P = 0.999$	0.99	0.95	0.80	$\leqslant 0.50$	0.999	0.99	$\leqslant 0.95$
0	3	3	3	5	3	0.1	0.1	0.1
1–3	60	16	7	3	3	1.3	0.3	0.1
4–9	20	3	3	3	3	0.5	0.1	0.1
10–19	10	3	3	3	3	0.1	0.1	0.1
20–50	3	3	3	3	3	0.1	0.1	0.1

Maximum absolute error on fourth significant figure and maximum relative error in per cent by calculating n from formula (4).

	Max. error on 4th sign. figure					Max. relative error in per cent		
c	$P = 0.999$	0.99	0.95	0.80	$\leqslant 0.50$	0.999	0.99	$\leqslant 0.95$
0	2	2	2	1	1	0.1	0.1	0.1
1–3	15	6	3	3	1	0.8	0.2	0.1
4–9	8	4	3	3	1	0.1	0.1	0.1
10–50	4	4	3	3	1	0.1	0.1	0.1

Maximum relative error in per cent by calculating n or p from $np = n_1p_1$.

c	$P = 0.999$	0.99	$\leqslant 0.95$
0	2.0	2.0	2.0
1–3	16.0	8.0	3.0
4–9	5.0	3.0	2.0
10–39	3.0	2.0	1.0
40–50	1.0	1.0	0.5

It will be seen that the error may become particularly large for $c = 1,2$ and 3. Therefore for these three values of c the main table has been supplemented by a special table in which the p-intervals have been halved.

Generally the maximum relative error on p or n determined from (3) and (4) will be less than 0.1 per cent which suffices for most applications. In most cases the actual error is considerably less than 0.1 per cent.

Example 1. Interpolation for p and n.

Let us determine the solution to the equation $B(4, 150, p) = 0.10$. Since the table gives $n_1 = 157.9$ for $p_1 = 0.05$ and n_1 is close to n the simple formula $100\,p = 5 \times 157.9/150 = 5.263$ gives a rather accurate result. Formula (3) leads to

$$100p = (157.9 - 112.2)35/[(157.9 - 150.0)5 + (150.0 - 112.2)7] = 5.260.$$

Next, let us determine n so that $B(5,n,0.08) = 0.10$. The simple formula gives $n = 130.4 \times 7/8 = 114.1$, and formula (4) leads to

$$n = [9.128 \times 2 + 9.057 \times 1]/[0.08 \times 3] = 113.8.$$

Interpolation for *P*

The problem is to determine $B(c,n,p)$ for given c, n and p. Denoting the unknown value by P it is usually easy by inspection of the table to find two consecutive tabular values, P_1 and P_2 say, so that

$$P_1 = B(c,n_1,p) < B(c,n,p) < B(c,n_2,p) = P_2,$$

where $n_1 > n > n_2$. If p does not equal one of the given arguments, n_1 and n_2 have to be determined by (4). Finally, a first approximation to P is found by linear interpolation with respect to n.

Outside the interval $0.10 < P < 0.90$ linear interpolation will hardly be sufficiently accurate. One may therefore use three values (P_1,P_2,P_3) and find P by quadratic interpolation with respect to n using for example Aitken's iterative linear interpolation or equivalently

$$P = \frac{(n_1-n)(n_2-n)(n_3-n)}{(n_1-n_2)(n_1-n_3)(n_2-n_3)}\left[\frac{n_2-n_3}{n_1-n}P_1 + \frac{n_1-n_3}{n-n_2}P_2 + \frac{n_1-n_2}{n_3-n}P_3\right]. \qquad (5)$$

It is easier to carry out the computations by three linear interpolations as shown in Example 2 than to use (5).

Instead of keeping p fixed and determining (n_1,n_2) as above one might have kept n fixed and found (p_1,p_2) by (3) and finally P by interpolation with respect to p. However, since (4) is a little easier to use than (3) the first procedure is preferable.

Other possibilities are to interpolate on $\log P$ for small values of P (and on $\log(1-P)$ for large P) or on the corresponding normal deviate.

Example 2. Interpolation for P.

To determine $P = B(4, 116, 0.012)$ we see from the table that $0.975 < P < 0.99$. From (4) we find $n_1 = 136.5$ and $n_2 = 107.9$ as the two values satisfying $B(4,n_1,0.012) = 0.975$ and $B(4,n_2,0.012) = 0.99$. Linear interpolation with respect to n gives $P_{12} = 0.98575$.

To improve this result we find $n_3 = 91.26$ from the equation $B(4,n_3,0.012) = 0.995$. Linear "interpolation" based on n_2 and n_3 gives $P_{23} = 0.98757$.

Finally linear interpolation between P_{12} and P_{23} using n_1 and n_3 as arguments leads to

$$P = 0.98575 + 0.00182 \times 20.5/45.24 = 0.98657.$$

This result could also have been found directly from (5). The exact value is $P = 0.98667$.

To show the corresponding calculations with n fixed we first determine $p_1 = 0.01414$ and $p_2 = 0.01115$ as the two values satisfying $B(4,116,p_1) = 0.975$ and $B(4,116,p_2) = 0.99$, see (3). Linear interpolation with respect to p gives $P_{12} = 0.98574$.

To improve this result we find $p_3 = 0.009406$ from the equation $B(4,116,p_3) = 0.995$. Linear "interpolation" based on p_2 and p_3 gives $P_{23} = 0.98756$. Finally, linear interpolation between P_{12} and P_{23} leads to $P = 0.98656$ as compared to 0.98657 found above.

More examples of the accuracy of linear and quadratic interpolation may be found in Example 12.

Asymptotic Formulas

Using the relationship between the binomial and the beta distribution combined with the Fisher-Cornish expansion for the fractiles of the beta distribution we find the following expansion of n in terms of c, p and P

$$\begin{aligned} np &= c + 1 + u\sqrt{q(c+1)} - (1+p)/3 + u^2(1+q)/6 \\ &+ [u^3(2q-p^2) - u(14q+2p^2)]/72\sqrt{q(c+1)} + O(c^{-1}), \end{aligned} \tag{6}$$

where u denotes the $(1-P)$ fractile of the standardized normal distribution. A more detailed discussion of this approximation to n has been given by Hald (1967).

Setting $p = 0$ on the right hand side of (6) we get an approximation to the solution of (2).

The relative error by using (6) is less than $0.1\,\%$ for $0.001 \leqq P \leqq 0.999$ and $c \geqq 20$.

3. Examples of Determination of n

For given values of c, p and P (P being one of the tabular values) we may find n from (4).

Example 3. The sample size corresponding to a given acceptance number, quality level and acceptance probability.

For the acceptance number $c = 5$, say, we want to determine the sample size so that the consumer's (binomial) risk for $p = 0.08$ is as near as possible to $10\,\%$ without being larger than $10\,\%$, i.e. we want to solve the equation $B(5,n,0.08) = 0.10$. According to Example 1 the solution is $n = 113.8$, and since $B(c,n,p)$ is a decreasing function of n the value found should be rounded up to the nearest integer, i.e. $n = 114$.

Example 4. Significance limits for the number of trials in a Pascal distribution.

Let $G(c,n,p)$ denote the probability that a Bernoulli trial must be repeated at most n times in order to make the event occur exactly c times. Since the cumulative Pascal distribution $G(c,n,p) = 1 - B(c-1,n,p)$ we may use the table to find significance limits for n.

To find the $5\,\%$ and $95\,\%$ significance limits corresponding to $c = 6$ and $p = 0.10$ we solve the equations $B(5,n,0.10) = 0.95$ and $B(5,n,0.10) = 0.05$ which give $n = 27.38$ and $n = 102.4$, respectively. Consequently the $5\,\%$ significance limit for n equals 27 and the $95\,\%$ limit equals 103, so that the probability is slightly more than $90\,\%$ that the event in question will occur for the 6th time between the 27th and the 103rd trial, both included.

4. Examples of Determination of p

For given values of c, n and P we may find p from (3).

Example 5. The binomial operating characteristic for a given sampling plan.

Let a single sampling plan be defined by the sample size $n = 150$ and the acceptance number $c = 4$. We want to determine the binomial operating characteristic $P(p) = B(c,n,p)$, which gives the average probability of accepting lots produced by a binomial process with fraction defective (process average) equal to p.

Solutions of the equation $B(4,150,p) = P$.

$100P$	$100p$	$100P$	$100p$
99.9	0.4984	20.0	4.442
99.5	0.7254	10.0	5.260
99.0	0.8601	5.0	6.000
97.5	1.091	2.5	6.689
95.0	1.322	1.0	7.545
90.0	1.630	0.5	8.161
80.0	2.066	0.1	9.517
50.0	3.107		

From the table 15 values of the operating characteristic may be determined by means of formula (3). Example 1 shows how the $10\,\%$ point, $100p = 5.260$, is found. All 15 values are given in the table on page 8.

If other values of the operating characteristic are needed it will be necessary to use the method of interpolation shown in the last part of Example 2.

Example 6. The binomial operating characteristic for a given sampling plan with small sample size.

If the sample size is small it may happen that the value of p corresponding to a small value of P is larger than 0.5. In such cases we use the relation $B(c,n,p) = 1 - B(n-c-1, n, 1-p)$, i.e. we solve the equation $B(n-c-1, n, 1-p) = 1-P$ with respect to $1-p$.

As an example consider the case $n = 10$ and $c = 2$. For $P \geqq 0.10$ we use the same procedure as in Example 5. Since $c = 2$ we have, however, used the special table to obtain greater accuracy.

For $P \leqq 0.05$ we find $p > 0.5$, and we therefore have to solve the equation $B(7, 10, 1-p) = 1-P$. The results have been given in the following table.

Solutions of the equation $B(2,10,p) = P$.

$100P$	$100p$	$100P$	$100(1-P)$	$100(1-p)$	$100p$
99.9	2.102	5.0	95.0	49.31	50.69
99.5	3.701	2.5	97.5	44.39	55.61
99.0	4.750	1.0	99.0	38.84	61.16
97.5	6.672	0.5	99.5	35.16	64.84
95.0	8.720	0.1	99.9	28.16	71.84
90.0	11.58				
80.0	15.76				
50.0	25.85				
20.0	38.09				
10.0	44.96				

Example 7. Confidence limits for p in the binomial distribution.

Let us determine the $99\,\%$ confidence interval for p corresponding to the observed relative frequency $c/n = 4/150$. The lower limit is determined from $1 - B(3, 150, p_L) = 0.005$, and the upper limit from $B(4, 150, p_U) = 0.005$, which give $p_L = 0.004516$ and $p_U = 0.08161$ by means of (3).

As another example consider a reliability experiment consisting of 500 trials resulting in 451 successes, say. We want to determine an upper limit p_U for the probability of a failure with a confidence of $80\,\%$, i.e. we want to solve the equation $B(49, 500, p_U) = 0.20$. From (3) we get $p_U = 0.1109$.

Example 8. Confidence limits for p in the Pascal distribution.

Let us determine the $99\,\%$ confidence interval for p from the observation that the 4th failure (defective) occurs at the 150th trial, i.e. $(c,n) = (4, 150)$ in the Pascal distribution, see Example 4. The lower limit is determined from $G(4, 150, p_L) = 0.005$, and the upper from $1 - G(4, 149, p_U) = 0.005$. This means that we have to solve the equations $B(3, 150, p_L) = 0.995$ and $B(3, 149, p_U) = 0.005$, which lead to $p_L = 0.004516$ and $p_U = 0.07174$.

5. Examples of Determination of c

For given values of n, p and P the equation $B(c,n,p) = P$ will usually not have a solution with respect to c, if c has to be an integer. We therefore define c as the solution to the corresponding inequality $B(c,n,p) \leqq P < B(c+1, n, p)$.

By inspection of the table for the given P and by interpolation we may determine c and $n_1 \leqq n < n_2$ so that $B(c,n_1,p) = B(c+1, n_2, p) = P$. Since $B(c,n,p)$ is a decreasing function of n this equality is equivalent to the inequality sought for.

Example 9. The acceptance number corresponding to a given sample size, quality level and acceptance probability.

Let us determine the acceptance number corresponding to a sample size of $n = 150$ so that the consumer's binomial risk equals $10\,\%$ for $p = 0.04$, i.e. $B(c, 150, 0.04) = 0.10$. From (4) we get $B(2, 131.4, 0.04) = B(3, 165.2, 0.04) = 0.10$ so that $B(2, 150, 0.04) < 0.10 < B(3, 150, 0.04)$. Thus $c = 2$ is the acceptance number giving a consumer's risk closest to $10\,\%$ without being larger than $10\,\%$.

Example 10. Significance limits for the number of successes in a binomial distribution.

Let us determine the $5\,\%$ and $95\,\%$ significance limits in the binomial distribution for $n = 150$ and $p = 0.05$. Since $B(2, 123.8, 0.05) = B(3, 152.7, 0.05) = 0.05$ and $B(11, 140.5, 0.05) = B(12, 155.9, 0.05) = 0.95$ we have $B(2, 150, 0.05) < 0.05 < B(3, 150, 0.05)$ and $B(11, 150, 0.05) < 0.95 < B(12, 150, 0.05)$.

6. Examples of Determination of a Relation between c and n

In some problems we have only specified p and P so that the equation $B(c,n,p) = P$ defines a relation between c and n. In that case n may be found as a function of c by chosing successive values of c and determining corresponding values of n as described in section 3.

Example 11. Determination of a sampling plan with given producer's and consumer's risk.

A single sampling plan may be determined by specifying two risks or equivalently by setting $B(c,n,p_1) \geqq 1-\alpha$ and $B(c,n,p_2) \leqq \beta$ for given $p_1 < p_2$ and $1-\alpha > \beta$. The solution should be determined so that the probabilities are as close as possible to the values specified. Each of the two "equations" defines a relation between c and n, and the problem is to find the domain where both "equations" are satisfied.

By chosing suitable values of c and finding the corresponding two values of n we may find the solution as shown in the following example for $p_1 = 0.01$, $p_2 = 0.05$, $\alpha = 0.05$ and $\beta = 0.10$.

	$B(c,n,p_1)$		$B(c,n,p_2)$		$B(c,n,p_1) \geqslant 0.95$ and $B(c,n,p_2) \leqslant 0.10$
	$= 0.95$	$\geqslant 0.95$	$= 0.10$	$\leqslant 0.10$	
c	$n =$	$n \leqslant$	$n =$	$n \geqslant$	n
2	82.36	82	104.8	105	None
3	137.4	137	131.8	132	$132 \leqslant n \leqslant 137$
4	198.0	198	157.9	158	$157 \leqslant n \leqslant 198$

Thus, the smallest value of c for which both conditions are satisfied is $c = 3$, and all values of n between 132 and 137 will satisfy the requirements for $c = 3$.

Example 12. IQL sampling plans with decreasing producer's risk.

Suppose that a break-even quality p_0 has been fixed and that $B(c,n,p_0) = 0.5$. Let us further assume that the producer's risk for a process average of $p_1 < p_0$ is defined as a decreasing function of lot size N, for instance as α/N as discussed by HALD (1965). The plan corresponding to any lot size is then determined from the two conditions $B(c,n,p_0) = 0.5$ and $B(c,n,p_1) = 1-\alpha/N$.

To tabulate such a system of sampling plans we first find $n = n_c$ as a function of c from the first condition. This may be done from the table or with good approximation from (6) which gives $np_0 \simeq c+(2-p_0)/3$.

Because of the discreteness of c the second condition must be rewritten as

$$B(c,n_c,p_1) \geqq 1-\alpha/N > B(c-1), n_{c-1}, p_1).$$

Defining $N_c = \alpha/[1-B(c,n_c,p_1)]$ we find that the second condition is satisfied for $N_{c-1} < N \leqq N_c$.

To compute N_c it is necessary to interpolate for $B(c,n_c,p_1)$ as shown in section 2.

The following table shows an example for $\alpha = 40$, $p_1 = 1.2\,\%$ and $p_0 = 4\,\%$.

The table shows e.g. that the plan $(c,n) = (5,141)$ shall be used for $3000 < N \leqq 5400$ since $B(5, 141, 0.04) = 0.50$ and

$$1-B(5, 141, 0.012) = 0.00741 \leqq 40/N < 1-B(4, 116, 0.012) = 0.01333.$$

The table also illustrates the accuracy of linear and quadratic interpolation.

c	n_c	$100(1 - B(c,n_c,p_1))$ Linear interpol.	Quadratic interpol.	Exact	N_c Linear	Quadratic	Exact
0	17	18.483	18.547	18.554	216	216	216
1	42	9.127	9.072	9.050	438	441	442
2	67	4.738	4.698	4.695	844	851	852
3	91	2.448	2.432	2.432	1634	1640	1640
4	116	1.425	1.343	1.333	2810	2980	3000
5	141	0.772	0.735	0.741	5180	5440	5400
6	166	0.447	0.412	0.416	8950	9710	9620
7	191	0.296	0.216	0.235	13500	18500	17000

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References

A. HALD (1965): Bayesian single sampling attribute plans for discrete prior distributions. Mat. Fys. Skr. Dan. Vid. Selsk., **3**, No. 2, Copenhagen.

A. HALD (1967): The determination of single sampling attribute plans with given producer's and consumer's risk. Technometrics, 9.

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Færdig fra trykkeriet den 18. september 1967.

TABLES

Table of n satisfying the equation B(c,n,p)= 0.001

	100p						
c	0.1	1.0	2.0	5.0	7.0	10.0	15.0	20.0
0	6905	687.4	342.0	134.7	95.19	65.57	42.51	30.96
1	9230	919.3	457.6	180.6	127.8	88.15	57.33	41.90
2	11230	1119	556.9	220.0	155.8	107.6	70.12	51.35
3	13060	1302	648.1	256.2	181.6	125.5	81.91	60.08
4	14790	1475	734.3	290.5	205.9	142.5	93.07	68.36
5	16450	1640	817.0	323.4	229.3	158.8	103.8	76.31
6	18060	1801	897.1	355.2	252.0	174.5	114.2	84.03
7	19620	1957	975.0	386.2	274.0	189.9	124.4	91.55
8	21150	2110	1052	416.5	295.6	204.9	134.3	98.92
9	22660	2259	1127	446.3	316.8	219.7	144.1	106.2
10	24130	2407	1200	475.6	337.7	234.2	153.7	113.3
11	25590	2552	1273	504.5	358.2	248.5	163.1	120.4
12	27020	2696	1344	533.0	378.5	262.6	172.5	127.3
13	28440	2837	1415	561.2	398.6	276.6	181.7	134.2
14	29850	2978	1485	589.1	418.5	290.5	190.9	141.0
15	31240	3117	1555	616.7	438.1	304.2	200.0	147.8
16	32620	3255	1623	644.1	457.7	317.8	209.0	154.5
17	33990	3391	1692	671.3	477.0	331.3	217.9	161.1
18	35350	3527	1759	698.3	496.3	344.7	226.8	167.7
19	36700	3662	1827	725.1	515.4	358.0	235.6	174.3
20	38040	3796	1894	751.8	534.3	371.3	244.3	180.8
21	39370	3929	1960	778.3	553.2	384.4	253.1	187.3
22	40700	4061	2026	804.6	572.0	397.5	261.7	193.8
23	42010	4193	2092	830.8	590.7	410.5	270.3	200.2
24	43330	4324	2157	856.9	609.2	423.5	278.9	206.6
25	44630	4454	2222	882.8	627.7	436.4	287.5	213.0
26	45930	4584	2287	908.7	646.2	449.2	296.0	219.3
27	47230	4713	2352	934.4	664.5	462.0	304.5	225.6
28	48510	4842	2416	960.1	682.8	474.8	312.9	231.9
29	49800	4970	2480	985.6	701.0	487.5	321.3	238.2
30	51080	5098	2544	1012	719.1	500.1	329.7	244.4
31	52350	5226	2608	1037	737.2	512.7	338.1	250.7
32	53620	5353	2671	1062	755.2	525.3	346.4	256.9
33	54890	5479	2734	1087	773.2	537.8	354.7	263.1
34	56150	5605	2797	1112	791.1	550.3	363.0	269.2
35	57410	5731	2860	1138	808.9	562.8	371.2	275.4
36	58670	5856	2923	1163	826.7	575.2	379.5	281.5
37	59920	5982	2985	1187	844.5	587.6	387.7	287.7
38	61170	6106	3048	1212	862.2	599.9	395.9	293.8
39	62410	6231	3110	1237	879.9	612.3	404.1	299.9
40	63660	6355	3172	1262	897.5	624.6	412.2	306.0
41	64890	6479	3234	1286	915.1	636.8	420.4	312.0
42	66130	6602	3295	1311	932.6	649.1	428.5	318.1
43	67370	6726	3357	1336	950.1	661.3	436.6	324.1
44	68600	6849	3418	1360	967.6	673.5	444.7	330.2
45	69830	6971	3480	1385	985.1	685.7	452.8	336.2
46	71050	7094	3541	1409	1003	697.8	460.8	342.2
47	72280	7216	3602	1433	1020	710.0	468.9	348.2
48	73500	7338	3663	1458	1038	722.1	476.9	354.2
49	74720	7460	3724	1482	1055	734.1	484.9	360.2
50	75930	7582	3785	1506	1072	746.2	492.9	366.2

Table of n satisfying the equation $B(c,n,p) = 0.001$

	100p						
c	20.0	25.0	30.0	35.0	40.0	45.0	50.0
0	30.96	24.02	19.37	16.04	13.53	11.56	9.966
1	41.90	32.62	26.41	21.96	18.61	15.98	13.86
2	51.35	40.07	32.53	27.12	23.04	19.85	17.28
3	60.08	46.96	38.19	31.90	27.16	23.46	20.47
4	68.36	53.50	43.57	36.45	31.09	26.89	23.51
5	76.31	59.79	48.74	40.83	34.87	30.21	26.45
6	84.03	65.89	53.77	45.09	38.55	33.43	29.31
7	91.55	71.85	58.68	49.25	42.14	36.59	32.11
8	98.92	77.69	63.49	53.33	45.67	39.69	34.87
9	106.2	83.42	68.23	57.34	49.14	42.74	37.58
10	113.3	89.08	72.89	61.30	52.57	45.75	40.25
11	120.4	94.65	77.50	65.20	55.95	48.72	42.90
12	127.3	100.2	82.05	69.07	59.30	51.66	45.52
13	134.2	105.7	86.55	72.89	62.61	54.58	48.11
14	141.0	111.1	91.02	76.69	65.90	57.47	50.69
15	147.8	116.4	95.45	80.45	69.16	60.34	53.24
16	154.5	121.7	99.84	84.18	72.40	63.19	55.78
17	161.1	127.0	104.2	87.89	75.61	66.02	58.31
18	167.7	132.3	108.6	91.57	78.81	68.84	60.82
19	174.3	137.5	112.9	95.24	81.99	71.64	63.31
20	180.8	142.7	117.2	98.88	85.15	74.42	65.79
21	187.3	147.8	121.4	102.5	88.29	77.19	68.27
22	193.8	152.9	125.7	106.2	91.42	79.95	70.73
23	200.2	158.0	129.9	109.7	94.54	82.70	73.18
24	206.6	163.1	134.1	113.3	97.64	85.44	75.62
25	213.0	168.2	138.3	116.9	100.8	88.16	78.05
26	219.3	173.2	142.5	120.4	103.9	90.88	80.48
27	225.6	178.2	146.6	124.0	106.9	93.59	82.89
28	231.9	183.2	150.8	127.5	110.0	96.29	85.30
29	238.2	188.2	154.9	131.0	113.0	98.98	87.71
30	244.4	193.2	159.0	134.5	116.1	101.7	90.10
31	250.7	198.2	163.1	138.0	119.1	104.4	92.49
32	256.9	203.1	167.2	141.5	122.1	107.1	94.88
33	263.1	208.0	171.3	144.9	125.2	109.7	97.25
34	269.2	212.9	175.3	148.4	128.2	112.4	99.63
35	275.4	217.8	179.4	151.9	131.2	115.0	102.0
36	281.5	222.7	183.4	155.3	134.2	117.7	104.4
37	287.7	227.6	187.5	158.8	137.2	120.3	106.8
38	293.8	232.4	191.5	162.2	140.1	122.9	109.1
39	299.9	237.3	195.5	165.6	143.1	125.6	111.5
40	306.0	242.1	199.5	169.0	146.1	128.2	113.8
41	312.0	247.0	203.5	172.4	149.0	130.8	116.1
42	318.1	251.8	207.5	175.8	152.0	133.4	118.5
43	324.1	256.6	211.5	179.2	155.0	136.0	120.8
44	330.2	261.4	215.5	182.6	157.9	138.6	123.1
45	336.2	266.2	219.5	186.0	160.9	141.2	125.5
46	342.2	271.0	223.4	189.4	163.8	143.8	127.8
47	348.2	275.8	227.4	192.8	166.7	146.4	130.1
48	354.2	280.5	231.3	196.1	169.7	149.0	132.4
49	360.2	285.3	235.3	199.5	172.6	151.6	134.7
50	366.2	290.0	239.2	202.8	175.5	154.2	137.0

Table of n satisfying the equation B(c,n,p)= 0.005

c	100p 0.1	1.0	2.0	5.0	7.0	10.0	15.0	20.0
0	5296	527.2	262.3	103.3	73.01	50.29	32.61	23.75
1	7427	739.8	368.3	145.4	102.9	71.03	46.23	33.82
2	9271	923.8	460.1	181.9	128.8	89.04	58.09	42.59
3	10980	1094	544.9	215.6	152.8	105.8	69.08	50.74
4	12590	1256	625.4	247.6	175.6	121.6	79.54	58.50
5	14150	1411	702.9	278.4	197.6	136.9	89.62	65.99
6	15660	1562	778.2	308.4	218.9	151.7	99.42	73.27
7	17130	1709	851.6	337.6	239.7	166.2	109.0	80.39
8	18580	1853	923.7	366.3	260.1	180.4	118.4	87.38
9	20000	1995	994.5	394.5	280.2	194.4	127.7	94.26
10	21400	2135	1065	422.2	300.0	208.2	136.8	101.1
11	22780	2273	1134	449.7	319.5	221.8	145.8	107.8
12	24140	2409	1202	476.8	338.8	235.3	154.7	114.4
13	25500	2544	1269	503.7	357.9	248.6	163.6	121.0
14	26830	2678	1336	530.3	376.9	261.9	172.3	127.5
15	28160	2810	1402	556.7	395.7	275.0	181.0	134.0
16	29480	2942	1468	582.9	414.4	288.0	189.6	140.4
17	30790	3073	1533	608.9	432.9	300.9	198.2	146.8
18	32090	3203	1598	634.7	451.3	313.8	206.7	153.1
19	33380	3332	1662	660.4	469.6	326.5	215.2	159.4
20	34670	3460	1727	686.0	487.9	339.2	223.6	165.7
21	35940	3588	1790	711.4	506.0	351.9	232.0	172.0
22	37220	3715	1854	736.7	524.0	364.5	240.3	178.2
23	38480	3841	1917	761.9	542.0	377.0	248.6	184.4
24	39740	3967	1980	787.0	559.8	389.5	256.9	190.5
25	41000	4093	2042	812.0	577.6	401.9	265.1	196.7
26	42250	4217	2105	836.9	595.4	414.3	273.3	202.8
27	43490	4342	2167	861.6	613.1	426.6	281.5	208.9
28	44740	4466	2229	886.4	630.7	438.9	289.6	215.0
29	45970	4590	2291	911.0	648.2	451.1	297.8	221.0
30	47210	4713	2352	935.5	665.7	463.3	305.9	227.1
31	48440	4836	2414	960.0	683.2	475.5	314.0	233.1
32	49660	4958	2475	984.4	700.6	487.7	322.0	239.1
33	50880	5080	2536	1009	717.9	499.8	330.0	245.1
34	52100	5202	2597	1033	735.2	511.9	338.1	251.1
35	53320	5324	2657	1058	752.5	523.9	346.1	257.1
36	54530	5445	2718	1082	769.7	535.9	354.0	263.0
37	55740	5566	2778	1106	786.9	547.9	362.0	269.0
38	56950	5687	2839	1130	804.1	559.9	369.9	274.9
39	58160	5807	2899	1154	821.2	571.9	377.9	280.8
40	59360	5927	2959	1178	838.3	583.8	385.8	286.7
41	60560	6047	3019	1202	855.3	595.7	393.7	292.6
42	61760	6167	3079	1226	872.3	607.6	401.6	298.5
43	62950	6286	3138	1250	889.3	619.4	409.4	304.4
44	64140	6405	3198	1273	906.2	631.2	417.3	310.2
45	65340	6524	3257	1297	923.2	643.1	425.1	316.1
46	66520	6643	3317	1321	940.0	654.8	433.0	321.9
47	67710	6762	3376	1344	956.9	666.6	440.8	327.8
48	68900	6880	3435	1368	973.7	678.4	448.6	333.6
49	70080	6998	3494	1392	990.6	690.1	456.4	339.4
50	71260	7116	3553	1415	1008	701.8	464.1	345.2

Table of n satisfying the equation $B(c,n,p) = 0.005$

c	100p 20.0	25.0	30.0	35.0	40.0	45.0	50.0
0	23.75	18.42	14.86	12.30	10.38	8.863	7.644
1	33.82	26.35	21.36	17.78	15.08	12.97	11.26
2	42.59	33.28	27.05	22.58	19.22	16.59	14.47
3	50.74	39.72	32.35	27.07	23.09	19.98	17.47
4	58.50	45.85	37.40	31.35	26.78	23.22	20.34
5	65.99	51.78	42.29	35.49	30.36	26.36	23.13
6	73.27	57.55	47.04	39.52	33.85	29.42	25.86
7	80.39	63.19	51.70	43.47	37.27	32.43	28.53
8	87.38	68.73	56.27	47.35	40.64	35.39	31.16
9	94.26	74.19	60.78	51.18	43.95	38.30	33.76
10	101.1	79.57	65.23	54.96	47.22	41.18	36.32
11	107.8	84.89	69.63	58.69	50.46	44.04	38.86
12	114.4	90.16	73.98	62.39	53.67	46.86	41.38
13	121.0	95.38	78.30	66.06	56.86	49.67	43.88
14	127.5	100.6	82.58	69.70	60.01	52.45	46.36
15	134.0	105.7	86.82	73.31	63.15	55.21	48.83
16	140.4	110.8	91.05	76.90	66.27	57.96	51.28
17	146.8	115.9	95.24	80.47	69.36	60.69	53.72
18	153.1	120.9	99.41	84.02	72.45	63.41	56.14
19	159.4	126.0	103.6	87.55	75.51	66.11	58.55
20	165.7	130.9	107.7	91.07	78.56	68.80	60.96
21	172.0	135.9	111.8	94.57	81.60	71.49	63.35
22	178.2	140.9	115.9	98.05	84.63	74.16	65.74
23	184.4	145.8	120.0	101.6	87.65	76.82	68.11
24	190.5	150.7	124.1	105.0	90.65	79.47	70.48
25	196.7	155.6	128.1	108.5	93.65	82.11	72.85
26	202.8	160.4	132.1	111.9	96.63	84.75	75.20
27	208.9	165.3	136.2	115.3	99.61	87.38	77.55
28	215.0	170.1	140.2	118.7	102.6	90.00	79.89
29	221.0	174.9	144.2	122.1	105.6	92.61	82.23
30	227.1	179.8	148.2	125.5	108.5	95.22	84.56
31	233.1	184.6	152.1	128.9	111.5	97.82	86.88
32	239.1	189.3	156.1	132.3	114.4	100.5	89.20
33	245.1	194.1	160.0	135.7	117.4	103.1	91.52
34	251.1	198.9	164.0	139.0	120.3	105.6	93.83
35	257.1	203.6	167.9	142.4	123.2	108.2	96.14
36	263.0	208.4	171.9	145.7	126.1	110.8	98.44
37	269.0	213.1	175.8	149.1	129.0	113.4	100.8
38	274.9	217.8	179.7	152.4	131.9	115.9	103.1
39	280.8	222.5	183.6	155.8	134.8	118.5	105.4
40	286.7	227.2	187.5	159.1	137.7	121.0	107.7
41	292.6	231.9	191.4	162.4	140.6	123.6	109.9
42	298.5	236.6	195.3	165.7	143.5	126.1	112.2
43	304.4	241.3	199.2	169.0	146.4	128.7	114.5
44	310.2	245.9	203.0	172.3	149.2	131.2	116.8
45	316.1	250.6	206.9	175.6	152.1	133.8	119.0
46	321.9	255.3	210.8	178.9	155.0	136.3	121.3
47	327.8	259.9	214.6	182.2	157.8	138.8	123.6
48	333.6	264.5	218.5	185.5	160.7	141.4	125.8
49	339.4	269.2	222.3	188.8	163.5	143.9	128.1
50	345.2	273.8	226.1	192.0	166.4	146.4	130.3

Table of n satisfying the equation B(c,n,p)= 0.010

	100p							
c	0.1	1.0	2.0	5.0	7.0	10.0	15.0	20.0
0	4603	458.3	228.0	89.79	63.46	43.71	28.34	20.64
1	6636	661.1	329.1	130.0	91.98	63.52	41.36	30.27
2	8403	837.4	417.1	164.9	116.9	80.80	52.75	38.70
3	10050	1001	498.8	197.4	140.0	96.87	63.34	46.56
4	11610	1157	576.5	228.3	162.0	112.2	73.45	54.07
5	13110	1307	651.4	258.1	183.2	127.0	83.22	61.32
6	14570	1453	724.3	287.1	203.9	141.4	92.72	68.39
7	16000	1596	795.5	315.5	224.1	155.5	102.1	75.31
8	17400	1736	865.5	343.4	243.9	169.3	111.2	82.11
9	18780	1874	934.3	370.8	263.4	182.9	120.2	88.81
10	20140	2010	1003	397.8	282.7	196.3	129.1	95.43
11	21490	2144	1070	424.5	301.7	209.6	137.9	102.0
12	22820	2277	1136	451.0	320.6	222.7	146.6	108.5
13	24140	2409	1202	477.2	339.2	235.8	155.2	114.9
14	25450	2539	1267	503.2	357.8	248.7	163.8	121.3
15	26740	2669	1332	529.0	376.1	261.5	172.3	127.6
16	28030	2798	1396	554.6	394.4	274.2	180.7	133.9
17	29310	2925	1460	580.0	412.5	286.9	189.1	140.2
18	30580	3052	1523	605.3	430.5	299.4	197.4	146.4
19	31840	3179	1586	630.5	448.5	311.9	205.7	152.6
20	33100	3304	1649	655.5	466.3	324.4	214.0	158.7
21	34350	3429	1712	680.4	484.1	336.8	222.2	164.8
22	35600	3554	1774	705.2	501.7	349.1	230.4	170.9
23	36840	3678	1836	729.9	519.3	361.4	238.5	177.0
24	38070	3801	1897	754.5	536.9	373.6	246.6	183.1
25	39310	3924	1959	779.0	554.3	385.8	254.7	189.1
26	40530	4047	2020	803.4	571.7	398.0	262.8	195.1
27	41750	4169	2081	827.7	589.1	410.1	270.8	201.1
28	42970	4291	2142	852.0	606.4	422.1	278.8	207.1
29	44190	4412	2202	876.2	623.6	434.2	286.8	213.0
30	45400	4533	2263	900.3	640.8	446.2	294.8	219.0
31	46610	4654	2323	924.3	658.0	458.2	302.7	224.9
32	47810	4774	2383	948.3	675.1	470.1	310.6	230.8
33	49010	4894	2443	972.2	692.1	482.0	318.5	236.7
34	50210	5014	2503	996.1	709.1	493.9	326.4	242.6
35	51400	5133	2563	1020	726.1	505.7	334.3	248.5
36	52600	5252	2622	1044	743.1	517.6	342.1	254.4
37	53790	5371	2682	1068	760.0	529.4	350.0	260.2
38	54980	5490	2741	1091	776.8	541.2	357.8	266.0
39	56160	5608	2800	1115	793.7	552.9	365.6	271.9
40	57340	5727	2859	1139	810.5	564.7	373.4	277.7
41	58520	5845	2918	1162	827.3	576.4	381.2	283.5
42	59700	5962	2977	1186	844.0	588.1	388.9	289.3
43	60880	6080	3036	1209	860.7	599.7	396.7	295.1
44	62050	6197	3094	1233	877.4	611.4	404.4	300.9
45	63230	6314	3153	1256	894.1	623.0	412.1	306.6
46	64400	6431	3211	1279	910.7	634.7	419.9	312.4
47	65570	6548	3270	1303	927.3	646.3	427.6	318.2
48	66730	6665	3328	1326	943.9	657.8	435.3	323.9
49	67900	6781	3386	1349	960.5	669.4	442.9	329.7
50	69060	6898	3444	1372	977.0	681.0	450.6	335.4

Table of n satisfying the equation $B(c,n,p) = 0.010$

c	100p = 20.0	25.0	30.0	35.0	40.0	45.0	50.0
0	20.64	16.01	12.92	10.70	9.016	7.704	6.644
1	30.27	23.60	19.14	15.94	13.53	11.64	10.12
2	38.70	30.26	24.62	20.57	17.52	15.14	13.22
3	46.56	36.48	29.73	24.90	21.26	18.42	16.13
4	54.07	42.42	34.63	29.05	24.85	21.57	18.92
5	61.32	48.16	39.37	33.07	28.33	24.62	21.64
6	68.39	53.76	43.99	37.00	31.73	27.61	24.29
7	75.31	59.25	48.53	40.84	35.06	30.54	26.90
8	82.11	64.65	52.98	44.63	38.34	33.43	29.47
9	88.81	69.97	57.38	48.36	41.58	36.28	32.01
10	95.43	75.22	61.72	52.05	44.78	39.10	34.53
11	102.0	80.42	66.02	55.71	47.95	41.89	37.02
12	108.5	85.56	70.27	59.33	51.09	44.66	39.48
13	114.9	90.67	74.50	62.92	54.21	47.40	41.94
14	121.3	95.73	78.69	66.48	57.30	50.13	44.37
15	127.6	100.8	82.85	70.02	60.38	52.85	46.79
16	133.9	105.8	86.98	73.54	63.44	55.54	49.20
17	140.2	110.8	91.10	77.04	66.48	58.23	51.59
18	146.4	115.7	95.19	80.53	69.50	60.90	53.98
19	152.6	120.6	99.26	83.99	72.51	63.55	56.35
20	158.7	125.5	103.4	87.45	75.51	66.20	58.72
21	164.8	130.4	107.4	90.88	78.50	68.84	61.07
22	170.9	135.2	111.4	94.31	81.48	71.47	63.42
23	177.0	140.1	115.4	97.72	84.44	74.09	65.76
24	183.1	144.9	119.4	101.2	87.40	76.70	68.10
25	189.1	149.7	123.4	104.6	90.35	79.30	70.42
26	195.1	154.5	127.3	107.9	93.29	81.90	72.74
27	201.1	159.2	131.3	111.3	96.22	84.49	75.06
28	207.1	164.0	135.2	114.7	99.14	87.07	77.37
29	213.0	168.7	139.2	118.0	102.1	89.64	79.67
30	219.0	173.5	143.1	121.4	105.0	92.21	81.97
31	224.9	178.2	147.0	124.7	107.9	94.78	84.27
32	230.8	182.9	150.9	128.0	110.8	97.34	86.56
33	236.7	187.6	154.8	131.3	113.7	99.89	88.84
34	242.6	192.3	158.7	134.7	116.6	102.5	91.12
35	248.5	197.0	162.6	138.0	119.5	105.0	93.40
36	254.4	201.6	166.4	141.3	122.3	107.6	95.67
37	260.2	206.3	170.3	144.6	125.2	110.1	97.94
38	266.0	210.9	174.2	147.9	128.1	112.6	100.3
39	271.9	215.6	178.0	151.1	130.9	115.2	102.5
40	277.7	220.2	181.9	154.4	133.8	117.7	104.8
41	283.5	224.8	185.7	157.7	136.6	120.2	107.0
42	289.3	229.5	189.5	161.0	139.5	122.7	109.3
43	295.1	234.1	193.4	164.2	142.3	125.2	111.5
44	300.9	238.7	197.2	167.5	145.2	127.8	113.8
45	306.6	243.3	201.0	170.7	148.0	130.3	116.0
46	312.4	247.9	204.8	174.0	150.8	132.8	118.3
47	318.2	252.5	208.6	177.2	153.7	135.3	120.5
48	323.9	257.0	212.4	180.5	156.5	137.8	122.7
49	329.7	261.6	216.2	183.7	159.3	140.3	125.0
50	335.4	266.2	220.0	186.9	162.1	142.8	127.2

Table of n satisfying the equation $B(c,n,p) = 0.025$

c	100p 0.1	1.0	2.0	5.0	7.0	10.0	15.0	20.0
0	3688	367.1	182.6	71.92	50.84	35.02	22.70	16.54
1	5570	554.9	276.3	109.2	77.29	53.39	34.80	25.49
2	7223	719.9	358.7	141.9	100.6	69.59	45.48	33.41
3	8765	873.9	435.5	172.5	122.4	84.74	55.48	40.84
4	10240	1022	509.0	201.7	143.2	99.24	65.07	47.96
5	11670	1164	580.1	230.0	163.4	113.3	74.36	54.87
6	13060	1303	649.5	257.7	183.0	127.0	83.43	61.62
7	14420	1439	717.5	284.8	202.3	140.5	92.33	68.24
8	15760	1573	784.3	311.4	221.3	153.7	101.1	74.77
9	17090	1705	850.2	337.7	240.0	166.8	109.8	81.21
10	18390	1835	915.4	363.6	258.5	179.7	118.3	87.57
11	19680	1964	979.8	389.3	276.8	192.4	126.8	93.88
12	20960	2092	1044	414.8	295.0	205.1	135.2	100.2
13	22230	2219	1107	440.0	312.9	217.6	143.5	106.4
14	23490	2345	1170	465.0	330.8	230.1	151.7	112.5
15	24740	2470	1233	489.9	348.5	242.5	160.0	118.7
16	25980	2594	1295	514.7	366.2	254.8	168.1	124.7
17	27220	2717	1356	539.3	383.7	267.0	176.2	130.8
18	28450	2840	1418	563.7	401.1	279.2	184.3	136.8
19	29670	2962	1479	588.1	418.5	291.3	192.3	142.8
20	30890	3084	1539	612.3	435.8	303.4	200.3	148.8
21	32100	3205	1600	636.5	453.0	315.4	208.3	154.7
22	33310	3326	1660	660.5	470.1	327.4	216.3	160.7
23	34510	3446	1720	684.5	487.2	339.3	224.2	166.6
24	35710	3566	1780	708.3	504.2	351.2	232.1	172.5
25	36900	3685	1840	732.1	521.2	363.0	239.9	178.3
26	38090	3804	1899	755.9	538.1	374.8	247.8	184.2
27	39280	3923	1959	779.5	555.0	386.6	255.6	190.0
28	40470	4041	2018	803.1	571.8	398.4	263.4	195.9
29	41650	4159	2077	826.6	588.6	410.1	271.2	201.7
30	42830	4277	2135	850.1	605.3	421.8	278.9	207.5
31	44000	4394	2194	873.5	622.0	433.4	286.7	213.2
32	45170	4511	2253	896.9	638.7	445.1	294.4	219.0
33	46340	4628	2311	920.2	655.3	456.7	302.1	224.8
34	47510	4745	2369	943.5	671.9	468.3	309.8	230.5
35	48670	4861	2427	966.7	688.5	479.8	317.5	236.3
36	49840	4977	2486	989.8	705.0	491.4	325.1	242.0
37	51000	5093	2543	1013	721.5	502.9	332.8	247.7
38	52160	5209	2601	1037	738.0	514.4	340.4	253.4
39	53310	5325	2659	1060	754.4	525.9	348.1	259.1
40	54470	5440	2717	1083	770.8	537.3	355.7	264.8
41	55620	5555	2774	1106	787.2	548.8	363.3	270.5
42	56770	5670	2832	1128	803.6	560.2	370.9	276.2
43	57920	5785	2889	1151	819.9	571.6	378.5	281.8
44	59070	5900	2946	1174	836.2	583.0	386.0	287.5
45	60210	6014	3004	1197	852.5	594.4	393.6	293.1
46	61350	6129	3061	1220	868.8	605.8	401.1	298.8
47	62500	6243	3118	1243	885.0	617.1	408.7	304.4
48	63640	6357	3175	1265	901.3	628.5	416.2	310.0
49	64780	6471	3232	1288	917.5	639.8	423.7	315.7
50	65920	6584	3288	1311	933.7	651.1	431.3	321.3

Table of n satisfying the equation $B(c,n,p) = 0.025$

	100p					
c	20.0	25.0	30.0	35.0	40.0	45.0	50.0
0	16.54	12.83	10.35	8.564	7.222	6.171	5.322
1	25.49	19.89	16.15	13.47	11.44	9.858	8.583
2	33.41	26.16	21.31	17.83	15.21	13.17	11.52
3	40.84	32.04	26.16	21.94	18.77	16.29	14.29
4	47.96	37.68	30.81	25.89	22.19	19.29	16.96
5	54.87	43.16	35.34	29.73	25.52	22.22	19.57
6	61.62	48.52	39.76	33.49	28.78	25.09	22.12
7	68.24	53.78	44.11	37.19	31.98	27.91	24.64
8	74.77	58.96	48.39	40.83	35.14	30.70	27.12
9	81.21	64.07	52.62	44.43	38.26	33.45	29.58
10	87.57	69.13	56.81	47.99	41.36	36.18	32.01
11	93.88	74.14	60.96	51.52	44.42	38.88	34.42
12	100.2	79.11	65.07	55.02	47.46	41.56	36.82
13	106.4	84.04	69.15	58.50	50.49	44.23	39.20
14	112.5	88.94	73.21	61.95	53.49	46.88	41.57
15	118.7	93.81	77.24	65.39	56.47	49.52	43.92
16	124.7	98.65	81.25	68.81	59.44	52.14	46.27
17	130.8	103.5	85.25	72.21	62.40	54.75	48.60
18	136.8	108.3	89.22	75.59	65.34	57.35	50.93
19	142.8	113.1	93.17	78.96	68.28	59.94	53.24
20	148.8	117.8	97.11	82.32	71.20	62.52	55.55
21	154.7	122.6	101.1	85.67	74.11	65.09	57.85
22	160.7	127.3	105.0	89.00	77.01	67.66	60.14
23	166.6	132.0	108.9	92.33	79.91	70.21	62.43
24	172.5	136.7	112.8	95.64	82.79	72.77	64.71
25	178.3	141.4	116.7	98.95	85.67	75.31	66.99
26	184.2	146.0	120.5	102.3	88.54	77.85	69.26
27	190.0	150.7	124.4	105.6	91.40	80.38	71.53
28	195.9	155.3	128.2	108.9	94.26	82.90	73.79
29	201.7	159.9	132.1	112.1	97.11	85.42	76.04
30	207.5	164.5	135.9	115.4	99.95	87.94	78.29
31	213.2	169.2	139.7	118.7	102.8	90.45	80.54
32	219.0	173.8	143.5	121.9	105.7	92.96	82.79
33	224.8	178.3	147.3	125.2	108.5	95.46	85.03
34	230.5	182.9	151.1	128.4	111.3	97.96	87.26
35	236.3	187.5	154.9	131.6	114.1	100.5	89.50
36	242.0	192.1	158.7	134.9	117.0	103.0	91.73
37	247.7	196.6	162.5	138.1	119.8	105.5	93.95
38	253.4	201.2	166.3	141.3	122.6	108.0	96.18
39	259.1	205.7	170.0	144.5	125.4	110.4	98.40
40	264.8	210.2	173.8	147.8	128.2	112.9	100.7
41	270.5	214.8	177.6	151.0	131.0	115.4	102.9
42	276.2	219.3	181.3	154.2	133.8	117.9	105.1
43	281.8	223.8	185.1	157.4	136.6	120.3	107.3
44	287.5	228.3	188.8	160.6	139.3	122.8	109.5
45	293.1	232.8	192.6	163.8	142.1	125.3	111.7
46	298.8	237.3	196.3	167.0	144.9	127.7	113.9
47	304.4	241.8	200.0	170.1	147.7	130.2	116.1
48	310.0	246.3	203.8	173.3	150.5	132.6	118.3
49	315.7	250.8	207.5	176.5	153.2	135.1	120.5
50	321.3	255.3	211.2	179.7	156.0	137.5	122.7

Table of n satisfying the equation B(c,n,p)= 0.050

c	100p 0.1	1.0	2.0	5.0	7.0	10.0	15.0	20.0
0	2995	298.1	148.3	58.41	41.29	28.44	18.44	13.43
1	4742	472.6	235.4	92.99	65.88	45.54	29.71	21.78
2	6294	627.5	312.7	123.8	87.77	60.77	39.77	29.25
3	7752	773.0	385.3	152.7	108.4	75.12	49.25	36.30
4	9151	912.8	455.1	180.5	128.2	88.91	58.37	43.09
5	10520	1049	522.9	207.5	147.4	102.4	67.25	49.70
6	11840	1182	589.2	233.9	166.3	115.5	75.94	56.17
7	13150	1312	654.4	259.9	184.8	128.4	84.49	62.54
8	14440	1441	718.6	285.5	203.0	141.1	92.91	68.82
9	15710	1568	781.9	310.8	221.0	153.7	101.3	75.03
10	16960	1693	844.7	335.8	238.8	166.1	109.5	81.18
11	18210	1818	906.8	360.6	256.5	178.4	117.7	87.28
12	19440	1941	968.4	385.1	274.0	190.7	125.8	93.33
13	20670	2064	1030	409.5	291.4	202.8	133.9	99.34
14	21890	2185	1091	433.8	308.7	214.9	141.9	105.4
15	23100	2306	1151	457.9	325.9	226.9	149.8	111.3
16	24300	2426	1211	481.9	343.0	238.8	157.8	117.2
17	25500	2546	1271	505.7	360.0	250.7	165.7	123.1
18	26690	2665	1331	529.5	376.9	262.5	173.5	129.0
19	27880	2784	1390	553.1	393.8	274.3	181.3	134.8
20	29060	2902	1449	576.7	410.6	286.0	189.1	140.6
21	30240	3020	1508	600.2	427.4	297.7	196.9	146.4
22	31420	3137	1567	623.6	444.1	309.4	204.6	152.2
23	32590	3254	1625	646.9	460.7	321.0	212.3	158.0
24	33750	3371	1683	670.2	477.3	332.6	220.0	163.7
25	34920	3487	1741	693.4	493.8	344.1	227.7	169.4
26	36080	3603	1799	716.5	510.3	355.7	235.3	175.2
27	37230	3719	1857	739.6	526.8	367.2	243.0	180.9
28	38390	3834	1915	762.6	543.2	378.6	250.6	186.6
29	39540	3949	1972	785.5	559.6	390.1	258.2	192.2
30	40690	4064	2030	808.5	575.9	401.5	265.8	197.9
31	41840	4179	2087	831.3	592.2	412.9	273.4	203.6
32	42980	4293	2144	854.1	608.5	424.3	280.9	209.2
33	44120	4407	2201	876.9	624.8	435.6	288.5	214.8
34	45260	4521	2258	899.7	641.0	446.9	296.0	220.5
35	46400	4635	2315	922.4	657.2	458.3	303.5	226.1
36	47540	4749	2372	945.0	673.3	469.6	311.0	231.7
37	48670	4862	2428	967.7	689.5	480.8	318.5	237.3
38	49810	4975	2485	990.2	705.6	492.1	326.0	242.9
39	50940	5088	2541	1013	721.7	503.3	333.5	248.5
40	52070	5201	2598	1036	737.8	514.6	340.9	254.1
41	53200	5314	2654	1058	753.8	525.8	348.4	259.6
42	54320	5427	2711	1081	769.8	537.0	355.8	265.2
43	55450	5539	2767	1103	785.9	548.2	363.3	270.8
44	56570	5651	2823	1126	801.8	559.3	370.7	276.3
45	57690	5764	2879	1148	817.8	570.5	378.1	281.9
46	58810	5876	2935	1170	833.8	581.7	385.5	287.4
47	59930	5988	2991	1193	849.7	592.8	392.9	292.9
48	61050	6099	3047	1215	865.6	603.9	400.3	298.5
49	62170	6211	3102	1237	881.5	615.0	407.7	304.0
50	63290	6323	3158	1260	897.4	626.1	415.1	309.5

Table of n satisfying the equation $B(c,n,p) = 0.050$

c	100p = 20.0	25.0	30.0	35.0	40.0	45.0	50.0
0	13.43	10.42	8.400	6.955	5.865	5.011	4.322
1	21.78	17.01	13.83	11.55	9.822	8.476	7.391
2	29.25	22.93	18.70	15.68	13.40	11.62	10.18
3	36.30	28.52	23.32	19.59	16.79	14.60	12.83
4	43.09	33.90	27.77	23.37	20.06	17.48	15.40
5	49.70	39.15	32.10	27.06	23.26	20.30	17.91
6	56.17	44.29	36.36	30.68	26.40	23.06	20.38
7	62.54	49.35	40.54	34.24	29.49	25.79	22.81
8	68.82	54.34	44.68	37.76	32.55	28.49	25.22
9	75.03	59.28	48.76	41.24	35.57	31.15	27.60
10	81.18	64.17	52.81	44.69	38.57	33.80	29.97
11	87.28	69.02	56.83	48.11	41.55	36.43	32.31
12	93.33	73.84	60.82	51.51	44.50	39.04	34.65
13	99.34	78.62	64.79	54.89	47.44	41.63	36.97
14	105.4	83.37	68.73	58.25	50.36	44.22	39.28
15	111.3	88.10	72.65	61.59	53.27	46.78	41.57
16	117.2	92.81	76.55	64.92	56.17	49.34	43.86
17	123.1	97.50	80.44	68.23	59.05	51.89	46.14
18	129.0	102.2	84.31	71.53	61.92	54.43	48.42
19	134.8	106.9	88.16	74.82	64.79	56.96	50.68
20	140.6	111.5	92.01	78.10	67.64	59.49	52.94
21	146.4	116.1	95.84	81.37	70.49	62.00	55.19
22	152.2	120.7	99.66	84.62	73.33	64.51	57.44
23	158.0	125.3	103.5	87.87	76.16	67.02	59.68
24	163.7	129.9	107.3	91.12	78.98	69.52	61.92
25	169.4	134.5	111.1	94.35	81.80	72.01	64.15
26	175.2	139.0	114.9	97.58	84.61	74.49	66.38
27	180.9	143.6	118.7	100.8	87.41	76.98	68.60
28	186.6	148.1	122.4	104.1	90.21	79.45	70.82
29	192.2	152.6	126.2	107.3	93.01	81.93	73.03
30	197.9	157.1	129.9	110.5	95.80	84.40	75.25
31	203.6	161.6	133.7	113.7	98.58	86.86	77.45
32	209.2	166.1	137.4	116.9	101.4	89.32	79.66
33	214.8	170.6	141.1	120.0	104.2	91.78	81.86
34	220.5	175.1	144.9	123.2	107.0	94.23	84.06
35	226.1	179.6	148.6	126.4	109.7	96.68	86.26
36	231.7	184.1	152.3	129.6	112.5	99.13	88.45
37	237.3	188.5	156.0	132.7	115.3	101.6	90.64
38	242.9	193.0	159.7	135.9	118.0	104.1	92.83
39	248.5	197.5	163.4	139.1	120.8	106.5	95.01
40	254.1	201.9	167.1	142.2	123.5	108.9	97.20
41	259.6	206.4	170.8	145.4	126.3	111.4	99.38
42	265.2	210.8	174.5	148.5	129.0	113.8	101.6
43	270.8	215.2	178.2	151.7	131.7	116.2	103.8
44	276.3	219.7	181.8	154.8	134.5	118.7	106.0
45	281.9	224.1	185.5	157.9	137.2	121.1	108.1
46	287.4	228.5	189.2	161.1	140.0	123.5	110.3
47	292.9	232.9	192.9	164.2	142.7	125.9	112.5
48	298.5	237.3	196.5	167.3	145.4	128.3	114.6
49	304.0	241.7	200.2	170.5	148.1	130.8	116.8
50	309.5	246.1	203.8	173.6	150.9	133.2	119.0

Table of n satisfying the equation B(c,n,p)= 0.100

c	100p 0.1	1.0	2.0	5.0	7.0	10.0	15.0	20.0
0	2302	229.2	114.0	44.90	31.73	21.86	14.17	10.32
1	3889	387.6	193.1	76.34	54.11	37.43	24.45	17.95
2	5321	530.6	264.5	104.8	74.36	51.54	33.78	24.89
3	6679	666.3	332.2	131.8	93.58	64.94	42.65	31.49
4	7992	797.4	397.7	157.9	112.2	77.90	51.24	37.89
5	9273	925.4	461.6	183.4	130.4	90.57	59.63	44.15
6	10530	1051	524.4	208.4	148.2	103.1	67.88	50.30
7	11770	1175	586.2	233.1	165.8	115.3	76.02	56.37
8	13000	1297	647.3	257.4	183.2	127.4	84.06	62.37
9	14210	1418	707.7	281.5	200.4	139.5	92.02	68.32
10	15410	1538	767.7	305.5	217.4	151.4	99.92	74.21
11	16600	1658	827.1	329.2	234.3	163.2	107.8	80.07
12	17780	1776	886.2	352.8	251.1	174.9	115.6	85.89
13	18960	1893	945.0	376.2	267.9	186.6	123.4	91.68
14	20130	2010	1004	399.5	284.5	198.2	131.1	97.44
15	21290	2127	1062	422.7	301.0	209.8	138.7	103.2
16	22450	2242	1120	445.8	317.5	221.3	146.4	108.9
17	23610	2358	1177	468.8	333.9	232.7	154.0	114.6
18	24760	2473	1235	491.8	350.3	244.2	161.6	120.3
19	25900	2587	1292	514.6	366.6	255.5	169.2	125.9
20	27050	2701	1349	537.4	382.8	266.9	176.7	131.6
21	28190	2815	1406	560.1	399.0	278.2	184.2	137.2
22	29320	2929	1463	582.8	415.2	289.5	191.7	142.8
23	30450	3042	1519	605.3	431.3	300.8	199.2	148.4
24	31580	3155	1576	627.9	447.4	312.0	206.7	154.0
25	32710	3268	1632	650.4	463.4	323.2	214.1	159.6
26	33840	3380	1688	672.8	479.4	334.4	221.6	165.1
27	34960	3492	1744	695.2	495.4	345.6	229.0	170.7
28	36080	3604	1800	717.6	511.4	356.7	236.4	176.2
29	37200	3716	1856	739.9	527.3	367.8	243.8	181.7
30	38320	3828	1912	762.1	543.2	378.9	251.2	187.3
31	39430	3939	1968	784.4	559.1	390.0	258.6	192.8
32	40540	4050	2023	806.6	574.9	401.1	265.9	198.3
33	41650	4162	2079	828.8	590.7	412.2	273.3	203.8
34	42760	4272	2134	850.9	606.5	423.2	280.6	209.3
35	43870	4383	2190	873.0	622.3	434.2	287.9	214.8
36	44980	4494	2245	895.1	638.0	445.2	295.3	220.2
37	46080	4604	2300	917.1	653.8	456.2	302.6	225.7
38	47190	4715	2355	939.1	669.5	467.2	309.9	231.2
39	48290	4825	2410	961.1	685.2	478.2	317.2	236.6
40	49390	4935	2465	983.1	700.9	489.1	324.5	242.1
41	50490	5045	2520	1006	716.5	500.1	331.7	247.5
42	51590	5155	2575	1027	732.2	511.0	339.0	253.0
43	52690	5264	2630	1049	747.8	522.0	346.3	258.4
44	53780	5374	2685	1071	763.4	532.9	353.5	263.8
45	54880	5483	2739	1093	779.0	543.8	360.8	269.3
46	55970	5593	2794	1115	794.6	554.7	368.0	274.7
47	57070	5702	2849	1137	810.2	565.6	375.3	280.1
48	58160	5811	2903	1159	825.7	576.4	382.5	285.5
49	59250	5920	2958	1180	841.3	587.3	389.7	290.9
50	60340	6029	3012	1202	856.8	598.2	397.0	296.3

Table of n satisfying the equation B(c,n,p)= 0.100

	100p						
c	20.0	25.0	30.0	35.0	40.0	45.0	50.0
0	10.32	8.004	6.456	5.346	4.508	3.852	3.322
1	17.95	14.05	11.44	9.562	8.153	7.051	6.163
2	24.89	19.55	15.98	13.42	11.50	9.990	8.779
3	31.49	24.79	20.31	17.11	14.69	12.81	11.29
4	37.89	29.88	24.52	20.69	17.80	15.55	13.74
5	44.15	34.85	28.64	24.19	20.85	18.24	16.14
6	50.30	39.74	32.69	27.64	23.85	20.88	18.50
7	56.37	44.57	36.69	31.05	26.81	23.50	20.84
8	62.37	49.34	40.65	34.42	29.74	26.09	23.16
9	68.32	54.08	44.57	37.77	32.65	28.66	25.46
10	74.21	58.77	48.46	41.09	35.54	31.22	27.74
11	80.07	63.44	52.33	44.39	38.41	33.75	30.01
12	85.89	68.07	56.18	47.67	41.27	36.28	32.27
13	91.68	72.68	60.00	50.93	44.11	38.79	34.52
14	97.44	77.27	63.81	54.18	46.94	41.30	36.76
15	103.2	81.84	67.60	57.42	49.76	43.79	39.00
16	108.9	86.39	71.38	60.64	52.57	46.27	41.22
17	114.6	90.93	75.14	63.85	55.37	48.75	43.44
18	120.3	95.45	78.90	67.06	58.16	51.22	45.65
19	125.9	99.96	82.64	70.25	60.94	53.68	47.86
20	131.6	104.5	86.37	73.44	63.72	56.14	50.06
21	137.2	109.0	90.09	76.61	66.49	58.59	52.26
22	142.8	113.4	93.80	79.78	69.25	61.04	54.45
23	148.4	117.9	97.51	82.95	72.01	63.48	56.64
24	154.0	122.4	101.2	86.10	74.76	65.92	58.83
25	159.6	126.8	104.9	89.26	77.51	68.35	61.01
26	165.1	131.2	108.6	92.40	80.25	70.78	63.18
27	170.7	135.7	112.3	95.54	82.99	73.21	65.36
28	176.2	140.1	116.0	98.68	85.72	75.63	67.53
29	181.7	144.5	119.6	101.9	88.45	78.04	69.70
30	187.3	148.9	123.3	105.0	91.18	80.46	71.86
31	192.8	153.3	126.9	108.1	93.90	82.87	74.02
32	198.3	157.7	130.6	111.2	96.62	85.28	76.18
33	203.8	162.1	134.2	114.3	99.33	87.68	78.34
34	209.3	166.4	137.9	117.4	102.1	90.09	80.50
35	214.8	170.8	141.5	120.5	104.8	92.49	82.65
36	220.2	175.2	145.1	123.6	107.5	94.88	84.80
37	225.7	179.6	148.8	126.7	110.2	97.28	86.95
38	231.2	183.9	152.4	129.8	112.9	99.67	89.09
39	236.6	188.3	156.0	132.9	115.6	102.1	91.24
40	242.1	192.6	159.6	136.0	118.3	104.5	93.38
41	247.5	197.0	163.2	139.1	121.0	106.9	95.52
42	253.0	201.3	166.8	142.2	123.7	109.3	97.66
43	258.4	205.6	170.4	145.3	126.4	111.7	99.80
44	263.8	210.0	174.0	148.4	129.1	114.0	102.0
45	269.3	214.3	177.6	151.4	131.8	116.4	104.1
46	274.7	218.6	181.2	154.5	134.4	118.8	106.3
47	280.1	223.0	184.8	157.6	137.1	121.2	108.4
48	285.5	227.3	188.4	160.7	139.8	123.5	110.5
49	290.9	231.6	192.0	163.7	142.5	125.9	112.6
50	296.3	235.9	195.6	166.8	145.1	128.3	114.8

Table of n satisfying the equation $B(c,n,p) = 0.200$

	100p						
c	0.1	1.0	2.0	5.0	7.0	10.0	15.0	20.0
0	1609	160.2	79.67	31.38	22.18	15.28	9.904	7.213
1	2994	298.5	148.8	58.89	41.77	28.93	18.94	13.94
2	4278	426.8	212.9	84.44	59.98	41.64	27.36	20.22
3	5514	550.3	274.5	109.1	77.52	53.87	35.48	26.27
4	6720	670.8	334.7	133.1	94.64	65.83	43.41	32.19
5	7905	789.2	393.9	156.7	111.5	77.58	51.22	38.02
6	9074	906.0	452.3	180.0	128.1	89.19	58.92	43.78
7	10240	1022	510.1	203.1	144.6	100.7	66.56	49.48
8	11380	1137	567.3	225.9	160.9	112.1	74.13	55.14
9	12520	1251	624.2	248.6	177.1	123.4	81.65	60.76
10	13650	1364	680.8	271.2	193.2	134.7	89.13	66.35
11	14780	1476	737.0	293.7	209.2	145.9	96.57	71.92
12	15900	1588	793.0	316.0	225.2	157.0	104.0	77.46
13	17020	1700	848.7	338.3	241.1	168.1	111.4	82.98
14	18130	1811	904.2	360.5	256.9	179.2	118.8	88.48
15	19240	1922	959.6	382.6	272.7	190.2	126.1	93.96
16	20340	2032	1015	404.6	288.4	201.2	133.4	99.43
17	21440	2142	1070	426.6	304.1	212.2	140.7	104.9
18	22540	2252	1125	448.5	319.7	223.1	148.0	110.4
19	23640	2362	1180	470.4	335.3	234.0	155.2	115.8
20	24730	2471	1235	492.2	350.9	244.9	162.5	121.2
21	25820	2580	1289	514.0	366.5	255.8	169.7	126.6
22	26910	2689	1343	535.7	382.0	266.6	176.9	132.0
23	28000	2798	1398	557.5	397.5	277.5	184.1	137.4
24	29080	2906	1452	579.1	412.9	288.3	191.3	142.8
25	30170	3014	1506	600.8	428.4	299.1	198.5	148.2
26	31250	3123	1560	622.4	443.8	309.8	205.7	153.5
27	32330	3231	1614	643.9	459.2	320.6	212.8	158.9
28	33410	3339	1668	665.5	474.6	331.4	220.0	164.3
29	34490	3446	1722	687.0	489.9	342.1	227.1	169.6
30	35560	3554	1776	708.5	505.3	352.8	234.3	175.0
31	36640	3661	1830	730.0	520.6	363.5	241.4	180.3
32	37710	3769	1883	751.4	535.9	374.3	248.5	185.6
33	38790	3876	1937	772.8	551.2	384.9	255.6	190.9
34	39860	3983	1990	794.2	566.5	395.6	262.7	196.3
35	40930	4090	2044	815.6	581.7	406.3	269.8	201.6
36	42000	4197	2097	837.0	597.0	417.0	276.9	206.9
37	43070	4304	2151	858.3	612.2	427.6	284.0	212.2
38	44140	4411	2204	879.7	627.4	438.3	291.1	217.5
39	45200	4518	2258	901.0	642.7	448.9	298.2	222.8
40	46270	4624	2311	922.3	657.9	459.5	305.3	228.1
41	47340	4731	2364	943.5	673.0	470.2	312.3	233.4
42	48400	4837	2417	964.8	688.2	480.8	319.4	238.7
43	49470	4944	2470	986.1	703.4	491.4	326.5	244.0
44	50530	5050	2524	1008	718.5	502.0	333.5	249.3
45	51590	5156	2577	1029	733.7	512.6	340.6	254.5
46	52650	5262	2630	1050	748.8	523.2	347.6	259.8
47	53710	5368	2683	1071	764.0	533.7	354.7	265.1
48	54770	5474	2736	1093	779.1	544.3	361.7	270.4
49	55830	5580	2789	1114	794.2	554.9	368.7	275.6
50	56890	5686	2842	1135	809.3	565.5	375.8	280.9

Table of n satisfying the equation $B(c,n,p) = 0.200$

c	100p 20.0	25.0	30.0	35.0	40.0	45.0	50.0
0	7.213	5.595	4.513	3.737	3.151	2.693	2.322
1	13.94	10.94	8.925	7.487	6.405	5.558	4.878
2	20.22	15.93	13.06	11.01	9.459	8.254	7.285
3	26.27	20.74	17.05	14.41	12.42	10.87	9.621
4	32.19	25.46	20.96	17.74	15.32	13.43	11.92
5	38.02	30.10	24.81	21.03	18.18	15.96	14.18
6	43.78	34.69	28.62	24.27	21.01	18.46	16.42
7	49.48	39.23	32.39	27.49	23.82	20.95	18.64
8	55.14	43.74	36.13	30.69	26.60	23.41	20.85
9	60.76	48.22	39.85	33.87	29.37	25.86	23.05
10	66.35	52.68	43.56	37.03	32.13	28.30	25.24
11	71.92	57.12	47.24	40.18	34.87	30.73	27.42
12	77.46	61.54	50.91	43.31	37.60	33.16	29.59
13	82.98	65.94	54.57	46.44	40.33	35.57	31.75
14	88.48	70.32	58.21	49.55	43.05	37.98	33.91
15	93.96	74.70	61.85	52.66	45.76	40.38	36.06
16	99.43	79.06	65.47	55.76	48.46	42.77	38.21
17	104.9	83.41	69.09	58.85	51.15	45.16	40.35
18	110.4	87.76	72.70	61.93	53.85	47.55	42.49
19	115.8	92.09	76.30	65.01	56.53	49.93	44.63
20	121.2	96.41	79.89	68.08	59.21	52.30	46.76
21	126.6	100.8	83.48	71.15	61.89	54.68	48.89
22	132.0	105.1	87.07	74.21	64.56	57.05	51.02
23	137.4	109.4	90.64	77.27	67.23	59.41	53.14
24	142.8	113.7	94.22	80.33	69.90	61.78	55.26
25	148.2	118.0	97.78	83.38	72.56	64.14	57.38
26	153.5	122.3	101.4	86.43	75.22	66.49	59.50
27	158.9	126.5	104.9	89.47	77.88	68.85	61.61
28	164.3	130.8	108.5	92.51	80.53	71.20	63.73
29	169.6	135.1	112.1	95.54	83.18	73.55	65.84
30	175.0	139.4	115.6	98.58	85.83	75.90	67.94
31	180.3	143.6	119.1	101.7	88.48	78.25	70.05
32	185.6	147.9	122.7	104.7	91.12	80.59	72.16
33	190.9	152.1	126.2	107.7	93.76	82.94	74.26
34	196.3	156.4	129.8	110.7	96.40	85.28	76.36
35	201.6	160.6	133.3	113.8	99.04	87.62	78.46
36	206.9	164.9	136.8	116.8	101.7	89.95	80.56
37	212.2	169.1	140.3	119.8	104.4	92.29	82.66
38	217.5	173.3	143.9	122.8	107.0	94.62	84.76
39	222.8	177.6	147.4	125.8	109.6	96.96	86.85
40	228.1	181.8	150.9	128.8	112.2	99.29	88.94
41	233.4	186.0	154.4	131.8	114.9	101.7	91.04
42	238.7	190.2	157.9	134.8	117.5	104.0	93.13
43	244.0	194.5	161.4	137.8	120.1	106.3	95.22
44	249.3	198.7	165.0	140.8	122.7	108.6	97.31
45	254.5	202.9	168.5	143.8	125.4	111.0	99.40
46	259.8	207.1	172.0	146.8	128.0	113.3	101.5
47	265.1	211.3	175.5	149.8	130.6	115.6	103.6
48	270.4	215.5	179.0	152.8	133.2	117.9	105.7
49	275.6	219.8	182.5	155.8	135.8	120.3	107.8
50	280.9	224.0	186.0	158.8	138.5	122.6	109.9

Table of n satisfying the equation $B(c,n,p) = 0.500$

	100p						
c	0.1	1.0	2.0	5.0	7.0	10.0	15.0	20.0
0	692.8	68.97	34.31	13.51	9.551	6.579	4.265	3.106
1	1678	167.5	83.58	33.23	23.64	16.44	10.85	8.047
2	2674	267.1	133.4	53.14	37.86	26.40	17.49	13.03
3	3672	366.9	183.3	73.10	52.12	36.38	24.14	18.02
4	4671	466.8	233.2	93.08	66.39	46.37	30.80	23.02
5	5670	566.7	283.2	113.1	80.67	56.37	37.46	28.01
6	6669	666.6	333.1	133.1	94.95	66.36	44.13	33.01
7	7669	766.6	383.1	153.1	109.2	76.36	50.79	38.01
8	8669	866.6	433.1	173.0	123.5	86.35	57.46	43.01
9	9668	966.5	483.1	193.0	137.8	96.35	64.12	48.01
10	10670	1067	533.1	213.0	152.1	106.4	70.79	53.01
11	11670	1167	583.1	233.0	166.4	116.3	77.45	58.01
12	12670	1266	633.1	253.0	180.6	126.3	84.12	63.01
13	13670	1366	683.1	273.0	194.9	136.3	90.79	68.01
14	14670	1466	733.1	293.0	209.2	146.3	97.45	73.01
15	15670	1566	783.1	313.0	223.5	156.3	104.1	78.01
16	16670	1666	833.1	333.0	237.8	166.3	110.8	83.00
17	17670	1766	883.1	353.0	252.1	176.3	117.5	88.00
18	18670	1866	933.1	373.0	266.3	186.3	124.1	93.00
19	19670	1966	983.0	393.0	280.6	196.3	130.8	98.00
20	20670	2066	1033	413.0	294.9	206.3	137.5	103.0
21	21670	2166	1083	433.0	309.2	216.3	144.1	108.0
22	22670	2266	1133	453.0	323.5	226.3	150.8	113.0
23	23670	2366	1183	473.0	337.8	236.3	157.4	118.0
24	24670	2466	1233	493.0	352.1	246.3	164.1	123.0
25	25670	2566	1283	513.0	366.3	256.3	170.8	128.0
26	26670	2666	1333	533.0	380.6	266.3	177.4	133.0
27	27670	2766	1383	553.0	394.9	276.3	184.1	138.0
28	28670	2866	1433	573.0	409.2	286.3	190.8	143.0
29	29670	2966	1483	593.0	423.5	296.3	197.4	148.0
30	30670	3066	1533	613.0	437.8	306.3	204.1	153.0
31	31670	3166	1583	633.0	452.1	316.3	210.8	158.0
32	32670	3266	1633	653.0	466.3	326.3	217.4	163.0
33	33670	3366	1683	673.0	480.6	336.3	224.1	168.0
34	34670	3466	1733	693.0	494.9	346.3	230.8	173.0
35	35670	3566	1783	713.0	509.2	356.3	237.4	178.0
36	36670	3666	1833	733.0	523.5	366.3	244.1	183.0
37	37670	3766	1883	753.0	537.8	376.3	250.8	188.0
38	38670	3866	1933	773.0	552.1	386.3	257.4	193.0
39	39670	3966	1983	793.0	566.3	396.3	264.1	198.0
40	40670	4066	2033	813.0	580.6	406.3	270.8	203.0
41	41670	4166	2083	833.0	594.9	416.3	277.4	208.0
42	42670	4266	2133	853.0	609.2	426.3	284.1	213.0
43	43670	4366	2183	873.0	623.5	436.3	290.8	218.0
44	44670	4466	2233	893.0	637.8	446.3	297.4	223.0
45	45670	4566	2283	913.0	652.1	456.3	304.1	228.0
46	46670	4666	2333	933.0	666.3	466.3	310.8	233.0
47	47670	4766	2383	953.0	680.6	476.3	317.4	238.0
48	48670	4866	2433	973.0	694.9	486.3	324.1	243.0
49	49670	4966	2483	993.0	709.2	496.3	330.8	248.0
50	50670	5066	2533	1013	723.5	506.3	337.4	253.0

Table of n satisfying the equation B(c,n,p)= 0.500

c	100p 20.0	25.0	30.0	35.0	40.0	45.0	50.0
0	3.106	2.409	1.943	1.609	1.357	1.159	1.000
1	8.047	6.367	5.247	4.446	3.844	3.376	3.000
2	13.03	10.35	8.571	7.297	6.340	5.596	5.000
3	18.02	14.35	11.90	10.15	8.838	7.817	7.000
4	23.02	18.35	15.23	13.01	11.34	10.04	9.000
5	28.01	22.34	18.56	15.86	13.84	12.26	11.00
6	33.01	26.34	21.90	18.72	16.34	14.48	13.00
7	38.01	30.34	25.23	21.58	18.84	16.70	15.00
8	43.01	34.34	28.56	24.43	21.34	18.93	17.00
9	48.01	38.34	31.89	27.29	23.84	21.15	19.00
10	53.01	42.34	35.23	30.15	26.34	23.37	21.00
11	58.01	46.34	38.56	33.00	28.83	25.59	23.00
12	63.01	50.34	41.89	35.86	31.33	27.82	25.00
13	68.01	54.34	45.23	38.72	33.83	30.04	27.00
14	73.01	58.34	48.56	41.57	36.33	32.26	29.00
15	78.01	62.34	51.89	44.43	38.83	34.48	31.00
16	83.00	66.34	55.22	47.29	41.33	36.70	33.00
17	88.00	70.34	58.56	50.14	43.83	38.93	35.00
18	93.00	74.34	61.89	53.00	46.33	41.15	37.00
19	98.00	78.34	65.22	55.86	48.83	43.37	39.00
20	103.0	82.34	68.56	58.72	51.33	45.59	41.00
21	108.0	86.34	71.89	61.57	53.83	47.82	43.00
22	113.0	90.34	75.22	64.43	56.33	50.04	45.00
23	118.0	94.34	78.56	67.29	58.83	52.26	47.00
24	123.0	98.34	81.89	70.14	61.33	54.48	49.00
25	128.0	102.3	85.22	73.00	63.83	56.70	51.00
26	133.0	106.3	88.56	75.86	66.33	58.93	53.00
27	138.0	110.3	91.89	78.72	68.83	61.15	55.00
28	143.0	114.3	95.22	81.57	71.33	63.37	57.00
29	148.0	118.3	98.56	84.43	73.83	65.59	59.00
30	153.0	122.3	101.9	87.29	76.33	67.82	61.00
31	158.0	126.3	105.2	90.14	78.83	70.04	63.00
32	163.0	130.3	108.6	93.00	81.33	72.26	65.00
33	168.0	134.3	111.9	95.86	83.83	74.48	67.00
34	173.0	138.3	115.2	98.72	86.33	76.70	69.00
35	178.0	142.3	118.6	101.6	88.83	78.93	71.00
36	183.0	146.3	121.9	104.4	91.33	81.15	73.00
37	188.0	144.3	125.2	107.3	93.83	83.37	75.00
38	193.0	154.3	128.6	110.1	96.33	85.59	77.00
39	198.0	158.3	131.9	113.0	98.83	87.82	79.00
40	203.0	162.3	135.2	115.9	101.3	90.04	81.00
41	208.0	166.3	138.6	118.7	103.8	92.26	83.00
42	213.0	170.3	141.9	121.6	106.3	94.48	85.00
43	218.0	174.3	145.2	124.4	108.8	96.70	87.00
44	223.0	178.3	148.6	127.3	111.3	98.93	89.00
45	228.0	182.3	151.9	130.1	113.8	101.1	91.00
46	233.0	186.3	155.2	133.0	116.3	103.4	93.00
47	238.0	190.3	158.6	135.9	118.8	105.6	95.00
48	243.0	194.3	161.9	138.7	121.3	107.8	97.00
49	248.0	198.3	165.2	141.6	123.8	110.0	99.00
50	253.0	202.3	168.6	144.4	126.3	112.3	101.0

Table of n satisfying the equation $B(c,n,p) = 0.800$

c	100p = 0.1	1.0	2.0	5.0	7.0	10.0	15.0	20.0
0	223.0	22.20	11.04	4.350	3.074	2.117	1.373	1.000
1	824.4	82.52	41.30	16.58	11.87	8.344	5.603	4.237
2	1535	153.7	76.98	30.94	22.17	15.60	10.49	7.946
3	2297	230.0	115.1	46.29	33.17	23.34	15.69	11.88
4	3089	309.4	154.9	62.25	44.60	31.37	21.08	15.95
5	3904	390.9	195.7	78.63	56.33	39.61	26.61	20.12
6	4734	474.0	237.3	95.32	68.27	47.99	32.23	24.36
7	5576	558.3	279.5	112.2	80.39	56.50	37.93	28.65
8	6429	643.6	322.2	129.3	92.64	65.10	43.69	32.99
9	7290	729.7	365.3	146.6	105.0	73.78	49.50	37.37
10	8157	816.6	408.7	164.0	117.4	82.52	55.35	41.78
11	9031	904.0	452.5	181.6	130.0	91.33	61.24	46.22
12	9911	992.0	496.5	199.2	142.6	100.1	67.17	50.68
13	10790	1080	540.8	217.0	155.3	109.0	73.12	55.16
14	11680	1169	585.2	234.8	168.0	118.0	79.10	59.66
15	12570	1258	629.9	252.7	180.8	126.9	85.10	64.17
16	13470	1348	674.7	270.6	193.7	136.0	91.13	68.70
17	14360	1438	719.6	288.6	206.5	145.0	97.17	73.25
18	15270	1528	764.8	306.7	219.5	154.1	103.2	77.81
19	16170	1618	810.0	324.8	232.4	163.1	109.3	82.38
20	17080	1709	855.4	343.0	245.4	172.2	115.3	86.96
21	17980	1800	900.8	361.2	258.5	181.4	121.5	91.55
22	18890	1891	946.4	379.5	271.5	190.5	127.6	96.15
23	19810	1982	992.1	397.8	284.6	199.7	133.7	100.7
24	20720	2074	1037	416.1	297.7	208.9	139.8	105.3
25	21640	2165	1083	434.5	310.8	218.1	146.0	110.0
26	22560	2257	1129	452.9	324.0	227.3	152.1	114.6
27	23470	2349	1175	471.3	337.1	236.5	158.3	119.2
28	24400	2441	1221	489.7	350.3	245.8	164.5	123.9
29	25320	2533	1267	508.2	363.6	255.1	170.7	128.5
30	26240	2626	1314	526.7	376.8	264.3	176.9	133.2
31	27170	2718	1360	545.3	390.0	273.6	183.1	137.8
32	28090	2811	1406	563.8	403.3	282.9	189.3	142.5
33	29020	2904	1453	582.4	416.6	292.2	195.5	147.2
34	29950	2996	1499	601.0	429.9	301.5	201.7	151.9
35	30870	3089	1545	619.6	443.2	310.9	208.0	156.5
36	31810	3182	1592	638.2	456.5	320.2	214.2	161.2
37	32740	3276	1639	656.9	469.8	329.5	220.4	165.9
38	33670	3369	1685	675.6	483.2	338.9	226.7	170.6
39	34600	3462	1732	694.3	496.5	348.3	232.9	175.3
40	35530	3555	1779	713.0	509.9	357.6	239.2	180.0
41	36470	3649	1825	731.7	523.3	367.0	245.5	184.7
42	37400	3742	1872	750.4	536.7	376.4	251.7	189.4
43	38340	3836	1919	769.2	550.1	385.8	258.0	194.1
44	39280	3930	1966	787.9	563.5	395.2	264.3	198.9
45	40210	4024	2013	806.7	576.9	404.6	270.6	203.6
46	41150	4117	2060	825.5	590.3	414.0	276.9	208.3
47	42090	4211	2107	844.3	603.8	423.4	283.1	213.0
48	43030	4305	2154	863.1	617.2	432.8	289.4	217.8
49	43970	4399	2201	882.0	630.7	442.3	295.7	222.5
50	44910	4493	2248	900.8	644.2	451.7	302.0	227.2

Table of n satisfying the equation $B(c,n,p) = 0.800$

c	100p = 20.0	25.0	30.0	35.0	40.0	45.0	50.0
0	1.000	0.7756	0.6256	0.5179	0.4368	0.3732	0.3219
1	4.237	3.420	2.879	2.494	2.209	1.989	1.815
2	7.946	6.421	5.410	4.691	4.156	3.744	3.417
3	11.88	9.597	8.080	7.001	6.197	5.576	5.084
4	15.95	12.88	10.83	9.382	8.296	7.458	6.793
5	20.12	16.23	13.65	11.81	10.43	9.374	8.530
6	24.36	19.64	16.51	14.27	12.60	11.31	10.29
7	28.65	23.10	19.40	16.77	14.80	13.27	12.06
8	32.99	26.59	22.32	19.28	17.01	15.25	13.85
9	37.37	30.10	25.27	21.82	19.24	17.25	15.66
10	41.78	33.65	28.23	24.37	21.49	19.25	17.47
11	46.22	37.21	31.21	26.94	23.74	21.27	19.29
12	50.68	40.79	34.21	29.52	26.01	23.29	21.12
13	55.16	44.39	37.22	32.11	28.28	25.32	22.96
14	59.66	48.00	40.24	34.71	30.57	27.36	24.80
15	64.17	51.62	43.27	37.31	32.86	29.40	26.65
16	68.70	55.26	46.31	39.93	35.15	31.45	28.50
17	73.25	58.91	49.36	42.55	37.46	33.50	30.35
18	77.81	62.57	52.42	45.18	39.77	35.56	32.21
19	82.38	66.23	55.48	47.82	42.08	37.63	34.08
20	86.96	69.91	58.56	50.46	44.40	39.70	35.94
21	91.55	73.59	61.63	53.11	46.72	41.77	37.82
22	96.15	77.28	64.72	55.76	49.05	43.84	39.69
23	100.7	80.98	67.81	58.41	51.38	45.92	41.57
24	105.3	84.68	70.90	61.07	53.71	48.00	43.44
25	110.0	88.39	74.00	63.74	56.05	50.08	45.33
26	114.6	92.11	77.11	66.40	58.39	52.17	47.21
27	119.2	95.83	80.21	69.07	60.73	54.26	49.09
28	123.9	99.55	83.33	71.75	63.08	56.35	50.98
29	128.5	103.2	86.44	74.43	65.43	58.45	52.87
30	133.2	107.0	89.56	77.11	67.78	60.54	54.76
31	137.8	110.7	92.68	79.79	70.13	62.64	56.66
32	142.5	114.5	95.81	82.48	72.49	64.74	58.55
33	147.2	118.2	98.94	85.17	74.85	66.84	60.45
34	151.9	122.0	102.0	87.86	77.21	68.94	62.35
35	156.5	125.7	105.2	90.55	79.57	71.05	64.25
36	161.2	129.5	108.3	93.25	81.94	73.16	66.15
37	165.9	133.2	111.4	95.94	84.30	75.26	68.05
38	170.6	137.0	114.6	98.64	86.67	77.37	69.95
39	175.3	140.8	117.7	101.3	89.04	79.49	71.86
40	180.0	144.5	120.9	104.0	91.41	81.60	73.76
41	184.7	148.3	124.0	106.7	93.78	83.71	75.67
42	189.4	152.1	127.2	109.4	96.16	85.83	77.58
43	194.1	155.8	130.3	112.1	98.54	87.94	79.49
44	198.9	159.6	133.5	114.8	100.9	90.06	81.40
45	203.6	163.4	136.7	117.6	103.2	92.18	83.31
46	208.3	167.2	139.8	120.3	105.6	94.30	85.22
47	213.0	171.0	143.0	123.0	108.0	96.42	87.14
48	217.8	174.8	146.1	125.7	110.4	98.54	89.05
49	222.5	178.6	149.3	128.4	112.8	100.6	90.97
50	227.2	182.4	152.5	131.1	115.2	102.7	92.88

Table of n satisfying the equation B(c,n,p)= 0.900

c	100p 0.1	1.0	2.0	5.0	7.0	10.0	15.0	20.0
0	105.3	10.48	5.215	2.054	1.451	1.000	0.6482	0.4721
1	532.0	53.41	26.82	10.88	7.848	5.576	3.816	2.944
2	1102	110.6	55.55	22.50	16.21	11.50	7.843	6.024
3	1745	175.1	87.87	35.54	25.57	18.11	12.31	9.426
4	2433	244.0	122.4	49.45	35.56	25.14	17.06	13.03
5	3152	316.1	158.5	63.98	45.98	32.48	22.00	16.77
6	3895	390.5	195.7	78.97	56.72	40.04	27.08	20.62
7	4657	466.7	233.9	94.31	67.72	47.78	32.28	24.55
8	5433	544.5	272.9	109.9	78.92	55.66	37.58	28.55
9	6222	623.5	312.4	125.8	90.30	63.65	42.94	32.61
10	7022	703.5	352.5	141.9	101.8	71.75	48.38	36.71
11	7830	784.5	393.0	158.2	113.4	79.93	53.87	40.85
12	8647	866.2	433.9	174.6	125.2	88.19	59.41	45.03
13	9471	948.7	475.2	191.1	137.0	96.52	64.99	49.24
14	10300	1031	516.8	207.8	149.0	104.9	70.61	53.48
15	11130	1115	558.7	224.6	161.0	113.3	76.27	57.75
16	11970	1199	600.8	241.5	173.1	121.8	81.96	62.04
17	12820	1284	643.1	258.5	185.3	130.3	87.67	66.35
18	13670	1369	685.7	275.6	197.5	138.9	93.42	70.67
19	14520	1454	728.5	292.7	209.7	147.5	99.19	75.02
20	15380	1540	771.4	310.0	222.1	156.2	104.9	79.38
21	16240	1626	814.5	327.2	234.4	164.8	110.7	83.76
22	17110	1713	857.8	344.6	246.8	173.6	116.6	88.15
23	17970	1799	901.2	362.0	259.3	182.3	122.4	92.56
24	18840	1887	944.8	379.5	271.8	191.1	128.3	96.97
25	19710	1974	988.4	397.0	284.3	199.8	134.2	101.4
26	20590	2061	1032	414.5	296.9	208.7	140.1	105.8
27	21470	2149	1076	432.1	309.5	217.5	146.0	110.2
28	22350	2237	1120	449.8	322.1	226.3	151.9	114.7
29	23230	2325	1164	467.5	334.7	235.2	157.8	119.2
30	24110	2414	1208	485.2	347.4	244.1	163.8	123.7
31	25000	2502	1252	503.0	360.1	253.0	169.8	128.1
32	25880	2591	1297	520.8	372.9	262.0	175.7	132.6
33	26770	2680	1341	538.6	385.6	270.9	181.7	137.1
34	27660	2769	1386	556.5	398.4	279.9	187.7	141.7
35	28550	2858	1431	574.4	411.2	288.8	193.7	146.2
36	29450	2948	1475	592.3	424.0	297.8	199.7	150.7
37	30340	3037	1520	610.2	436.8	306.8	205.7	155.2
38	31240	3127	1565	628.2	449.7	315.8	211.8	159.8
39	32140	3217	1610	646.2	462.6	324.9	217.8	164.3
40	33040	3307	1655	664.2	475.5	333.9	223.9	168.9
41	33940	3397	1700	682.3	488.4	343.0	229.9	173.4
42	34840	3487	1745	700.4	501.3	352.0	236.0	178.0
43	35740	3577	1790	718.5	514.3	361.1	242.0	182.5
44	36640	3668	1835	736.6	527.2	370.2	248.1	187.1
45	37550	3758	1881	754.7	540.2	379.3	254.2	191.7
46	38450	3849	1926	772.9	553.2	388.4	260.3	196.2
47	39360	3940	1971	791.1	566.2	397.5	266.4	200.8
48	40270	4030	2017	809.3	579.2	406.6	272.5	205.4
49	41180	4121	2062	827.5	592.2	415.8	278.6	210.0
50	42090	4212	2108	845.7	605.3	424.9	284.7	214.6

Table of n satisfying the equation B(c,n,p)= 0.900

c	100p 20.0	25.0	30.0	35.0	40.0	45.0	50.0
0	0.4721	0.3662	0.2953	0.2445	0.2062	0.1762	0.1520
1	2.944	2.426	2.086	1.847	1.672	1.540	1.437
2	6.024	4.941	4.226	3.722	3.350	3.067	2.847
3	9.426	7.703	6.563	5.756	5.160	4.703	4.345
4	13.03	10.62	9.025	7.894	7.055	6.411	5.904
5	16.77	13.64	11.57	10.10	9.011	8.170	7.507
6	20.62	16.75	14.19	12.36	11.01	9.967	9.143
7	24.55	19.93	16.85	14.67	13.04	11.79	10.80
8	28.55	23.15	19.56	17.01	15.11	13.64	12.48
9	32.61	26.42	22.31	19.38	17.20	15.52	14.18
10	36.71	29.72	25.08	21.78	19.31	17.41	15.90
11	40.85	33.06	27.88	24.19	21.44	19.32	17.63
12	45.03	36.42	30.70	26.63	23.59	21.23	19.37
13	49.24	39.81	33.54	29.08	25.74	23.17	21.12
14	53.48	43.22	36.40	31.54	27.92	25.11	22.88
15	57.75	46.66	39.28	34.02	30.10	27.06	24.65
16	62.04	50.10	42.17	36.51	32.29	29.02	26.42
17	66.35	53.57	45.07	39.01	34.49	30.99	28.20
18	70.67	57.05	47.98	41.52	36.70	32.96	29.99
19	75.02	60.54	50.91	44.04	38.91	34.94	31.78
20	79.38	64.05	53.84	46.57	41.14	36.93	33.58
21	83.76	67.57	56.79	49.11	43.37	38.92	35.38
22	88.15	71.09	59.74	51.65	45.61	40.92	37.19
23	92.56	74.63	62.71	54.20	47.85	42.92	39.00
24	96.97	78.18	65.68	56.76	50.09	44.93	40.82
25	101.4	81.74	68.65	59.32	52.35	46.94	42.64
26	105.8	85.31	71.64	61.89	54.61	48.96	44.46
27	110.2	88.88	74.63	64.47	56.87	50.98	46.29
28	114.7	92.46	77.62	67.05	59.13	53.00	48.11
29	119.2	96.05	80.63	69.63	61.40	55.03	49.95
30	123.7	99.65	83.63	72.22	63.68	57.06	51.78
31	128.1	103.2	86.65	74.81	65.96	59.09	53.62
32	132.6	106.8	89.67	77.41	68.24	61.13	55.46
33	137.1	110.4	92.69	80.01	70.52	63.16	57.30
34	141.7	114.0	95.72	82.61	72.81	65.21	59.15
35	146.2	117.7	98.75	85.22	75.10	67.25	60.99
36	150.7	121.3	101.7	87.83	77.39	69.30	62.84
37	155.2	124.9	104.8	90.45	79.69	71.35	64.69
38	159.8	128.6	107.8	93.07	81.99	73.40	66.55
39	164.3	132.2	110.9	95.69	84.29	75.45	68.40
40	168.9	135.9	113.9	98.31	86.60	77.51	70.26
41	173.4	139.5	117.0	100.9	88.90	79.56	72.12
42	178.0	143.2	120.0	103.5	91.21	81.62	73.98
43	182.5	146.9	123.1	106.2	93.52	83.68	75.84
44	187.1	150.5	126.2	108.8	95.84	85.75	77.71
45	191.7	154.2	129.2	111.4	98.15	87.81	79.57
46	196.2	157.9	132.3	114.1	100.4	89.88	81.44
47	200.8	161.5	135.4	116.7	102.7	91.95	83.31
48	205.4	165.2	138.5	119.4	105.1	94.02	85.17
49	210.0	168.9	141.5	122.0	107.4	96.09	87.05
50	214.6	172.6	144.6	124.7	109.7	98.16	88.92

Table of n satisfying the equation B(c,n,p)= 0.950

c	100p 0.1	1.0	2.0	5.0	7.0	10.0	15.0	20.0
0	51.26	5.103	2.538	1.000	0.7068	0.4868	0.3156	0.2298
1	355.6	35.86	18.09	7.448	5.425	3.913	2.749	2.177
2	818.2	82.36	41.48	16.96	12.30	8.812	6.110	4.773
3	1367	137.4	69.14	28.16	20.36	14.52	10.00	7.752
4	1971	198.0	99.53	40.44	29.19	20.77	14.23	10.97
5	2614	262.5	131.8	53.48	38.56	27.38	18.70	14.38
6	3286	329.8	165.6	67.09	48.33	34.27	23.35	17.91
7	3982	399.5	200.5	81.15	58.42	41.38	28.14	21.55
8	4696	471.1	236.4	95.59	68.77	48.67	33.05	25.27
9	5427	544.3	273.0	110.3	79.34	56.11	38.06	29.06
10	6170	618.8	310.3	125.3	90.09	63.68	43.15	32.91
11	6926	694.4	348.2	140.5	101.0	71.35	48.31	36.82
12	7691	771.1	386.6	155.9	112.0	79.13	53.54	40.77
13	8466	848.6	425.4	171.5	123.2	86.99	58.82	44.76
14	9248	927.0	464.7	187.3	134.5	94.92	64.15	48.79
15	10030	1006	504.2	203.2	145.9	102.9	69.52	52.85
16	10830	1085	544.2	219.2	157.3	110.9	74.93	56.93
17	11630	1166	584.4	235.4	168.9	119.1	80.39	61.05
18	12440	1246	624.8	251.6	180.5	127.2	85.87	65.19
19	13250	1328	665.6	268.0	192.2	135.5	91.38	69.35
20	14070	1410	706.5	284.4	204.0	143.7	96.93	73.53
21	14890	1492	747.7	300.9	215.8	152.0	102.5	77.74
22	15720	1575	789.1	317.5	227.7	160.4	108.1	81.96
23	16550	1658	830.6	334.2	239.7	168.8	113.7	86.19
24	17380	1741	872.4	351.0	251.7	177.2	119.3	90.45
25	18220	1825	914.3	367.8	263.7	185.6	125.0	94.72
26	19060	1909	956.3	384.6	275.8	194.1	130.7	99.00
27	19900	1993	998.6	401.6	287.9	202.6	136.4	103.2
28	20740	2078	1040	418.6	300.0	211.2	142.1	107.6
29	21590	2163	1083	435.6	312.2	219.7	147.8	111.9
30	22440	2248	1126	452.7	324.4	228.3	153.5	116.2
31	23300	2333	1168	469.8	336.7	236.9	159.3	120.6
32	24150	2419	1211	487.0	349.0	245.5	165.1	124.9
33	25010	2505	1254	504.2	361.3	254.2	170.9	129.3
34	25870	2591	1297	521.5	373.7	262.8	176.7	133.6
35	26730	2677	1340	538.8	386.0	271.5	182.5	138.0
36	27590	2763	1383	556.1	398.5	280.2	188.3	142.4
37	28460	2850	1427	573.5	410.9	289.0	194.2	146.8
38	29330	2937	1470	590.9	423.3	297.7	200.0	151.2
39	30200	3023	1514	608.3	435.8	306.4	205.9	155.6
40	31070	3111	1557	625.8	448.3	315.2	211.7	160.0
41	31940	3198	1601	643.3	460.8	324.0	217.6	164.5
42	32810	3285	1645	660.8	473.4	332.8	223.5	168.9
43	33690	3373	1689	678.4	485.9	341.6	229.4	173.3
44	34560	3461	1732	696.0	498.5	350.4	235.3	177.8
45	35440	3548	1776	713.6	511.1	359.3	241.2	182.2
46	36320	3636	1820	731.3	523.7	368.1	247.2	186.7
47	37200	3724	1864	748.9	536.4	377.0	253.1	191.2
48	38080	3813	1909	766.6	549.0	385.9	259.0	195.6
49	38960	3901	1953	784.3	561.7	394.8	265.0	200.1
50	39850	3989	1997	802.1	574.4	403.7	270.9	204.6

Table of n satisfying the equation $B(c,n,p) = 0.950$

	100p						
c	20.0	25.0	30.0	35.0	40.0	45.0	50.0
0	0.2298	0.1782	0.1438	0.1190	0.1004	0.08579	0.07400
1	2.177	1.843	1.627	1.478	1.371	1.292	1.232
2	4.773	3.982	3.465	3.105	2.844	2.649	2.501
3	7.752	6.416	5.537	4.920	4.469	4.128	3.866
4	10.97	9.041	7.763	6.862	6.198	5.694	5.303
5	14.38	11.80	10.09	8.894	8.004	7.325	6.795
6	17.91	14.66	12.51	10.99	9.868	9.005	8.329
7	21.55	17.61	14.99	13.14	11.77	10.72	9.896
8	25.27	20.62	17.53	15.34	13.72	12.47	11.49
9	29.06	23.68	20.11	17.58	15.69	14.24	13.10
10	32.91	26.79	22.73	19.84	17.70	16.04	14.74
11	36.82	29.94	25.38	22.13	19.72	17.86	16.39
12	40.77	33.13	28.06	24.45	21.77	19.70	18.06
13	44.76	36.35	30.76	26.79	23.83	21.54	19.74
14	48.79	39.59	33.49	29.14	25.91	23.41	21.43
15	52.85	42.86	36.23	31.51	28.00	25.28	23.13
16	56.93	46.16	39.00	33.90	30.10	27.17	24.84
17	61.05	49.47	41.78	36.30	32.22	29.06	26.56
18	65.19	52.81	44.57	38.72	34.35	30.97	28.29
19	69.35	56.16	47.38	41.14	36.48	32.88	30.02
20	73.53	59.52	50.21	43.58	38.63	34.80	31.76
21	77.74	62.91	53.04	46.02	40.78	36.73	33.51
22	81.96	66.30	55.89	48.48	42.95	38.66	35.27
23	86.19	69.71	58.75	50.94	45.12	40.61	37.02
24	90.45	73.13	61.62	53.42	47.29	42.55	38.79
25	94.72	76.57	64.49	55.90	49.47	44.51	40.56
26	99.00	80.01	67.38	58.38	51.66	46.46	42.33
27	103.2	83.46	70.27	60.88	53.86	48.42	44.11
28	107.6	86.93	73.18	63.38	56.06	50.39	45.89
29	111.9	90.40	76.08	65.89	58.26	52.36	47.67
30	116.2	93.88	79.00	68.40	60.47	54.34	49.46
31	120.6	97.37	81.92	70.92	62.69	56.32	51.25
32	124.9	100.8	84.85	73.44	64.91	58.30	53.05
33	129.3	104.3	87.79	75.97	67.13	60.29	54.84
34	133.6	107.8	90.73	78.50	69.36	62.28	56.65
35	138.0	111.4	93.68	81.04	71.59	64.27	58.45
36	142.4	114.9	96.63	83.58	73.83	66.27	60.26
37	146.8	118.4	99.59	86.13	76.07	68.27	62.07
38	151.2	122.0	102.5	88.68	78.31	70.27	63.88
39	155.6	125.5	105.5	91.24	80.55	72.28	65.69
40	160.0	129.1	108.4	93.79	82.80	74.29	67.51
41	164.5	132.6	111.4	96.36	85.06	76.30	69.33
42	168.9	136.2	114.4	98.92	87.31	78.31	71.15
43	173.3	139.7	117.4	101.4	89.57	80.33	72.97
44	177.8	143.3	120.4	104.0	91.83	82.35	74.80
45	182.2	146.9	123.4	106.6	94.09	84.37	76.62
46	186.7	150.5	126.4	109.2	96.36	86.39	78.45
47	191.2	154.1	129.4	111.8	98.63	88.42	80.28
48	195.6	157.7	132.4	114.3	100.9	90.44	82.11
49	200.1	161.2	135.4	116.9	103.1	92.47	83.95
50	204.6	164.8	138.4	119.5	105.4	94.50	85.79

Table of n satisfying the equation $B(c,n,p) = 0.975$

c	100p 0.1	1.0	2.0	5.0	7.0	10.0	15.0	20.0
0	25.30	2.519	1.253	0.4935	0.3488	0.2402	0.1557	0.1134
1	242.5	24.60	12.50	5.250	3.877	2.856	2.078	1.703
2	619.3	62.56	31.63	13.09	9.570	6.937	4.907	3.910
3	1090	109.9	55.46	22.78	16.56	11.91	8.319	6.539
4	1624	163.5	82.37	33.69	24.42	17.49	12.11	9.450
5	2203	221.5	111.5	45.47	32.90	23.49	16.18	12.56
6	2815	283.0	142.3	57.91	41.85	29.81	20.47	15.82
7	3455	347.1	174.4	70.88	51.16	36.39	24.92	19.21
8	4117	413.4	207.7	84.29	60.79	43.18	29.50	22.69
9	4797	481.6	241.8	98.05	70.66	50.14	34.20	26.26
10	5493	551.3	276.8	112.1	80.76	57.25	39.00	29.90
11	6202	622.4	312.4	126.4	91.04	64.50	43.88	33.60
12	6924	694.7	348.6	141.0	101.4	71.85	48.83	37.35
13	7656	768.0	385.3	155.8	112.0	79.31	53.85	41.15
14	8398	842.3	422.5	170.7	122.8	86.86	58.93	45.00
15	9148	917.4	460.2	185.8	133.6	94.48	64.06	48.88
16	9906	993.3	498.2	201.1	144.5	102.1	69.24	52.79
17	10670	1069	536.5	216.5	155.6	109.9	74.46	56.74
18	11440	1147	575.2	232.1	166.7	117.7	79.72	60.72
19	12210	1225	614.2	247.7	177.9	125.6	85.01	64.72
20	13000	1303	653.4	263.5	189.2	133.6	90.35	68.75
21	13790	1382	692.9	279.4	200.6	141.6	95.71	72.80
22	14580	1461	732.7	295.3	212.0	149.6	101.1	76.87
23	15380	1541	772.6	311.4	223.5	157.7	106.5	80.97
24	16180	1621	812.8	327.5	235.1	165.8	111.9	85.08
25	16980	1702	853.2	343.7	246.7	173.9	117.4	89.21
26	17790	1783	893.7	360.0	258.3	182.1	122.9	93.36
27	18600	1864	934.5	376.3	270.0	190.3	128.4	97.52
28	19420	1946	975.4	392.7	281.8	198.6	133.9	101.6
29	20240	2028	1016	409.2	293.6	206.9	139.5	105.8
30	21060	2110	1057	425.7	305.4	215.2	145.1	110.0
31	21890	2193	1098	442.3	317.3	223.5	150.7	114.3
32	22720	2276	1140	459.0	329.2	231.9	156.3	118.5
33	23550	2359	1182	475.7	341.2	240.3	161.9	122.7
34	24380	2442	1223	492.4	353.1	248.7	167.5	127.0
35	25210	2526	1265	509.2	365.2	257.1	173.2	131.2
36	26050	2610	1307	526.0	377.2	265.6	178.8	135.5
37	26890	2694	1349	542.9	389.3	274.1	184.5	139.8
38	27730	2778	1391	559.8	401.4	282.6	190.2	144.1
39	28580	2862	1434	576.8	413.5	291.1	195.9	148.4
40	29420	2947	1476	593.8	425.7	299.6	201.6	152.7
41	30270	3032	1518	610.8	437.9	308.2	207.4	157.0
42	31120	3117	1561	627.9	450.1	316.8	213.1	161.4
43	31970	3202	1604	645.0	462.3	325.3	218.9	165.7
44	32820	3287	1646	662.1	474.6	333.9	224.6	170.0
45	33680	3373	1689	679.3	486.8	342.6	230.4	174.4
46	34530	3459	1732	696.4	499.1	351.2	236.2	178.7
47	35390	3544	1775	713.7	511.5	359.8	242.0	183.1
48	36250	3630	1818	730.9	523.8	368.5	247.8	187.5
49	37110	3717	1861	748.2	536.2	377.2	253.6	191.8
50	37970	3803	1904	765.5	548.6	385.9	259.4	196.2

Table of n satisfying the equation B(c,n,p)= 0.975

	100p						
c	20.0	25.0	30.0	35.0	40.0	45.0	50.0
0	0.1134	0.08800	0.07098	0.05877	0.04956	0.04234	0.03652
1	1.703	1.488	1.353	1.263	1.200	1.155	1.121
2	3.910	3.327	2.952	2.696	2.515	2.384	2.287
3	6.539	5.488	4.803	4.328	3.986	3.733	3.543
4	9.450	7.868	6.830	6.104	5.575	5.179	4.878
5	12.56	10.40	8.983	7.985	7.253	6.700	6.275
6	15.82	13.05	11.23	9.945	8.998	8.279	7.721
7	19.21	15.80	13.55	11.96	10.79	9.902	9.206
8	22.69	18.63	15.94	14.04	12.63	11.56	10.72
9	26.26	21.52	18.38	16.16	14.51	13.25	12.26
10	29.90	24.46	20.86	18.31	16.42	14.97	13.83
11	33.60	27.46	23.38	20.50	18.36	16.71	15.42
12	37.35	30.49	25.94	22.71	20.31	18.47	17.02
13	41.15	33.56	28.52	24.95	22.29	20.25	18.64
14	45.00	36.66	31.14	27.21	24.29	22.05	20.27
15	48.88	39.80	33.77	29.49	26.31	23.85	21.92
16	52.79	42.96	36.43	31.79	28.34	25.68	23.57
17	56.74	46.14	39.11	34.11	30.38	27.51	25.24
18	60.72	49.35	41.80	36.43	32.44	29.35	26.92
19	64.72	52.58	44.51	38.78	34.50	31.21	28.60
20	68.75	55.83	47.24	41.13	36.58	33.07	30.29
21	72.80	59.09	49.98	43.50	38.67	34.94	31.99
22	76.87	62.37	52.74	45.88	40.77	36.82	33.70
23	80.97	65.67	55.50	48.27	42.88	38.71	35.41
24	85.08	68.98	58.28	50.67	44.99	40.61	37.13
25	89.21	72.31	61.07	53.08	47.12	42.51	38.85
26	93.36	75.65	63.87	55.50	49.24	44.41	40.58
27	97.52	79.00	66.68	57.92	51.38	46.33	42.32
28	101.6	82.36	69.50	60.35	53.52	48.25	44.06
29	105.8	85.73	72.33	62.79	55.67	50.17	45.80
30	110.0	89.12	75.17	65.24	57.83	52.10	47.55
31	114.3	92.51	78.01	67.70	59.99	54.03	49.30
32	118.5	95.91	80.87	70.16	62.16	55.97	51.05
33	122.7	99.32	83.73	72.62	64.33	57.91	52.81
34	127.0	102.7	86.59	75.09	66.50	59.86	54.58
35	131.2	106.1	89.47	77.57	68.68	61.81	56.34
36	135.5	109.6	92.35	80.05	70.87	63.76	58.11
37	139.8	113.0	95.23	82.54	73.06	65.72	59.89
38	144.1	116.5	98.12	85.03	75.25	67.68	61.66
39	148.4	119.9	101.0	87.53	77.45	69.65	63.44
40	152.7	123.4	103.9	90.03	79.65	71.61	65.22
41	157.0	126.9	106.8	92.54	81.85	73.58	67.01
42	161.4	130.3	109.7	95.05	84.06	75.56	68.79
43	165.7	133.8	112.6	97.56	86.27	77.53	70.58
44	170.0	137.3	115.5	100.0	88.49	79.51	72.37
45	174.4	140.8	118.5	102.6	90.71	81.50	74.17
46	178.7	144.3	121.4	105.1	92.93	83.48	75.97
47	183.1	147.8	124.3	107.6	95.15	85.47	77.76
48	187.5	151.3	127.3	110.1	97.38	87.46	79.56
49	191.8	154.8	130.2	112.7	99.61	89.45	81.37
50	196.2	158.4	133.2	115.2	101.8	91.44	83.17

Table of n satisfying the equation $B(c,n,p) = 0.990$

c	100p = 0.1	1.0	2.0	5.0	7.0	10.0	15.0	20.0
0	10.04	1.000	0.4974	0.1959	0.1384	0.09538	0.06184	0.04503
1	148.9	15.28	7.871	3.441	2.610	2.000	1.547	1.339
2	436.8	44.39	22.60	9.544	7.070	5.227	3.820	3.141
3	824.3	83.42	42.26	17.59	12.90	9.406	6.709	5.386
4	1280	129.2	65.33	26.98	19.69	14.24	10.02	7.943
5	1786	180.1	90.88	37.35	27.17	19.55	13.65	10.72
6	2332	234.8	118.3	48.48	35.18	25.23	17.51	13.68
7	2908	292.6	147.3	60.21	43.63	31.20	21.57	16.79
8	3509	353.0	177.6	72.44	52.42	37.42	25.79	20.00
9	4132	415.4	208.9	85.09	61.51	43.84	30.13	23.31
10	4773	479.7	241.1	98.09	70.85	50.43	34.59	26.70
11	5430	545.6	274.2	111.4	80.41	57.18	39.15	30.17
12	6102	612.8	307.9	124.9	90.16	64.06	43.79	33.69
13	6785	681.3	342.2	138.8	100.0	71.05	48.51	37.28
14	7479	750.9	377.1	152.8	110.1	78.15	53.30	40.91
15	8184	821.5	412.4	167.0	120.3	85.35	58.15	44.59
16	8898	893.0	448.3	181.5	130.7	92.63	63.05	48.30
17	9620	965.3	484.5	196.0	141.1	99.99	68.01	52.06
18	10340	1038	521.1	210.8	151.7	107.4	73.01	55.85
19	11080	1112	558.0	225.6	162.3	114.9	78.06	59.67
20	11820	1186	595.3	240.6	173.1	122.4	83.14	63.52
21	12570	1261	632.9	255.7	183.9	130.1	88.27	67.40
22	13330	1337	670.7	270.9	194.8	137.7	93.42	71.30
23	14090	1413	708.9	286.3	205.8	145.4	98.62	75.22
24	14850	1489	747.2	301.7	216.8	153.2	103.8	79.17
25	15620	1566	785.8	317.2	227.9	161.0	109.0	83.14
26	16400	1644	824.6	332.8	239.1	168.9	114.3	87.13
27	17170	1722	863.6	348.4	250.3	176.8	119.6	91.14
28	17960	1800	902.8	364.2	261.6	184.7	124.9	95.16
29	18740	1879	942.2	380.0	272.9	192.7	130.3	99.20
30	19530	1958	981.8	395.9	284.3	200.7	135.7	103.2
31	20320	2037	1021	411.9	295.8	208.7	141.1	107.3
32	21120	2117	1061	427.9	307.2	216.8	146.5	111.4
33	21920	2197	1101	444.0	318.7	224.9	151.9	115.5
34	22720	2277	1141	460.1	330.3	233.0	157.3	119.6
35	23530	2358	1182	476.3	341.9	241.1	162.8	123.7
36	24330	2439	1222	492.5	353.5	249.3	168.3	127.9
37	25140	2520	1263	508.8	365.2	257.5	173.8	132.0
38	25960	2601	1303	525.2	376.9	265.7	179.3	136.2
39	26770	2683	1344	541.6	388.6	274.0	184.8	140.3
40	27590	2764	1385	558.0	400.4	282.2	190.4	144.5
41	28410	2846	1426	574.5	412.2	290.5	195.9	148.7
42	29230	2929	1467	591.0	424.0	298.8	201.5	152.9
43	30050	3011	1509	607.6	435.9	307.1	207.1	157.1
44	30880	3094	1550	624.2	447.8	315.5	212.7	161.3
45	31710	3177	1591	640.8	459.7	323.9	218.3	165.6
46	32540	3260	1633	657.5	471.6	332.2	223.9	169.8
47	33370	3343	1675	674.2	483.6	340.6	229.5	174.0
48	34200	3426	1716	690.9	495.5	349.0	235.2	178.3
49	35030	3510	1758	707.7	507.5	357.5	240.8	182.6
50	35870	3593	1800	724.5	519.6	365.9	246.5	186.8

Table of n satisfying the equation $B(c,n,p) = 0.990$

	100p						
c	20.0	25.0	30.0	35.0	40.0	45.0	50.0
0	0.04503	0.03493	0.02817	0.02333	0.01967	0.01681	0.01449
1	1.339	1.225	1.158	1.114	1.085	1.065	1.050
2	3.141	2.754	2.514	2.357	2.252	2.180	2.130
3	5.386	4.615	4.122	3.788	3.556	3.392	3.275
4	7.943	6.719	5.924	5.377	4.987	4.703	4.496
5	10.72	9.000	7.871	7.085	6.518	6.098	5.784
6	13.68	11.41	9.928	8.886	8.127	7.559	7.128
7	16.79	13.94	12.07	10.76	9.798	9.074	8.518
8	20.00	16.56	14.29	12.69	11.52	10.63	9.946
9	23.31	19.25	16.56	14.67	13.28	12.22	11.40
10	26.70	22.00	18.89	16.70	15.08	13.85	12.89
11	30.17	24.81	21.27	18.76	16.91	15.50	14.40
12	33.69	27.67	23.68	20.86	18.77	17.18	15.93
13	37.28	30.57	26.13	22.99	20.66	18.87	17.48
14	40.91	33.51	28.61	25.14	22.56	20.59	19.04
15	44.59	36.49	31.12	27.31	24.49	22.32	20.62
16	48.30	39.49	33.65	29.51	26.43	24.07	22.21
17	52.06	42.53	36.21	31.72	28.39	25.83	23.82
18	55.85	45.59	38.78	33.96	30.37	27.61	25.43
19	59.67	48.68	41.38	36.20	32.36	29.39	27.06
20	63.52	51.78	44.00	38.47	34.36	31.19	28.69
21	67.40	54.91	46.63	40.75	36.37	33.00	30.34
22	71.30	58.06	49.28	43.04	38.39	34.82	31.99
23	75.22	61.23	51.94	45.34	40.43	36.64	33.65
24	79.17	64.42	54.62	47.66	42.47	38.47	35.32
25	83.14	67.62	57.31	49.98	44.52	40.32	36.99
26	87.13	70.83	60.01	52.32	46.59	42.16	38.67
27	91.14	74.06	62.72	54.66	48.65	44.02	40.35
28	95.16	77.31	65.45	57.02	50.73	45.88	42.04
29	99.20	80.57	68.18	59.38	52.82	47.75	43.74
30	103.2	83.84	70.93	61.75	54.91	49.63	45.44
31	107.3	87.12	73.68	64.13	57.01	51.50	47.15
32	111.4	90.41	76.45	66.52	59.11	53.39	48.86
33	115.5	93.71	79.22	68.91	61.22	55.28	50.57
34	119.6	97.03	82.00	71.31	63.34	57.18	52.29
35	123.7	100.3	84.79	73.72	65.46	59.08	54.01
36	127.9	103.6	87.58	76.13	67.58	60.98	55.74
37	132.0	107.0	90.39	78.55	69.71	62.89	57.47
38	136.2	110.3	93.20	80.97	71.85	64.80	59.21
39	140.3	113.7	96.01	83.40	73.99	66.72	60.94
40	144.5	117.1	98.84	85.84	76.14	68.64	62.68
41	148.7	120.4	101.6	88.28	78.29	70.56	64.43
42	152.9	123.8	104.5	90.73	80.44	72.49	66.18
43	157.1	127.2	107.3	93.18	82.60	74.42	67.93
44	161.3	130.6	110.1	95.63	84.76	76.35	69.68
45	165.6	134.0	113.0	98.09	86.93	78.29	71.43
46	169.8	137.4	115.9	100.5	89.10	80.23	73.19
47	174.0	140.8	118.7	103.0	91.27	82.18	74.95
48	178.3	144.2	121.6	105.4	93.44	84.12	76.72
49	182.6	147.7	124.5	107.9	95.62	86.07	78.48
50	186.8	151.1	127.3	110.4	97.81	88.02	80.25

Table of n satisfying the equation $B(c,n,p) = 0.995$

c	100p 0.1	1.0	2.0	5.0	7.0	10.0	15.0	20.0
0	5.010	0.4987	0.2481	0.09772	0.06907	0.04757	0.03084	0.02246
1	103.9	10.81	5.647	2.580	2.013	1.605	1.314	1.187
2	338.6	34.62	17.74	7.641	5.733	4.319	3.251	2.748
3	673.3	68.39	34.79	14.65	10.83	7.991	5.807	4.747
4	1079	109.2	55.37	23.07	16.93	12.34	8.810	7.075
5	1538	155.4	78.59	32.52	23.76	17.20	12.14	9.646
6	2039	205.7	103.8	42.78	31.16	22.46	15.73	12.40
7	2573	259.3	130.7	53.69	39.02	28.04	19.53	15.31
8	3134	315.6	159.0	65.14	47.26	33.87	23.50	18.34
9	3719	374.3	188.5	77.04	55.82	39.93	27.61	21.48
10	4324	434.9	218.9	89.32	64.66	46.18	31.84	24.71
11	4946	497.3	250.2	101.9	73.73	52.59	36.18	28.02
12	5583	561.2	282.2	114.8	83.01	59.14	40.62	31.39
13	6234	626.4	314.9	128.0	92.49	65.83	45.13	34.83
14	6896	692.8	348.2	141.4	102.1	72.63	49.73	38.32
15	7570	760.4	382.0	155.1	111.9	79.53	54.39	41.86
16	8254	828.9	416.4	168.9	121.8	86.53	59.11	45.44
17	8947	898.3	451.2	182.9	131.8	93.61	63.88	49.07
18	9648	968.6	486.4	197.1	142.0	100.7	68.71	52.73
19	10350	1039	522.0	211.4	152.3	108.0	73.59	56.43
20	11070	1111	557.9	225.9	162.7	115.3	78.51	60.16
21	11790	1183	594.2	240.5	173.1	122.6	83.47	63.91
22	12520	1256	630.8	255.2	183.7	130.1	88.47	67.70
23	13260	1330	667.6	270.0	194.3	137.5	93.51	71.51
24	14000	1404	704.8	284.9	205.0	145.1	98.57	75.35
25	14740	1479	742.1	300.0	215.8	152.7	103.6	79.21
26	15490	1554	779.8	315.1	226.6	160.3	108.8	83.09
27	16250	1629	817.6	330.3	237.5	168.0	113.9	87.00
28	17000	1705	855.7	345.6	248.5	175.7	119.1	90.92
29	17770	1782	894.0	361.0	259.5	183.4	124.3	94.86
30	18530	1859	932.4	376.5	270.6	191.2	129.5	98.81
31	19310	1936	971.1	392.0	281.7	199.0	134.8	102.7
32	20080	2013	1009	407.6	292.9	206.9	140.1	106.7
33	20860	2091	1048	423.3	304.1	214.8	145.4	110.7
34	21640	2169	1088	439.0	315.4	222.7	150.7	114.8
35	22420	2248	1127	454.8	326.7	230.7	156.0	118.8
36	23210	2327	1166	470.6	338.0	238.6	161.4	122.8
37	24000	2406	1206	486.5	349.4	246.6	166.8	126.9
38	24790	2485	1246	502.5	360.9	254.7	172.2	131.0
39	25590	2565	1286	518.5	372.3	262.7	177.6	135.1
40	26390	2645	1326	534.5	383.8	270.8	183.0	139.1
41	27190	2725	1366	550.6	395.4	278.9	188.4	143.3
42	27990	2805	1406	566.8	406.9	287.0	193.9	147.4
43	28790	2886	1446	583.0	418.5	295.2	199.4	151.5
44	29600	2967	1487	599.2	430.1	303.4	204.8	155.6
45	30410	3048	1527	615.5	441.8	311.6	210.3	159.8
46	31220	3129	1568	631.8	453.5	319.8	215.8	163.9
47	32030	3210	1609	648.2	465.2	328.0	221.3	168.1
48	32850	3292	1649	664.6	476.9	336.2	226.9	172.3
49	33670	3374	1690	681.0	488.7	344.5	232.4	176.5
50	34490	3456	1731	697.5	500.5	352.8	238.0	180.6

Table of n satisfying the equation $B(c,n,p) = 0.995$

	100p						
c	20.0	25.0	30.0	35.0	40.0	45.0	50.0
0	0.02246	0.01742	0.01405	0.01163	0.009812	0.008384	0.007231
1	1.187	1.121	1.083	1.059	1.043	1.033	1.025
2	2.748	2.472	2.307	2.205	2.140	2.097	2.068
3	4.747	4.139	3.759	3.510	3.343	3.231	3.156
4	7.075	6.062	5.413	4.974	4.669	4.455	4.305
5	9.646	8.175	7.222	6.567	6.101	5.765	5.520
6	12.40	10.43	9.151	8.261	7.619	7.146	6.795
7	15.31	12.81	11.17	10.03	9.204	8.586	8.121
8	18.34	15.29	13.28	11.87	10.84	10.07	9.488
9	21.48	17.84	15.45	13.76	12.53	11.60	10.89
10	24.71	20.47	17.67	15.70	14.26	13.16	12.32
11	28.02	23.16	19.95	17.69	16.02	14.76	13.78
12	31.39	25.90	22.26	19.70	17.81	16.37	15.26
13	34.83	28.68	24.62	21.75	19.63	18.02	16.76
14	38.32	31.51	27.01	23.83	21.48	19.68	18.28
15	41.86	34.38	29.43	25.93	23.34	21.36	19.81
16	45.44	37.28	31.88	28.06	25.23	23.06	21.36
17	49.07	40.22	34.36	30.21	27.13	24.77	22.92
18	52.73	43.18	36.86	32.37	29.05	26.50	24.50
19	56.43	46.17	39.38	34.56	30.98	28.24	26.08
20	60.16	49.19	41.92	36.76	32.93	29.99	27.68
21	63.91	52.23	44.47	38.98	34.89	31.75	29.28
22	67.70	55.29	47.05	41.21	36.87	33.53	30.90
23	71.51	58.37	49.64	43.45	38.85	35.31	32.52
24	75.35	61.46	52.25	45.71	40.85	37.10	34.15
25	79.21	64.58	54.87	47.98	42.85	38.90	35.79
26	83.09	67.71	57.51	50.26	44.87	40.71	37.44
27	87.00	70.86	60.16	52.55	46.89	42.53	39.09
28	90.92	74.03	62.82	54.85	48.92	44.35	40.74
29	94.86	77.21	65.49	57.16	50.96	46.19	42.41
30	98.81	80.40	68.17	59.48	53.01	48.02	44.08
31	102.7	83.61	70.86	61.81	55.07	49.87	45.75
32	106.7	86.82	73.57	64.15	57.13	51.72	47.43
33	110.7	90.05	76.28	66.49	59.20	53.57	49.12
34	114.8	93.29	79.00	68.84	61.27	55.43	50.81
35	118.8	96.54	81.73	71.20	63.35	57.30	52.50
36	122.8	99.81	84.47	73.57	65.44	59.17	54.20
37	126.9	103.0	87.22	75.94	67.53	61.04	55.90
38	131.0	106.3	89.97	78.32	69.63	62.92	57.61
39	135.1	109.6	92.73	80.70	71.73	64.81	59.31
40	139.1	112.9	95.50	83.10	73.84	66.69	61.03
41	143.3	116.2	98.28	85.49	75.95	68.59	62.74
42	147.4	119.5	101.0	87.89	78.07	70.48	64.46
43	151.5	122.8	103.8	90.30	80.19	72.38	66.19
44	155.6	126.2	106.6	92.71	82.32	74.29	67.91
45	159.8	129.5	109.4	95.13	84.45	76.19	69.64
46	163.9	132.9	112.2	97.55	86.58	78.10	71.38
47	168.1	136.2	115.0	99.98	88.72	80.02	73.11
48	172.3	139.6	117.8	102.4	90.86	81.93	74.85
49	176.5	142.9	120.7	104.8	93.01	83.85	76.59
50	180.6	146.3	123.5	107.2	95.16	85.78	78.33

Table of n satisfying the equation B(c,n,p)= 0.999

	100p						
c	0.1	1.0	2.0	5.0	7.0	10.0	15.0	20.0
0	1.000	0.09954	0.04952	0.01950	0.01378	0.009495	0.006156	0.004483
1	45.88	5.045	2.803	1.518	1.302	1.162	1.074	1.041
2	191.4	19.97	10.46	4.808	3.758	2.999	2.462	2.238
3	429.8	44.15	22.74	9.936	7.520	5.734	4.395	3.775
4	741.0	75.58	38.62	16.49	12.29	9.177	6.797	5.654
5	1109	112.6	57.33	24.16	17.86	13.16	9.560	7.803
6	1522	154.2	78.28	32.72	24.06	17.59	12.60	10.16
7	1973	199.6	101.0	42.00	30.77	22.37	15.89	12.69
8	2455	248.0	125.4	51.89	37.91	27.45	19.36	15.36
9	2963	299.0	151.0	62.30	45.42	32.78	23.00	18.16
10	3494	352.4	177.8	73.16	53.24	38.33	26.78	21.05
11	4045	407.7	205.6	84.40	61.34	44.07	30.68	24.04
12	4614	464.8	234.2	95.99	69.68	49.97	34.70	27.11
13	5199	523.4	263.7	107.8	78.24	56.03	38.81	30.25
14	5798	583.5	293.8	120.0	86.99	62.22	43.00	33.45
15	6409	644.8	324.5	132.4	95.92	68.53	47.28	36.71
16	7032	707.3	355.9	145.1	105.0	74.95	51.63	40.02
17	7666	770.8	387.8	158.0	114.2	81.48	56.04	43.38
18	8310	835.4	420.1	171.0	123.6	88.09	60.52	46.79
19	8963	900.8	452.9	184.2	133.1	94.80	65.05	50.23
20	9624	967.1	486.1	197.6	142.7	101.5	69.63	53.71
21	10290	1034	519.8	211.2	152.4	108.4	74.26	57.23
22	10960	1101	553.7	224.9	162.2	115.3	78.94	60.78
23	11650	1170	588.0	238.7	172.2	122.3	83.65	64.36
24	12340	1239	622.7	252.6	182.2	129.4	88.41	67.98
25	13030	1309	657.6	266.7	192.3	136.5	93.21	71.61
26	13730	1379	692.8	280.9	202.4	143.6	98.04	75.28
27	14440	1450	728.3	295.2	212.7	150.9	102.9	78.96
28	15150	1521	764.0	309.5	223.0	158.1	107.7	82.67
29	15870	1593	800.0	324.0	233.4	165.4	112.7	86.41
30	16590	1665	836.2	338.6	243.8	172.8	117.6	90.16
31	17320	1738	872.7	353.2	254.3	180.2	122.6	93.93
32	18050	1811	909.3	368.0	264.9	187.6	127.6	97.73
33	18780	1885	946.1	382.8	275.5	195.1	132.6	101.5
34	19520	1959	983.1	397.7	286.2	202.6	137.7	105.3
35	20260	2033	1020	412.6	296.9	210.2	142.8	109.2
36	21010	2108	1057	427.7	307.7	217.8	147.9	113.0
37	21760	2182	1095	442.8	318.5	225.4	153.0	116.9
38	22510	2258	1133	457.9	329.4	233.0	158.1	120.8
39	23260	2333	1170	473.1	340.3	240.7	163.3	124.7
40	24020	2409	1208	488.4	351.2	248.4	168.5	128.6
41	24780	2486	1247	503.8	362.2	256.1	173.7	132.5
42	25550	2562	1285	519.2	373.3	263.9	178.9	136.5
43	26310	2639	1323	534.6	384.3	271.7	184.1	140.4
44	27080	2716	1362	550.1	395.4	279.5	189.4	144.4
45	27850	2793	1401	565.6	406.6	287.3	194.6	148.4
46	28630	2871	1439	581.2	417.7	295.2	199.9	152.4
47	29400	2948	1478	596.9	428.9	303.0	205.2	156.4
48	30180	3026	1517	612.6	440.2	310.9	210.5	160.4
49	30960	3104	1557	628.3	451.4	318.9	215.8	164.4
50	31750	3183	1596	644.1	462.7	326.8	221.2	168.4

Table of n satisfying the equation B(c,n,p)= 0.999

c	100p 20.0	25.0	30.0	35.0	40.0	45.0	50.0
0	0.004483	0.003477	0.002805	0.002322	0.001958	0.001673	0.001443
1	1.041	1.025	1.017	1.012	1.008	1.006	1.005
2	2.238	2.132	2.078	2.048	2.031	2.020	2.014
3	3.775	3.445	3.259	3.153	3.092	3.057	3.036
4	5.654	5.011	4.621	4.379	4.228	4.136	4.081
5	7.803	6.790	6.154	5.737	5.461	5.280	5.166
6	10.16	8.737	7.825	7.211	6.788	6.497	6.301
7	12.69	10.81	9.608	8.780	8.197	7.782	7.490
8	15.36	13.01	11.48	10.42	9.672	9.125	8.729
9	18.16	15.30	13.43	12.13	11.20	10.51	10.01
10	21.05	17.66	15.44	13.90	12.78	11.95	11.32
11	24.04	20.10	17.52	15.71	14.40	13.42	12.67
12	27.11	22.60	19.64	17.57	16.05	14.92	14.05
13	30.25	25.16	21.81	19.46	17.74	16.44	15.45
14	33.45	27.77	24.02	21.39	19.46	18.00	16.87
15	36.71	30.42	26.27	23.35	21.20	19.57	18.32
16	40.02	33.11	28.55	25.33	22.96	21.17	19.78
17	43.38	35.84	30.86	27.34	24.75	22.78	21.25
18	46.79	38.60	33.19	29.37	26.56	24.41	22.74
19	50.23	41.40	35.55	31.43	28.38	26.06	24.25
20	53.71	44.22	37.94	33.50	30.22	27.72	25.76
21	57.23	47.07	40.35	35.59	32.08	29.39	27.29
22	60.78	49.95	42.78	37.70	33.95	31.08	28.83
23	64.36	52.85	45.22	39.83	35.83	32.77	30.38
24	67.98	55.77	47.69	41.97	37.73	34.48	31.93
25	71.61	58.72	50.17	44.12	39.64	36.20	33.50
26	75.28	61.68	52.67	46.29	41.56	37.93	35.08
27	78.96	64.66	55.19	48.47	43.49	39.66	36.66
28	82.67	67.66	57.72	50.66	45.43	41.41	38.25
29	86.41	70.68	60.26	52.87	47.38	43.16	39.85
30	90.16	73.72	62.81	55.08	49.34	44.92	41.45
31	93.93	76.77	65.38	57.30	51.30	46.69	43.06
32	97.73	79.83	67.96	59.54	53.28	48.47	44.68
33	101.5	82.91	70.55	61.78	55.26	50.25	46.30
34	105.3	86.00	73.15	64.03	57.25	52.04	47.93
35	109.2	89.10	75.76	66.30	59.25	53.83	49.56
36	113.0	92.22	78.39	68.56	61.26	55.63	51.20
37	116.9	95.35	81.02	70.84	63.27	57.44	52.84
38	120.8	98.49	83.66	73.13	65.29	59.25	54.49
39	124.7	101.6	86.31	75.42	67.31	61.07	56.14
40	128.6	104.8	88.96	77.72	69.34	62.89	57.80
41	132.5	107.9	91.63	80.02	71.38	64.72	59.46
42	136.5	111.1	94.30	82.33	73.42	66.55	61.12
43	140.4	114.3	96.98	84.65	75.47	68.39	62.79
44	144.4	117.5	99.67	86.98	77.52	70.23	64.46
45	148.4	120.7	102.3	89.31	79.58	72.07	66.14
46	152.4	123.9	105.0	91.64	81.64	73.92	67.82
47	156.4	127.1	107.7	93.98	83.70	75.77	69.50
48	160.4	130.4	110.4	96.33	85.77	77.63	71.19
49	164.4	133.6	113.2	98.68	87.85	79.49	72.88
50	168.4	136.9	115.9	101.0	89.93	81.36	74.57

Table of np satisfying the equation $B(c,np) = P$

c	P = 0.200	0.100	0.050	0.025	0.010	0.005	0.001
0	1.609	2.303	2.996	3.689	4.605	5.298	6.908
1	2.994	3.890	4.744	5.572	6.638	7.430	9.233
2	4.279	5.322	6.296	7.225	8.406	9.274	11.23
3	5.515	6.681	7.754	8.767	10.05	10.98	13.06
4	6.721	7.994	9.154	10.24	11.60	12.59	14.79
5	7.906	9.275	10.51	11.67	13.11	14.15	16.45
6	9.075	10.53	11.84	13.06	14.57	15.66	18.06
7	10.23	11.77	13.15	14.42	16.00	17.13	19.63
8	11.38	12.99	14.43	15.76	17.40	18.58	21.16
9	12.52	14.21	15.71	17.08	18.78	20.00	22.66
10	13.65	15.41	16.96	18.39	20.14	21.40	24.13
11	14.78	16.60	18.21	19.68	21.49	22.78	25.59
12	15.90	17.78	19.44	20.96	22.82	24.14	27.03
13	17.01	18.96	20.67	22.23	24.14	25.50	28.45
14	18.13	20.13	21.89	23.49	25.45	26.84	29.85
15	19.23	21.29	23.10	24.74	26.74	28.16	31.24
16	20.34	22.45	24.30	25.98	28.03	29.48	32.62
17	21.44	23.61	25.50	27.22	29.31	30.79	33.99
18	22.54	24.76	26.69	28.45	30.58	32.09	35.35
19	23.63	25.90	27.88	29.67	31.85	33.38	36.70
20	24.73	27.05	29.06	30.89	33.10	34.67	38.04
21	25.82	28.18	30.24	32.10	34.35	35.95	39.37
22	26.91	29.32	31.41	33.31	35.60	37.22	40.70
23	28.00	30.45	32.59	34.51	36.84	38.48	42.02
24	29.08	31.58	33.75	35.71	38.08	39.74	43.33
25	30.17	32.71	34.92	36.90	39.31	41.00	44.64
26	31.25	33.84	36.08	38.10	40.53	42.25	45.94
27	32.33	34.96	37.23	39.28	41.76	43.50	47.23
28	33.41	36.08	38.39	40.47	42.98	44.74	48.52
29	34.49	37.20	39.54	41.65	44.19	45.98	49.80
30	35.56	38.32	40.69	42.83	45.40	47.21	51.08
31	36.64	39.43	41.84	44.00	46.61	48.44	52.36
32	37.71	40.54	42.98	45.17	47.81	49.67	53.63
33	38.79	41.65	44.13	46.34	49.01	50.89	54.90
34	39.86	42.76	45.27	47.51	50.21	52.11	56.16
35	40.93	43.87	46.40	48.68	51.41	53.32	57.42
36	42.00	44.98	47.54	49.84	52.60	54.54	58.67
37	43.07	46.08	48.68	51.00	53.79	55.75	59.93
38	44.14	47.19	49.81	52.16	54.98	56.96	61.17
39	45.20	48.29	50.94	53.31	56.16	58.16	62.42
40	46.27	49.39	52.07	54.47	57.35	59.36	63.66
41	47.33	50.49	53.20	55.62	58.53	60.56	64.90
42	48.40	51.59	54.32	56.77	59.71	61.76	66.14
43	49.46	52.69	55.45	57.92	60.88	62.96	67.37
44	50.53	53.78	56.57	59.07	62.06	64.15	68.60
45	51.59	54.88	57.70	60.21	63.23	65.34	69.83
46	52.65	55.97	58.82	61.36	64.40	66.53	71.06
47	53.71	57.07	59.94	62.50	65.57	67.72	72.28
48	54.77	58.16	61.05	63.64	66.74	68.90	73.51
49	55.83	59.25	62.17	64.78	67.90	70.08	74.72
50	56.89	60.34	63.29	65.92	69.07	71.27	75.94

Table of np satisfying the equation B(c,np) = P

c	P = 0.800	0.900	0.950	0.975	0.990	0.995	0.999
0	0.2231	0.1054	0.05129	0.02532	0.01005	0.005013	0.001001
1	0.8244	0.5318	0.3554	0.2422	0.1486	0.1035	0.04540
2	1.535	1.102	0.8177	0.6187	0.4360	0.3379	0.1905
3	2.297	1.745	1.366	1.090	0.8232	0.6722	0.4286
4	3.090	2.433	1.970	1.623	1.279	1.078	0.7394
5	3.904	3.152	2.613	2.202	1.785	1.537	1.107
6	4.734	3.895	3.285	2.814	2.330	2.037	1.520
7	5.576	4.656	3.981	3.454	2.906	2.571	1.971
8	6.428	5.432	4.695	4.115	3.507	3.132	2.452
9	7.289	6.221	5.425	4.795	4.130	3.717	2.961
10	8.157	7.021	6.169	5.491	4.771	4.321	3.491
11	9.031	7.829	6.924	6.201	5.428	4.943	4.042
12	9.910	8.646	7.690	6.922	6.099	5.580	4.611
13	10.79	9.470	8.464	7.654	6.782	6.231	5.195
14	11.68	10.30	9.246	8.395	7.477	6.893	5.794
15	12.57	11.14	10.04	9.145	8.181	7.567	6.405
16	13.47	11.98	10.83	9.903	8.895	8.251	7.028
17	14.37	12.82	11.63	10.67	9.616	8.943	7.662
18	15.27	13.67	12.44	11.44	10.35	9.644	8.306
19	16.17	14.53	13.25	12.22	11.08	10.35	8.958
20	17.08	15.38	14.07	13.00	11.83	11.07	9.619
21	17.99	16.24	14.89	13.79	12.57	11.79	10.29
22	18.90	17.11	15.72	14.58	13.33	12.52	10.96
23	19.81	17.97	16.55	15.38	14.09	13.26	11.65
24	20.72	18.84	17.38	16.18	14.85	14.00	12.34
25	21.64	19.72	18.22	16.98	15.62	14.74	13.03
26	22.56	20.59	19.06	17.79	16.40	15.49	13.73
27	23.48	21.47	19.90	18.61	17.17	16.25	14.44
28	24.40	22.35	20.75	19.42	17.96	17.00	15.15
29	25.32	23.23	21.59	20.24	18.74	17.77	15.87
30	26.24	24.11	22.44	21.06	19.53	18.53	16.59
31	27.17	25.00	23.30	21.89	20.32	19.30	17.32
32	28.09	25.89	24.15	22.72	21.12	20.08	18.05
33	29.02	26.77	25.01	23.55	21.92	20.86	18.78
34	29.95	27.66	25.87	24.38	22.72	21.64	19.52
35	30.88	28.56	26.73	25.21	23.53	22.42	20.26
36	31.81	29.45	27.59	26.05	24.33	23.21	21.00
37	32.74	30.34	28.46	26.89	25.14	24.00	21.75
38	33.67	31.24	29.33	27.73	25.96	24.79	22.51
39	34.60	32.14	30.20	28.58	26.77	25.59	23.26
40	35.54	33.04	31.07	29.42	27.59	26.38	24.02
41	36.47	33.94	31.94	30.27	28.41	27.18	24.78
42	37.41	34.84	32.81	31.12	29.23	27.99	25.54
43	38.34	35.74	33.69	31.97	30.05	28.79	26.31
44	39.28	36.65	34.56	32.82	30.88	29.60	27.08
45	40.22	37.55	35.44	33.68	31.70	30.41	27.85
46	41.15	38.46	36.32	34.53	32.53	31.22	28.62
47	42.09	39.36	37.20	35.39	33.36	32.03	29.40
48	43.03	40.27	38.08	36.25	34.20	32.85	30.18
49	43.97	41.18	38.96	37.11	35.03	33.66	30.96
50	44.91	42.09	39.85	37.97	35.87	34.48	31.74

Table of n satisfying the equation B(c,n,p) = P for c = 1

	P							
100p	0.001	0.005	0.010	0.025	0.050	0.100	0.200	0.500
0.1	9230	7427	6636	5570	4742	3889	2994	1678
0.5	1843	1483	1325	1113	946.9	776.5	597.9	335.3
1.0	919.3	739.8	661.1	554.9	472.6	387.6	298.5	167.5
1.5	611.5	492.2	439.8	369.2	314.4	257.9	198.7	111.6
2.0	457.6	368.3	329.1	276.3	235.4	193.1	148.8	83.58
3.5	259.7	209.1	186.9	156.9	133.7	109.7	84.55	47.61
5.0	180.6	145.4	130.0	109.2	92.99	76.34	58.89	33.23
6.0	149.8	120.6	107.8	90.56	77.18	63.37	48.90	27.63
7.0	127.8	102.9	91.98	77.29	65.88	54.11	41.77	23.64
8.5	104.5	84.15	75.24	62.23	53.91	44.30	34.22	19.40
10.0	88.15	71.03	63.52	53.39	45.54	37.43	28.93	16.44
12.5	69.66	56.16	50.23	42.24	36.04	29.64	22.94	13.08
15.0	57.33	46.23	41.36	34.80	29.71	24.45	18.94	10.85
17.5	48.51	39.14	35.02	29.48	25.18	20.74	16.09	9.247
20.0	41.90	33.82	30.27	25.49	21.78	17.95	13.94	8.047
22.5	36.74	29.67	26.56	22.38	19.13	15.78	12.27	7.114
25.0	32.62	26.35	23.60	19.89	17.01	14.05	10.94	6.367
27.5	29.24	23.63	21.17	17.85	15.28	12.62	9.838	5.756
30.0	26.41	21.36	19.14	16.15	13.83	11.44	8.925	5.247
32.5	24.02	19.43	17.42	14.71	12.60	10.43	8.151	4.815
35.0	21.96	17.78	15.94	13.47	11.55	9.562	7.487	4.446
37.5	20.18	16.34	14.66	12.39	10.63	8.811	6.910	4.125
40.0	18.61	15.08	13.53	11.44	9.822	8.153	6.405	3.844
42.5	17.22	13.96	12.53	10.61	9.110	7.570	5.957	3.596
45.0	15.98	12.97	11.64	9.858	8.476	7.051	5.558	3.376
47.5	14.87	12.07	10.85	9.188	7.906	6.584	5.201	3.178
50.0	13.86	11.26	10.12	8.583	7.391	6.163	4.878	3.000

	P						
100p	0.800	0.900	0.950	0.975	0.990	0.995	0.999
0.1	824.4	532.0	355.6	242.5	148.9	103.9	45.88
0.5	164.9	106.5	71.39	48.82	30.14	21.15	9.571
1.0	82.52	53.41	35.86	24.60	15.28	10.81	5.045
1.5	55.04	35.69	24.01	16.53	10.34	7.366	3.545
2.0	41.30	26.82	18.09	12.50	7.871	5.647	2.803
3.5	23.64	15.43	10.48	7.318	4.701	3.449	1.870
5.0	16.58	10.88	7.448	5.250	3.441	2.580	1.518
6.0	13.83	9.111	6.267	4.448	2.954	2.248	1.389
7.0	11.87	7.848	5.425	3.877	2.610	2.013	1.302
8.5	9.797	6.511	4.535	3.275	2.248	1.771	1.217
10.0	8.344	5.576	3.913	2.856	2.000	1.605	1.162
12.5	6.699	4.519	3.213	2.386	1.724	1.426	1.106
15.0	5.603	3.816	2.749	2.078	1.547	1.314	1.074
17.5	4.822	3.317	2.421	1.861	1.426	1.239	1.054
20.0	4.237	2.944	2.177	1.703	1.339	1.187	1.041
22.5	3.783	2.655	1.990	1.582	1.274	1.149	1.032
25.0	3.420	2.426	1.843	1.488	1.225	1.121	1.025
27.5	3.124	2.240	1.724	1.414	1.188	1.099	1.021
30.0	2.879	2.086	1.627	1.353	1.158	1.083	1.017
32.5	2.671	1.957	1.546	1.304	1.134	1.069	1.014
35.0	2.494	1.847	1.478	1.263	1.114	1.059	1.012
37.5	2.342	1.753	1.421	1.229	1.098	1.050	1.010
40.0	2.209	1.672	1.371	1.200	1.085	1.043	1.008
42.5	2.092	1.602	1.329	1.176	1.074	1.038	1.007
45.0	1.989	1.540	1.292	1.155	1.065	1.033	1.006
47.5	1.897	1.485	1.260	1.137	1.057	1.029	1.005
50.0	1.815	1.437	1.232	1.121	1.050	1.025	1.005

Table of n satisfying the equation B(c,n,p) = P for c = 2

	P							
100p	0.001	0.005	0.010	0.025	0.050	0.100	0.200	0.500
0.1	11230	9271	8403	7223	6294	5321	4278	2674
0.5	2242	1852	1678	1443	1258	1063	854.7	534.5
1.0	1119	923.8	837.4	719.9	627.5	530.6	426.8	267.1
1.5	744.0	614.7	557.2	479.1	417.6	353.2	284.2	177.9
2.0	556.9	460.1	417.1	358.7	312.7	264.5	212.9	133.4
3.5	316.2	261.4	237.0	203.8	177.8	150.4	121.2	76.06
5.0	220.0	181.9	164.9	141.9	123.8	104.8	84.44	53.14
6.0	182.5	150.9	136.9	117.8	102.8	87.03	70.17	44.23
7.0	155.8	128.8	116.9	100.6	87.77	74.36	59.98	37.86
8.5	127.5	105.5	95.64	82.35	71.89	60.93	49.19	31.12
10.0	107.6	89.04	80.80	69.59	60.77	51.54	41.64	26.40
12.5	85.11	70.47	63.97	55.13	48.17	40.88	33.07	21.05
15.0	70.12	58.09	52.75	45.48	39.77	33.78	27.36	17.49
17.5	59.40	49.24	44.72	38.59	33.76	28.70	23.28	14.94
20.0	51.35	42.59	38.70	33.41	29.25	24.89	20.22	13.03
22.5	45.09	37.42	34.01	29.38	25.74	21.92	17.83	11.54
25.0	40.07	33.28	30.26	26.16	22.93	19.55	15.93	10.35
27.5	35.96	29.88	27.18	23.51	20.63	17.60	14.36	9.382
30.0	32.53	27.05	24.62	21.31	18.70	15.98	13.06	8.571
32.5	29.62	24.65	22.44	19.44	17.08	14.60	11.96	7.885
35.0	27.12	22.58	20.57	17.83	15.68	13.42	11.01	7.297
37.5	24.95	20.79	18.95	16.44	14.46	12.40	10.18	6.787
40.0	23.04	19.22	17.52	15.21	13.40	11.50	9.459	6.340
42.5	21.36	17.83	16.26	14.13	12.46	10.70	8.822	5.946
45.0	19.85	16.59	15.14	13.17	11.62	9.990	8.254	5.596
47.5	18.50	15.47	14.13	12.30	10.86	9.354	7.744	5.282
50.0	17.28	14.47	13.22	11.52	10.18	8.779	7.285	5.000

	P						
100p	0.800	0.900	0.950	0.975	0.990	0.995	0.999
0.1	1535	1102	818.2	619.3	436.8	338.6	191.4
0.5	307.2	220.8	164.1	124.4	87.99	68.40	39.02
1.0	153.7	110.6	82.36	62.56	44.39	34.62	19.97
1.5	102.5	73.92	55.11	41.94	29.86	23.37	13.63
2.0	76.98	55.55	41.48	31.63	22.60	17.74	10.46
3.5	44.09	31.94	23.96	18.38	13.26	10.52	6.413
5.0	30.94	22.50	16.96	13.09	9.544	7.641	4.808
6.0	25.82	18.83	14.24	11.03	8.099	6.526	4.192
7.0	22.17	16.21	12.30	9.570	7.070	5.733	3.758
8.5	18.30	13.44	10.24	8.019	5.983	4.898	3.306
10.0	15.60	11.50	8.812	6.937	5.227	4.319	2.999
12.5	12.53	9.304	7.189	5.716	4.378	3.672	2.668
15.0	10.49	7.843	6.110	4.907	3.820	3.251	2.462
17.5	9.037	6.802	5.344	4.335	3.428	2.959	2.328
20.0	7.946	6.024	4.773	3.910	3.141	2.748	2.238
22.5	7.098	5.421	4.332	3.584	2.923	2.591	2.176
25.0	6.421	4.941	3.982	3.327	2.754	2.472	2.132
27.5	5.869	4.550	3.698	3.120	2.621	2.379	2.100
30.0	5.410	4.226	3.465	2.952	2.514	2.307	2.078
32.5	5.022	3.953	3.270	2.812	2.428	2.250	2.061
35.0	4.691	3.722	3.105	2.696	2.357	2.205	2.048
37.5	4.405	3.523	2.965	2.598	2.300	2.169	2.038
40.0	4.156	3.350	2.844	2.515	2.252	2.140	2.031
42.5	3.937	3.200	2.740	2.444	2.213	2.116	2.025
45.0	3.744	3.067	2.649	2.384	2.180	2.097	2.020
47.5	3.571	2.951	2.570	2.332	2.153	2.081	2.017
50.0	3.417	2.847	2.501	2.287	2.130	2.068	2.014

Table of n satisfying the equation B(c,n,p) = P for c = 3

100p	P = 0.001	0.005	0.010	0.025	0.050	0.100	0.200	0.500
0.1	13060	10980	10050	8765	7752	6679	5514	3672
0.5	2608	2192	2006	1751	1549	1335	1102	734.1
1.0	1302	1094	1001	873.9	773.0	666.3	550.3	366.9
1.5	865.8	727.9	666.2	581.6	514.6	443.6	366.5	244.5
2.0	648.1	544.9	498.8	435.5	385.3	332.2	274.5	183.3
3.5	368.2	309.7	283.5	247.6	219.2	189.1	156.4	104.6
5.0	256.2	215.6	197.4	172.5	152.7	131.8	109.1	73.10
6.0	212.7	179.0	163.9	143.3	126.9	109.5	90.65	60.86
7.0	181.6	152.8	140.0	122.4	108.4	93.58	77.52	52.12
8.5	148.6	125.1	114.6	100.3	88.81	76.73	63.61	42.86
10.0	125.5	105.8	96.87	84.74	75.12	64.94	53.87	36.38
12.5	99.35	83.74	76.76	67.19	59.60	51.57	42.84	29.04
15.0	81.91	69.08	63.34	55.48	49.25	42.65	35.48	24.14
17.5	69.44	58.60	53.76	47.12	41.85	36.28	30.22	20.65
20.0	60.08	50.74	46.56	40.84	36.30	31.49	26.27	18.02
22.5	52.80	44.62	40.96	35.95	31.98	27.77	23.20	15.98
25.0	46.96	39.72	36.48	32.04	28.52	24.79	20.74	14.35
27.5	42.18	35.70	32.80	28.83	25.68	22.35	18.73	13.01
30.0	38.19	32.35	29.73	26.16	23.32	20.31	17.05	11.90
32.5	34.81	29.51	27.14	23.89	21.31	18.59	15.63	10.96
35.0	31.90	27.07	24.90	21.94	19.59	17.11	14.41	10.15
37.5	29.38	24.95	22.97	20.25	18.10	15.82	13.35	9.451
40.0	27.16	23.09	21.26	18.77	16.79	14.69	12.42	8.838
42.5	25.20	21.44	19.76	17.46	15.63	13.70	11.60	8.298
45.0	23.46	19.98	18.42	16.29	14.60	12.81	10.87	7.817
47.5	21.89	18.66	17.21	15.24	13.67	12.01	10.22	7.387
50.0	20.47	17.47	16.13	14.29	12.83	11.29	9.621	7.000

100p	P = 0.800	0.900	0.950	0.975	0.990	0.995	0.999
0.1	2297	1745	1367	1090	824.3	673.3	429.8
0.5	459.7	349.5	274.0	218.9	165.7	135.6	87.00
1.0	230.0	175.1	137.4	109.9	83.42	68.39	44.15
1.5	153.4	116.9	91.91	73.62	55.98	45.99	29.87
2.0	115.1	87.87	69.14	55.46	42.26	34.79	22.74
3.5	65.98	50.49	39.87	32.11	24.63	20.40	13.58
5.0	46.29	35.54	28.16	22.78	17.59	14.65	9.936
6.0	38.64	29.72	23.61	19.15	14.85	12.42	8.524
7.0	33.17	25.57	20.36	16.56	12.90	10.83	7.520
8.5	27.39	21.18	16.93	13.83	10.84	9.160	6.465
10.0	23.34	18.11	14.52	11.91	9.406	7.991	5.734
12.5	18.75	14.63	11.80	9.755	7.783	6.674	4.921
15.0	15.69	12.31	10.00	8.319	6.709	5.807	4.395
17.5	13.51	10.66	8.714	7.299	5.949	5.197	4.033
20.0	11.88	9.426	7.752	6.539	5.386	4.747	3.775
22.5	10.61	8.468	7.008	5.953	4.954	4.405	3.586
25.0	9.597	7.703	6.416	5.488	4.615	4.139	3.445
27.5	8.769	7.080	5.935	5.112	4.343	3.928	3.339
30.0	8.080	6.563	5.537	4.803	4.122	3.759	3.259
32.5	7.498	6.127	5.203	4.545	3.939	3.622	3.199
35.0	7.001	5.756	4.920	4.328	3.788	3.510	3.153
37.5	6.572	5.437	4.678	4.143	3.662	3.418	3.119
40.0	6.197	5.160	4.469	3.986	3.556	3.343	3.092
42.5	5.868	4.917	4.287	3.850	3.467	3.282	3.072
45.0	5.576	4.703	4.128	3.733	3.392	3.231	3.057
47.5	5.316	4.514	3.988	3.631	3.329	3.190	3.045
50.0	5.084	4.345	3.866	3.543	3.275	3.156	3.036

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