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SET B

UNIVERSITI KUALA LUMPUR
Malaysia France Institute

FINAL EXAMINATION

JULY 2010 SESSION

SUBJECT CODE	:	FKB 24402 / FKB 33402
SUBJECT TITLE	:	ENGINEERING MATHEMATICS 4
LEVEL	:	BACHELOR
TIME / DURATION	:	12.30pm – 2.30pm (2 HOURS)
DATE	:	09 NOVEMBER 2010

INSTRUCTIONS TO CANDIDATES

1. Please read the instructions given in the question paper CAREFULLY.
2. This question paper is printed on both sides of the paper.
3. Please write your answers on the answer booklet provided.
4. Answer should be written in blue or black ink except for sketching, graphic and illustration.
5. This question paper consists of FIVE (5) questions. Answer FOUR (4) questions only.
6. Answer all questions in English.

THERE ARE 3 PAGES OF QUESTIONS AND 5 PAGES OF FORMULA, EXCLUDING THIS PAGE.

(Total: 60 marks)

INSTRUCTION: There are five questions. ANSWER only FOUR (4) questions.

Please use the answer booklet provided.

Question 1 (15 Marks)

(a) (i) What is **statistics**?

(2 marks)

(ii) What is the difference between **sample** and **population**? Give 1 example.

(2 marks)

(b) Based on past experience, the probability of worker error on a certain production line is one out of 10, the probability that an accident will occur when there is a worker error is 0.9, and the probability that an accident will occur when there is no worker error is 0.1. With the aid of a tree diagram, find the probability that there is a worker error if an accident occurred.

(7 marks)

(c) A manufacturer of electronic components claims that only 3% of its components is defective. A random sample of 200 components indicates 10 defectives. Use $\alpha = 0.05$ to test the hypothesis that the percentage of defective components is 3%.

(4 marks)

Question 2 (15 Marks)

(a) Find the first quartile, third quartile and inter-quartile range for the data in the stem and leaf plot below:

Stem	Leaf
1	4 5 7
2	0 2 6 6 7
3	8 8 9
4	5 6 9 9

Key: 3 | 8 means 38 cm

(3 marks)

(b) Given that $f(x) = \frac{x}{15}$ for $x = 0, 1, 2, 3, 4, 5$. Check whether $f(x)$ is a probability mass function of discrete random variable X.

(4 marks)

(c) It is believed that the annual repair cost for a car is related to its age. A sample of 10 cars revealed the results in the following table:

Age in years, X	2	3	1	7	6	8	4	1	2	5
Repair cost (RM), y	72	99	65	138	170	140	114	83	101	110

Use the least square principle to determine the equation of linear regression.

(8 marks)

Question 3 (15 Marks)

(a) Refer to the data in Table 1. Calculate the variance.

157	133	189	215	208	139	152
167	202	197	124	239	191	169

(4 marks)

(b) We flip a coin 3 times and let X be the number of heads obtained. What is the value of $E(X)$? (Hint: $E(X) = \sum xP(X = x)$)

(6 marks)

(c) Suppose random samples of 49 Silver Tyres and 36 Dun Tyres were selected. The sample mean mileage the tyre lasts for Silver Tyres is 119000 km and the standard deviation is 7700 km and the sample mean mileage for Dun Tyres is 118000 km and the standard deviation is 6000 km. Compute a 90% confidence interval on the difference of the two population means.

(5 marks)

Question 4 (15 Marks)

(a) According to a survey, the mean calorie intake of males 20 – 40 years old is $\mu = 2700$ with standard deviation $\sigma = 70.7$. If a nutritionist conducts an analysis using a simple random sample of $n = 50$, what is the probability that it would result in a sample mean of 2692 or less?

(5 marks)

(b) Suppose that we check for clarity in 50 locations in Lake Tahoe and discover that the average depth of clarity of the lake is 14 feet. Suppose that we know that the standard deviation for the entire lake's depth is 2 feet. What can we conclude about the average clarity of the lake with a 95% confidence level?

(5 marks)

(c) A manufacturer of transistors claims that its transistors will last an average of 2100 hours. To maintain this average, 50 transistors are tested each month. What conclusions should be drawn from a sample that has a mean 2140 hours and a sample standard deviation 87 hours. Assume that distribution of the lifetime of the transistors is normal. Use $\alpha = 0.01$.

(5 marks)

Question 5 (15 Marks)

(a) Conduct hypothesis testing using the following information:

$H_0 : \mu = 83$ versus $H_1 : \mu \neq 83$, $n = 35, \overline{X} = 80.5$, $\sigma = 15, \alpha = 0.10$

(8 marks)

(b) A binomial random variable X has mean 3 and variance $\frac{51}{20}$. Find the value of n and p. Hence, find $P(X = 3)$.

(5 marks)

(c) Write down 2 of the characteristics of correlation coefficient, r.

(2 marks)

END OF QUESTION

FORMULA

Confidence Intervals for the Difference Between Two Means	Small-Sample Confidence Intervals for the Difference Between Two Means
$\overline{X}-\overline{Y}\pm z_{\alpha/2}\sqrt{\frac{\sigma_X^2}{n_X}+\frac{\sigma_Y^2}{n_Y}}$	$\overline{X}-\overline{Y}\pm t_{v,\alpha/2}\sqrt{\frac{s_X^2}{n_X}+\frac{s_Y^2}{n_Y}}$
Pooled standard deviation	**Confidence Intervals for the Difference Between Two Proportions**
$s_p=\sqrt{\frac{(n_X-1)s_X^2+(n_Y-1)s_Y^2}{n_X+n_Y-2}}$	$\tilde{p}_X-\tilde{p}_Y\pm z_{\alpha/2}\sqrt{\frac{\tilde{p}_X(1-\tilde{p}_X)}{\tilde{n}_X}+\frac{\tilde{p}_Y(1-\tilde{p}_Y)}{\tilde{n}_Y}}$
The number of degrees of freedom (small-sample confidence intervals)	**Confidence Intervals for the Difference Between Two Proportions (adjustments)**
$v=\frac{\left(\frac{s_X^2}{n_X}+\frac{s_Y^2}{n_Y}\right)^2}{\frac{(s_X^2/n_X)^2}{n_X-1}+\frac{(s_Y^2/n_Y)^2}{n_Y-1}}$	$\tilde{n}_X=n_X+2$ $\quad\tilde{n}_Y=n_Y+2$ $\tilde{p}_X=(X+1)/\tilde{n}_X$ $\quad\tilde{p}_Y=(Y+1)/\tilde{n}_Y$
Confidence Intervals for the Difference Between Two Means	**Confidence Intervals for Proportions (adjustments)**
$\overline{X}-\overline{Y}\pm t_{n_X+n_Y-2,\alpha/2}s_p\sqrt{\frac{1}{n_X}+\frac{1}{n_Y}}$	$\tilde{n}=n+4$ $\quad\tilde{p}=\frac{X+2}{\tilde{n}}$
Large-Sample Confidence Intervals for a Population Mean	**Small-Sample Confidence Intervals for a Population Mean**
$\overline{X}\pm z_{\alpha/2}\frac{s}{\sqrt{n}}$	$\overline{X}\pm t_{n-1,\alpha/2}\frac{s}{\sqrt{n}}$

The Binomial Distribution

$$p(x)=P(X=x)=\begin{cases}\frac{n!}{x!(n-x)!}p^x(1-p)^{n-x} & x=0,1,...,n\\ 0 & \text{otherwise}\end{cases}$$

The Poisson Distribution

$$P(X=x)=\begin{cases}\frac{e^{-\lambda}\lambda^x}{x!} & \text{if x is a non-negative integer}\\ 0 & \text{otherwise}\end{cases}$$

The Normal Distribution	Sample Variance
$f(x)=\frac{1}{\sigma\sqrt{2\pi}}e^{-(x-\mu)^2/2\sigma^2}$	$s^2=\frac{1}{n-1}\left(\sum_{i=1}^{n}X_i^2-n\overline{X}^2\right)$

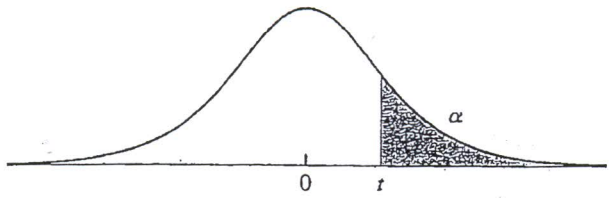
Test Statistic (Small-Sample)	Test Statistic (Small-Sample Tests)
$t = \dfrac{\overline{X} - \mu}{s/\sqrt{n}}$	$t = \dfrac{(\overline{X} - \overline{Y}) - (\mu_X - \mu_Y)}{\sqrt{s_X^2/n_X + s_Y^2/n_Y}}$
Pooled Proportion (Test for the Difference Between Two Proportions)	**Test Statistic (Two Proportions)**
$\hat{p} = \dfrac{X+Y}{n_X+n_Y} \qquad \hat{p}_X = \dfrac{X}{n_X} \qquad \hat{p}_Y = \dfrac{Y}{n_Y}$	$z = \dfrac{\hat{p}_X - \hat{p}_Y}{\sqrt{\hat{p}(1-\hat{p})\left(\dfrac{1}{n_X} + \dfrac{1}{n_Y}\right)}}$
Standard Unit	**z-score (CLT)**
$z = \dfrac{X - \mu}{\sigma}$	$z = \dfrac{\overline{X} - \mu_0}{\sigma/\sqrt{n}}$
Test Statistic (Small-Sample with Equal Variances)	**Confidence Interval for Proportions**
$t = \dfrac{(\overline{X} - \overline{Y}) - \Delta_0}{s_p\sqrt{1/n_X + 1/n_Y}}$	$\tilde{p} \pm z_{\alpha/2}\sqrt{\dfrac{\tilde{p}(1-\tilde{p})}{\tilde{n}}}$
Test Statistic (One proportion)	**Intercept**
$z^* = \dfrac{\overline{p} - p_0}{\sqrt{p_0(1-p_0)/n}}$	$\hat{\beta}_0 = \overline{Y} - \hat{\beta}_1\overline{X}$
Slope	**Test Statistic (Large Sample Tests)**
$\hat{\beta}_1 = \dfrac{\sum xy - n\overline{X}\,\overline{Y}}{\sum x^2 - n\overline{X}^2}$	$z = \dfrac{(\overline{X} - \overline{Y}) - (\mu_X - \mu_Y)}{\sqrt{s_X^2/n_X + s_Y^2/n_Y}}$

Areas Under the Normal Curve

Z	Cum p	Tail p	Z	Cum p	Tail p	Z	Cum p	Tail p	Z	Cum p	Tail p	Z	Cum p	Tail p
0.00	0.5000	0.5000	0.40	0.6554	0.3446	0.80	0.7881	0.2119	1.20	0.8849	0.1151	1.60	0.9452	0.0548
0.01	0.5040	0.4960	0.41	0.6591	0.3409	0.81	0.7910	0.2090	1.21	0.8869	0.1131	1.61	0.9463	0.0537
0.02	0.5080	0.4920	0.42	0.6628	0.3372	0.82	0.7939	0.2061	1.22	0.8888	0.1112	1.62	0.9474	0.0526
0.03	0.5120	0.4880	0.43	0.6664	0.3336	0.83	0.7967	0.2033	1.23	0.8907	0.1093	1.63	0.9484	0.0516
0.04	0.5160	0.4840	0.44	0.6700	0.3300	0.84	0.7995	0.2005	1.24	0.8925	0.1075	1.64	0.9495	0.0505
0.05	0.5199	0.4801	0.45	0.6736	0.3264	0.85	0.8023	0.1977	1.25	0.8944	0.1056	**1.65**	**0.9505**	**0.0495**
0.06	0.5239	0.4761	0.46	0.6772	0.3228	0.86	0.8051	0.1949	1.26	0.8962	0.1038	1.66	0.9515	0.0485
0.07	0.5279	0.4721	0.47	0.6808	0.3192	0.87	0.8078	0.1922	1.27	0.8980	0.1020	1.67	0.9525	0.0475
0.08	0.5319	0.4681	0.48	0.6844	0.3156	0.88	0.8106	0.1894	1.28	0.8997	0.1003	1.68	0.9535	0.0465
0.09	0.5359	0.4641	0.49	0.6879	0.3121	0.89	0.8133	0.1867	1.29	0.9015	0.0985	1.69	0.9545	0.0455
0.10	0.5398	0.4602	0.50	0.6915	0.3085	0.90	0.8159	0.1841	1.30	0.9032	0.0968	1.70	0.9554	0.0446
0.11	0.5438	0.4562	0.51	0.6950	0.3050	0.91	0.8186	0.1814	1.31	0.9049	0.0951	1.71	0.9564	0.0436
0.12	0.5478	0.4522	0.52	0.6985	0.3015	0.92	0.8212	0.1788	1.32	0.9066	0.0934	1.72	0.9573	0.0427
0.13	0.5517	0.4483	0.53	0.7019	0.2981	0.93	0.8238	0.1762	1.33	0.9082	0.0918	1.73	0.9582	0.0418
0.14	0.5557	0.4443	0.54	0.7054	0.2946	0.94	0.8264	0.1736	1.34	0.9099	0.0901	1.74	0.9591	0.0409
0.15	0.5596	0.4404	0.55	0.7088	0.2912	0.95	0.8289	0.1711	1.35	0.9115	0.0885	1.75	0.9599	0.0401
0.16	0.5636	0.4364	0.56	0.7123	0.2877	0.96	0.8315	0.1685	1.36	0.9131	0.0869	1.76	0.9608	0.0392
0.17	0.5675	0.4325	0.57	0.7157	0.2843	0.97	0.8340	0.1660	1.37	0.9147	0.0853	1.77	0.9616	0.0384
0.18	0.5714	0.4286	0.58	0.7190	0.2810	0.98	0.8365	0.1635	1.38	0.9162	0.0838	1.78	0.9625	0.0375
0.19	0.5753	0.4247	0.59	0.7224	0.2776	0.99	0.8389	0.1611	1.39	0.9177	0.0823	1.79	0.9633	0.0367
0.20	0.5793	0.4207	0.60	0.7257	0.2743	1.00	0.8413	0.1587	1.40	0.9192	0.0808	1.80	0.9641	0.0359
0.21	0.5832	0.4168	0.61	0.7291	0.2709	1.01	0.8438	0.1562	1.41	0.9207	0.0793	1.81	0.9649	0.0351
0.22	0.5871	0.4129	0.62	0.7324	0.2676	1.02	0.8461	0.1539	1.42	0.9222	0.0778	1.82	0.9656	0.0344
0.23	0.5910	0.4090	0.63	0.7357	0.2643	1.03	0.8485	0.1515	1.43	0.9236	0.0764	1.83	0.9664	0.0336
0.24	0.5948	0.4052	0.64	0.7389	0.2611	1.04	0.8508	0.1492	1.44	0.9251	0.0749	1.84	0.9671	0.0329
0.25	0.5987	0.4013	0.65	0.7422	0.2578	1.05	0.8531	0.1469	1.45	0.9265	0.0735	1.85	0.9678	0.0322
0.26	0.6026	0.3974	0.66	0.7454	0.2546	1.06	0.8554	0.1446	1.46	0.9279	0.0721	1.86	0.9686	0.0314
0.27	0.6064	0.3936	0.67	0.7486	0.2514	1.07	0.8577	0.1423	1.47	0.9292	0.0708	1.87	0.9693	0.0307
0.28	0.6103	0.3897	0.68	0.7517	0.2483	1.08	0.8599	0.1401	1.48	0.9306	0.0694	1.88	0.9699	0.0301
0.29	0.6141	0.3859	0.69	0.7549	0.2451	1.09	0.8621	0.1379	1.49	0.9319	0.0681	1.89	0.9706	0.0294
0.30	0.6179	0.3821	0.70	0.7580	0.2420	1.10	0.8643	0.1357	1.50	0.9332	0.0668	1.90	0.9713	0.0287
0.31	0.6217	0.3783	0.71	0.7611	0.2389	1.11	0.8665	0.1335	1.51	0.9345	0.0655	1.91	0.9719	0.0281
0.32	0.6255	0.3745	0.72	0.7642	0.2358	1.12	0.8686	0.1314	1.52	0.9357	0.0643	1.92	0.9726	0.0274
0.33	0.6293	0.3707	0.73	0.7673	0.2327	1.13	0.8708	0.1292	1.53	0.9370	0.0630	1.93	0.9732	0.0268
0.34	0.6331	0.3669	0.74	0.7704	0.2296	1.14	0.8729	0.1271	1.54	0.9382	0.0618	1.94	0.9738	0.0262
0.35	0.6368	0.3632	0.75	0.7734	0.2266	1.15	0.8749	0.1251	1.55	0.9394	0.0606	1.95	0.9744	0.0256
0.36	0.6406	0.3594	0.76	0.7764	0.2236	1.16	0.8770	0.1230	1.56	0.9406	0.0594	**1.96**	**0.9750**	**0.0250**
0.37	0.6443	0.3557	0.77	0.7794	0.2206	1.17	0.8790	0.1210	1.57	0.9418	0.0582	1.97	0.9756	0.0244
0.38	0.6480	0.3520	0.78	0.7823	0.2177	1.18	0.8810	0.1190	1.58	0.9429	0.0571	1.98	0.9761	0.0239
0.39	0.6517	0.3483	0.79	0.7852	0.2148	1.19	0.8830	0.1170	1.59	0.9441	0.0559	1.99	0.9767	0.0233

Z	Cum p	Tail p
2.00	0.9772	0.0228
2.01	0.9778	0.0222
2.02	0.9783	0.0217
2.03	0.9788	0.0212
2.04	0.9793	0.0207
2.05	0.9798	0.0202
2.06	0.9803	0.0197
2.07	0.9808	0.0192
2.08	0.9812	0.0188
2.09	0.9817	0.0183
2.10	0.9821	0.0179
2.11	0.9826	0.0174
2.12	0.9830	0.0170
2.13	0.9834	0.0166
2.14	0.9838	0.0162
2.15	0.9842	0.0158
2.16	0.9846	0.0154
2.17	0.9850	0.0150
2.18	0.9854	0.0146
2.19	0.9857	0.0143
2.20	0.9861	0.0139
2.21	0.9864	0.0136
2.22	0.9868	0.0132
2.23	0.9871	0.0129
2.24	0.9875	0.0125
2.25	0.9878	0.0122
2.26	0.9881	0.0119
2.27	0.9884	0.0116
2.28	0.9887	0.0113
2.29	0.9890	0.0110
2.30	0.9893	0.0107
2.31	0.9896	0.0104
2.32	0.9898	0.0102
2.33	**0.9901**	**0.0099**
2.34	0.9904	0.0096
2.35	0.9906	0.0094
2.36	0.9909	0.0091
2.37	0.9911	0.0089
2.38	0.9913	0.0087
2.39	0.9916	0.0084
2.40	0.9918	0.0082
2.41	0.9920	0.0080
2.42	0.9922	0.0078
2.43	0.9925	0.0075
2.44	0.9927	0.0073
2.45	0.9929	0.0071
2.46	0.9931	0.0069
2.47	0.9932	0.0068
2.48	0.9934	0.0066
2.49	0.9936	0.0064
2.50	0.9938	0.0062
2.51	0.9940	0.0060
2.52	0.9941	0.0059
2.53	0.9943	0.0057
2.54	0.9945	0.0055
2.55	0.9946	0.0054
2.56	0.9948	0.0052
2.57	0.9949	0.0051
2.58	**0.9951**	**0.0049**
2.59	0.9952	0.0048
2.60	0.9953	0.0047
2.61	0.9955	0.0045
2.62	0.9956	0.0044
2.63	0.9957	0.0043
2.64	0.9959	0.0041
2.65	0.9960	0.0040
2.66	0.9961	0.0039
2.67	0.9962	0.0038
2.68	0.9963	0.0037
2.69	0.9964	0.0036
2.70	0.9965	0.0035
2.71	0.9966	0.0034
2.72	0.9967	0.0033
2.73	0.9968	0.0032
2.74	0.9969	0.0031
2.75	0.9970	0.0030
2.76	0.9971	0.0029
2.77	0.9972	0.0028
2.78	0.9973	0.0027
2.79	0.9974	0.0026
2.80	0.9974	0.0026
2.81	0.9975	0.0025
2.82	0.9976	0.0024
2.83	0.9977	0.0023
2.84	0.9977	0.0023
2.85	0.9978	0.0022
2.86	0.9979	0.0021
2.87	0.9979	0.0021
2.88	0.9980	0.0020
2.89	0.9981	0.0019
2.90	0.9981	0.0019
2.91	0.9982	0.0018
2.92	0.9982	0.0018
2.93	0.9983	0.0017
2.94	0.9984	0.0016
2.95	0.9984	0.0016
2.96	0.9985	0.0015
2.97	0.9985	0.0015
2.98	0.9986	0.0014
2.99	0.9986	0.0014
3.00	0.9987	0.0013
3.01	0.9987	0.0013
3.02	0.9987	0.0013
3.03	0.9988	0.0012
3.04	0.9988	0.0012
3.05	0.9989	0.0011
3.06	0.9989	0.0011
3.07	0.9989	0.0011
3.08	0.9990	0.0010
3.09	0.9990	0.0010
3.10	0.9990	0.0010
3.11	0.9991	0.0009
3.12	0.9991	0.0009
3.13	0.9991	0.0009
3.14	0.9992	0.0008
3.15	0.9992	0.0008
3.16	0.9992	0.0008
3.17	0.9992	0.0008
3.18	0.9993	0.0007
3.19	0.9993	0.0007
3.20	0.9993	0.0007
3.21	0.9993	0.0007
3.22	0.9994	0.0006
3.23	0.9994	0.0006
3.24	0.9994	0.0006
3.25	0.9994	0.0006
3.26	0.9994	0.0006
3.27	0.9995	0.0005
3.28	0.9995	0.0005
3.29	0.9995	0.0005
3.30	0.9995	0.0005
3.31	0.9995	0.0005
3.32	0.9995	0.0005
3.33	0.9996	0.0004
3.34	0.9996	0.0004
3.35	0.9996	0.0004
3.36	0.9996	0.0004
3.37	0.9996	0.0004
3.38	0.9996	0.0004
3.39	0.9997	0.0003
3.40	0.9997	0.0003
3.41	0.9997	0.0003
3.42	0.9997	0.0003
3.43	0.9997	0.0003
3.44	0.9997	0.0003
3.45	0.9997	0.0003
3.46	0.9997	0.0003
3.47	0.9997	0.0003
3.48	0.9997	0.0003
3.49	0.9998	0.0002
3.50	0.9998	0.0002
3.60	0.9998	0.0002
3.70	0.9999	0.0001
3.80	0.9999	0.0001
3.90	1.0000	0.0000

TABLE Upper percentage points for the Student's t distribution



	α								
ν	0.40	0.25	0.10	0.05	0.025	0.01	0.005	0.001	0.0005
1	0.325	1.000	3.078	6.314	12.706	31.821	63.657	318.309	636.619
2	0.289	0.816	1.886	2.920	4.303	6.965	9.925	22.327	31.599
3	0.277	0.765	1.638	2.353	3.182	4.541	5.841	10.215	12.924
4	0.271	0.741	1.533	2.132	2.776	3.747	4.604	7.173	8.610
5	0.267	0.727	1.476	2.015	2.571	3.365	4.032	5.893	6.869
6	0.265	0.718	1.440	1.943	2.447	3.143	3.707	5.208	5.959
7	0.263	0.711	1.415	1.895	2.365	2.998	3.499	4.785	5.408
8	0.262	0.706	1.397	1.860	2.306	2.896	3.355	4.501	5.041
9	0.261	0.703	1.383	1.833	2.262	2.821	3.250	4.297	4.781
10	0.260	0.700	1.372	1.812	2.228	2.764	3.169	4.144	4.587
11	0.260	0.697	1.363	1.796	2.201	2.718	3.106	4.025	4.437
12	0.259	0.695	1.356	1.782	2.179	2.681	3.055	3.930	4.318
13	0.259	0.694	1.350	1.771	2.160	2.650	3.012	3.852	4.221
14	0.258	0.692	1.345	1.761	2.145	2.624	2.977	3.787	4.140
15	0.258	0.691	1.341	1.753	2.131	2.602	2.947	3.733	4.073
16	0.258	0.690	1.337	1.746	2.120	2.583	2.921	3.686	4.015
17	0.257	0.689	1.333	1.740	2.110	2.567	2.898	3.646	3.965
18	0.257	0.688	1.330	1.734	2.101	2.552	2.878	3.610	3.922
19	0.257	0.688	1.328	1.729	2.093	2.539	2.861	3.579	3.883
20	0.257	0.687	1.325	1.725	2.086	2.528	2.845	3.552	3.850
21	0.257	0.686	1.323	1.721	2.080	2.518	2.831	3.527	3.819
22	0.256	0.686	1.321	1.717	2.074	2.508	2.819	3.505	3.792
23	0.256	0.685	1.319	1.714	2.069	2.500	2.807	3.485	3.768
24	0.256	0.685	1.318	1.711	2.064	2.492	2.797	3.467	3.745
25	0.256	0.684	1.316	1.708	2.060	2.485	2.787	3.450	3.725
26	0.256	0.684	1.315	1.706	2.056	2.479	2.779	3.435	3.707
27	0.256	0.684	1.314	1.703	2.052	2.473	2.771	3.421	3.690
28	0.256	0.683	1.313	1.701	2.048	2.467	2.763	3.408	3.674
29	0.256	0.683	1.311	1.699	2.045	2.462	2.756	3.396	3.659
30	0.256	0.683	1.310	1.697	2.042	2.457	2.750	3.385	3.646
35	0.255	0.682	1.306	1.690	2.030	2.438	2.724	3.340	3.591
40	0.255	0.681	1.303	1.684	2.021	2.423	2.704	3.307	3.551
60	0.254	0.679	1.296	1.671	2.000	2.390	2.660	3.232	3.460
120	0.254	0.677	1.289	1.658	1.980	2.358	2.617	3.160	3.373
∞	0.253	0.674	1.282	1.645	1.960	2.326	2.576	3.090	3.291