

STATISTICS INDIVIDUAL TEST-FEBRUARY REGIONAL 2005

1. If a linear regression analysis was done to find the relationship between horsepower and price of automobiles and the correlation was found to be $r = .92$, what percent of the variability in price can be explained by the linear relationship with horsepower?(Round to nearest percent)
 - A. 92%
 - B. 96%
 - C. 85%
 - D. Need more information
 - E. None of the above

2. Which of the methods below is a generally accepted method for determining the existence of high outliers?
 - A. More than 1.5 IQR'S above the median
 - B. More than 1.5 IQR'S above the mean
 - C. More than one standard deviation above the mean
 - D. More than 1.5 IQR'S above quartile three
 - E. None of the above

3. A set consists of 4 numbers. The largest value is 210 and the range is 70. Which of the following statements must be true?
 - A. The median is the mean of the second and third numbers if the set is arranged in ascending order.
 - B. The mean is less than 190
 - C. The mean is greater than 160
 - D. The median is greater 140
 - E. The median is less than 210

4. With respect to Binomial and Geometric distributions, which of the below statements is false?
 - A. Both have only two outcomes
 - B. Both require each trial or observation to be independent from the rest
 - C. Both have a fixed number of trials or observations
 - D. Both have constant probability of success
 - E. All of these statements are true

5. If you were to increase the sample size by a factor of 9, what would happen to the length of the confidence interval?
 - A. Cannot be answered without knowing the exact sample size
 - B. It would be 1/9 as long as the original
 - C. It would be 1/3 as long as the original
 - D. Nothing, since sample size doesn't affect the length of confidence intervals
 - E. It depends on the confidence level being used.

6. Given the probabilities $P(A)=.4$ and $P(B)=.32$, what is the probability of the union $P(A \cup B)$, if A and B are independent?(Round to two decimals)
- A. .72
 - B. .12
 - C. .59
 - D. Need more information
 - E. None of the above

7. A least squares regression was formed with the variables Income and Assets. Below is the computer printout of this regression. What is the equation of the least squares regression?

PRED	COEF	STDEV
Constant	-.265	12.78
Assets	6.31	1.462

- A. $Assets = -.265Income + 6.31$
- B. $Assets = 6.31Income - .265$
- C. $Income = -.265 + 6.31Assets$
- D. $Income = 6.31 - .265Assets$
- E. None of the above

8. A least squares regression line was formed to use a cost of living index for each state to predict the average salary for a teacher for each state. The mean of the cost of living index is 100 with a standard deviation of 12.5 and the mean teacher salary is \$45,500 with a standard deviation of \$4000. The correlation coefficient was .94. What is the slope of the least squares line?(Round answer to three decimals)

- A. .003
- B. 455.000
- C. 282.752
- D. 300.800
- E. Need more information to calculate slope

9. Which statement below is false as it relates to the Central Limit Theorem?

- A. The mean of the population equals the mean of the sampling distribution
- B. The standard deviation of the sampling distribution is equal to the standard deviation of the population
- C. As the sample size grows the sampling distribution gets more and more normal
- D. No matter what the shape of the population, the sampling distribution will be approximately normal if the sample is large
- E. All of the above are true

10. For the following probability distribution, find the standard deviation. (Round to three decimals)

X	1	2	3	4	5
P(X)	.17	.24	.23	.26	.1

- A. This is not a valid probability distribution so standard deviation can't be calculated
- B. 2.820
- C. 1.679
- D. 1.566
- E. 1.251

11. In a large population of Mu Alpha Theta competitors, 30% of the competitors have experienced feelings of math anxiety(CHOKING). If you take a random sample of 40 students from this population, the probability that exactly 12 students have experienced math anxiety is?(Round answer to three decimals)

- A. .137
- B. .577
- C. 2.445×10^{-11}
- D. 1.769×10^{-7}
- E. None of the above

12. Suppose A and B are independent random variables with $E(A)=100$, standard deviation(A)=5, $E(B)=120$, and standard deviation(B)=12.

What are the expected value and standard deviation of the random variable A+B?

- A. More information is needed
- B. $E(A+B)=110$ and $\text{stddev.}(A+B)=17$
- C. $E(A+B)=220$ and $\text{stddev.}(A+B)=13$
- D. $E(A+B)=110$ and $\text{stddev.}(A+B)=13$
- E. $E(A+B)=220$ and $\text{stddev.}(A+B)=17$

13. If you went out and polled adult Americans about whether or not they supported a constitutional amendment defining marriage as between a man and a woman, how large a sample would be needed to guarantee that you are within a margin of error of 3% with 99 percent confidence.

- A. There are no guarantee's in statistics
- B. 715
- C. 716
- D. 1844
- E. 1843

14. You have measured the blood pressure of a random sample of 40 students from your local school district. A 99% confidence interval for the mean blood pressure for the students of this district is (118, 132). Which of the following statements gives a valid interpretation of this interval?

- A. If the procedure were repeated many times, 99% of the sample means would be between 118 and 132
- B. The probability that the population mean blood pressure is between 118 and 132 is .99
- C. 99% of the sample of students have a blood pressure between 118 and 132
- D. 99% of the population of students have a blood pressure between 118 and 132
- E. If the procedure were repeated many times, 99% of the resulting intervals would contain the population mean blood pressure

15. Victorious Vic otherwise known as Diceman, carries a pair of dice that are marked differently. One has two 3's, two 4's, and two 5's. The other has one 1, one 3, two 4's, one 5 and one 6. What is the probability if you roll both die of getting doubles or a sum of 8?

- A. 4/9
- B. 2/9
- C. 1/3
- D. 1/6
- E. 5/18

16. 30% of all freshman Mu competitors think they can trisect an angle. If you were to randomly select freshman Mu competitors, what is the probability that it will take at least 4 before you get the first who thinks they can trisect an angle?(Round to three decimals)

- A. More information is needed
- B. .992
- C. .343
- D. .657
- E. .240

17. A random sample of Yugo's was taken on several used car dealers' lots. Least squares regression was formed using the ages(in years) to predict prices(in thousands of dollars). Given the computer printout below, what is the correlation?(Round answer to three decimals)

Predictor	Coeff	Stdev
Constant	14.28	2.71
Age	-1.62	3.14

R-sq=81.3%

- A. .902
- B. .813
- C. 81.300
- D. 90.200
- E. None of the above

18. The mean SAT score for applicants to the University of Georgia is 730 with a standard deviation of 190. Suppose only applicants with scores above 800 are considered. What percent of the applicants considered have scores below 900? Assume the scores are normally distributed and round answer to one decimal.

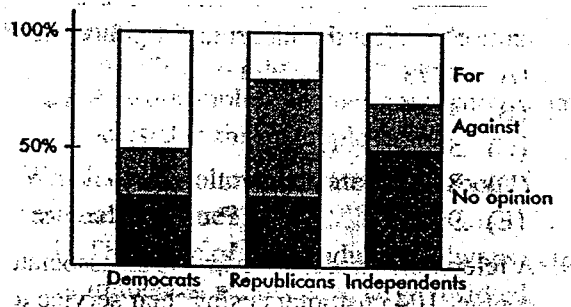
- A. 18.5%
- B. 17.1%
- C. 35.6%
- D. 47.9%
- E. None of the above

19. Five pairs of data are used in determining a regression line $y = 6x - 5$. If the five values of the independent variable are 58, 92, 61, 75, and 84, what is the mean of the five values of the dependent variable?

- A. The mean cannot be determined from the given information
- B. 74
- C. 444
- D. 439
- E. 69

20. A particular ballot initiative to increase the sales tax in Alachua county was recently rejected. Exit polling showed the following segmented bar chart among people with different party affiliations. Based on the poll, which of the following is the greatest?

- A. Answer is impossible to determine without additional information
- B. Number of independents with no opinions
- C. Number of republicans against increase
- D. Number of democrats for increase
- E. B, C, and D are all true



21. If $X \cup Y = S$ (sample space), $P(X \cap Y^c) = .25$ and $P(X^c) = .35$, then $P(Y) = ?$
- A. .35
 - B. .4
 - C. .65
 - D. .75
 - E. None of the above
22. You recently went to Wal-Mart and randomly selected six light bulbs and tested them for defects. A master statistician told you the probability all six of the bulbs are defective is .00019. What is the probability that none of the six are defective? (Round to two decimals)
- A. .24
 - B. .19
 - C. 1.00
 - D. .76
 - E. .81
23. To qualify for the Stoneman Douglas math team, you must have a math IQ more than two standard deviations above the mean. Assuming math IQ scores are normally distributed, use the empirical rule to find the probability at least one of seven randomly selected students will qualify for the Stoneman team. (Round answer to three decimals)
- A. .302
 - B. .162
 - C. .838
 - D. .698
 - E. None of the above
24. A survey was conducted to determine the % of Mu Alpha Theta competitors who would like to attend an Ivy league college. The results were stated as 83% with a margin of error of $\pm 4\%$. What is meant by $\pm 4\%$?
- A. Four percent of the population were not surveyed
 - B. It is unlikely that the given sample proportion result could be obtained unless the true percentage was between 79% and 87%
 - C. Between 79% and 87% of the population were surveyed
 - D. In the sample, the percentage of Mu competitors who would like to attend an Ivy league college is between 79% and 87%
 - E. The percentage of the entire population of Mu competitors who would like to attend an Ivy league college is between 79% and 87%
25. If you plotted variables X and Y on their respective axis and saw that Y grew exponentially with respect to X, which transformation would you use to linearize your data.
- A. $\ln Y$
 - B. $\ln X$
 - C. Square Root Y
 - D. Inverse Y
 - E. None would work, fit a quadratic model instead
26. When performing a one sample test for the mean of a population, we use a t-test statistic instead of a z-test when?
- A. The sample size is large
 - B. It is unknown whether or not the population distribution is normal
 - C. When we do not know σ , the standard deviation of the population
 - D. We want to improve our accuracy
 - E. We never perform t-tests on population means

27. Candyman, a known M+M chocolate candy addict, recently made a phone call to Mars Company to ask the distribution by color. Mars claims 30% brown, 20% each of yellow and red and 10% each of orange, green and blue. Candyman, thinking they are lying, took a random sample of 1000 M+M's and got the following results.

Brown	Yellow	Red	Orange	Green	Blue
280	230	190	80	110	110

Candyman carried out a chi-square test, what should he conclude at the $\alpha = .01$ level?

- A. Nothing because all the assumptions to carry out a chi-square test were not satisfied
- B. Reject their claim because the p-value is below .01
- C. Accept their claim because the p-value is below .01
- D. He can conclude nothing because the p-value is above .01
- E. Reject their claim because the p-value is above .01

28. A blood test gives a positive reading for 96% of people who have Frazeritis(addiction to Mu Alpha Theta). Among people who do not have the disease 4% test positive. Suppose 6% of the population has Frazeritis. If a person tests positive, what is the probability the person has the disease?(Round to four decimals)

- A. .0576
- B. .6050
- C. .3950
- D. .0952
- E. None of the above

29. $P(A) = .35$ and the $P(B) = .4$. If $P(A/B) = .28$, what is $P(B/A)$?

- A. .80
- B. .70
- C. .50
- D. .32
- E. .14

30. Given that 5% of the belts made using a certain manufacturing process have a length less than twenty-four inches, while 10% have a length greater than forty-two inches. What is the mean length of the belts? Assume that the lengths have a normal distribution and round your answer to two decimals

- A. Not enough information is provided to answer this question
- B. 34.12
- C. 33.00
- D. 34.64
- E. None of the above

Table entry for z is the probability lying below z .

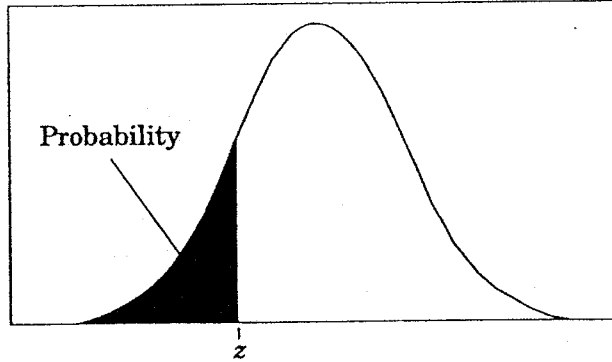


Table A Standard normal probabilities

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
-3.4	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0003	.0002
-3.3	.0005	.0005	.0005	.0004	.0004	.0004	.0004	.0004	.0004	.0003
-3.2	.0007	.0007	.0006	.0006	.0006	.0006	.0006	.0005	.0005	.0005
-3.1	.0010	.0009	.0009	.0009	.0008	.0008	.0008	.0008	.0007	.0007
-3.0	.0013	.0013	.0013	.0012	.0012	.0011	.0011	.0011	.0010	.0010
-2.9	.0019	.0018	.0018	.0017	.0016	.0016	.0015	.0015	.0014	.0014
-2.8	.0026	.0025	.0024	.0023	.0023	.0022	.0021	.0021	.0020	.0019
-2.7	.0035	.0034	.0033	.0032	.0031	.0030	.0029	.0028	.0027	.0026
-2.6	.0047	.0045	.0044	.0043	.0041	.0040	.0039	.0038	.0037	.0036
-2.5	.0062	.0060	.0059	.0057	.0055	.0054	.0052	.0051	.0049	.0048
-2.4	.0082	.0080	.0078	.0075	.0073	.0071	.0069	.0068	.0066	.0064
-2.3	.0107	.0104	.0102	.0099	.0096	.0094	.0091	.0089	.0087	.0084
-2.2	.0139	.0136	.0132	.0129	.0125	.0122	.0119	.0116	.0113	.0110
-2.1	.0179	.0174	.0170	.0166	.0162	.0158	.0154	.0150	.0146	.0143
-2.0	.0228	.0222	.0217	.0212	.0207	.0202	.0197	.0192	.0188	.0183
-1.9	.0287	.0281	.0274	.0268	.0262	.0256	.0250	.0244	.0239	.0233
-1.8	.0359	.0351	.0344	.0336	.0329	.0322	.0314	.0307	.0301	.0294
-1.7	.0446	.0436	.0427	.0418	.0409	.0401	.0392	.0384	.0375	.0367
-1.6	.0548	.0537	.0526	.0516	.0505	.0495	.0485	.0475	.0465	.0455
-1.5	.0668	.0655	.0643	.0630	.0618	.0606	.0594	.0582	.0571	.0559
-1.4	.0808	.0793	.0778	.0764	.0749	.0735	.0721	.0708	.0694	.0681
-1.3	.0968	.0951	.0934	.0918	.0901	.0885	.0869	.0853	.0838	.0823
-1.2	.1151	.1131	.1112	.1093	.1075	.1056	.1038	.1020	.1003	.0985
-1.1	.1357	.1335	.1314	.1292	.1271	.1251	.1230	.1210	.1190	.1170
-1.0	.1587	.1562	.1539	.1515	.1492	.1469	.1446	.1423	.1401	.1379
-0.9	.1841	.1814	.1788	.1762	.1736	.1711	.1685	.1660	.1635	.1611
-0.8	.2119	.2090	.2061	.2033	.2005	.1977	.1949	.1922	.1894	.1867
-0.7	.2420	.2389	.2358	.2327	.2296	.2266	.2236	.2206	.2177	.2148
-0.6	.2743	.2709	.2676	.2643	.2611	.2578	.2546	.2514	.2483	.2451
-0.5	.3085	.3050	.3015	.2981	.2946	.2912	.2877	.2843	.2810	.2776
-0.4	.3446	.3409	.3372	.3336	.3300	.3264	.3228	.3192	.3156	.3121
-0.3	.3821	.3783	.3745	.3707	.3669	.3632	.3594	.3557	.3520	.3483
-0.2	.4207	.4168	.4129	.4090	.4052	.4013	.3974	.3936	.3897	.3859
-0.1	.4602	.4562	.4522	.4483	.4443	.4404	.4364	.4325	.4286	.4247
-0.0	.5000	.4960	.4920	.4880	.4840	.4801	.4761	.4721	.4681	.4641

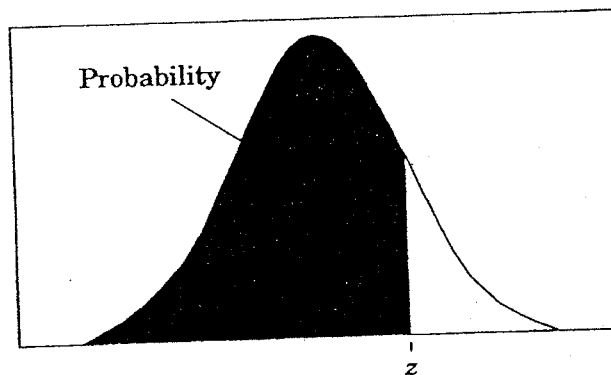


Table entry for z is the probability lying below z .

Table A (Continued)

z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.5000	.5040	.5080	.5120	.5160	.5199	.5239	.5279	.5319	.5359
0.1	.5398	.5438	.5478	.5517	.5557	.5596	.5636	.5675	.5714	.5753
0.2	.5793	.5832	.5871	.5910	.5948	.5987	.6026	.6064	.6103	.6141
0.3	.6179	.6217	.6255	.6293	.6331	.6368	.6406	.6443	.6480	.6517
0.4	.6554	.6591	.6628	.6664	.6700	.6736	.6772	.6808	.6844	.6879
0.5	.6915	.6950	.6985	.7019	.7054	.7088	.7123	.7157	.7190	.7224
0.6	.7257	.7291	.7324	.7357	.7389	.7422	.7454	.7486	.7517	.7549
0.7	.7580	.7611	.7642	.7673	.7704	.7734	.7764	.7794	.7823	.7852
0.8	.7881	.7910	.7939	.7967	.7995	.8023	.8051	.8078	.8106	.8133
0.9	.8159	.8186	.8212	.8238	.8264	.8289	.8315	.8340	.8365	.8389
1.0	.8413	.8438	.8461	.8485	.8508	.8531	.8554	.8577	.8599	.8621
1.1	.8643	.8665	.8686	.8708	.8729	.8749	.8770	.8790	.8810	.8830
1.2	.8849	.8869	.8888	.8907	.8925	.8944	.8962	.8980	.8997	.9015
1.3	.9032	.9049	.9066	.9082	.9099	.9115	.9131	.9147	.9162	.9177
1.4	.9192	.9207	.9222	.9236	.9251	.9265	.9279	.9292	.9306	.9319
1.5	.9332	.9345	.9357	.9370	.9382	.9394	.9406	.9418	.9429	.9441
1.6	.9452	.9463	.9474	.9484	.9495	.9505	.9515	.9525	.9535	.9545
1.7	.9554	.9564	.9573	.9582	.9591	.9599	.9608	.9616	.9625	.9633
1.8	.9641	.9649	.9656	.9664	.9671	.9678	.9686	.9693	.9699	.9706
1.9	.9713	.9719	.9726	.9732	.9738	.9744	.9750	.9756	.9761	.9767
2.0	.9772	.9778	.9783	.9788	.9793	.9798	.9803	.9808	.9812	.9817
2.1	.9821	.9826	.9830	.9834	.9838	.9842	.9846	.9850	.9854	.9857
2.2	.9861	.9864	.9868	.9871	.9875	.9878	.9881	.9884	.9887	.9890
2.3	.9893	.9896	.9898	.9901	.9904	.9906	.9909	.9911	.9913	.9916
2.4	.9918	.9920	.9922	.9925	.9927	.9929	.9931	.9932	.9934	.9936
2.5	.9938	.9940	.9941	.9943	.9945	.9946	.9948	.9949	.9951	.9952
2.6	.9953	.9955	.9956	.9957	.9959	.9960	.9961	.9962	.9963	.9964
2.7	.9965	.9966	.9967	.9968	.9969	.9970	.9971	.9972	.9973	.9974
2.8	.9974	.9975	.9976	.9977	.9977	.9978	.9979	.9979	.9980	.9981
2.9	.9981	.9982	.9982	.9983	.9984	.9984	.9985	.9985	.9986	.9986
3.0	.9987	.9987	.9987	.9988	.9988	.9989	.9989	.9989	.9990	.9990
3.1	.9990	.9991	.9991	.9991	.9992	.9992	.9992	.9992	.9993	.9993
3.2	.9993	.9993	.9994	.9994	.9994	.9994	.9994	.9995	.9995	.9995
3.3	.9995	.9995	.9995	.9996	.9996	.9996	.9996	.9996	.9996	.9997
3.4	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9997	.9998

Table entry for p and C is the point t^* with probability p lying above it and probability C lying between $-t^*$ and t^* .

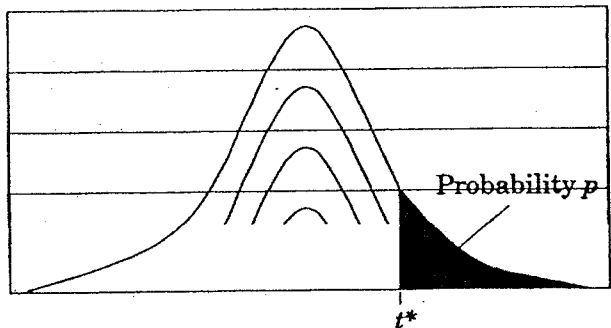


Table B t distribution critical values

df	Tail probability p											
	.25	.20	.15	.10	.05	.025	.02	.01	.005	.0025	.001	.0005
1	1.000	1.376	1.963	3.078	6.314	12.71	15.89	31.82	63.66	127.3	318.3	636.6
2	.816	1.061	1.386	1.886	2.920	4.303	4.849	6.965	9.925	14.09	22.33	31.60
3	.765	.978	1.250	1.638	2.353	3.182	3.482	4.541	5.841	7.453	10.21	12.92
4	.741	.941	1.190	1.533	2.132	2.776	2.999	3.747	4.604	5.598	7.173	8.610
5	.727	.920	1.156	1.476	2.015	2.571	2.757	3.365	4.032	4.773	5.893	6.869
6	.718	.906	1.134	1.440	1.943	2.447	2.612	3.143	3.707	4.317	5.208	5.959
7	.711	.896	1.119	1.415	1.895	2.365	2.517	2.998	3.499	4.029	4.785	5.408
8	.706	.889	1.108	1.397	1.860	2.306	2.449	2.896	3.355	3.833	4.501	5.041
9	.703	.883	1.100	1.383	1.833	2.262	2.398	2.821	3.250	3.690	4.297	4.781
10	.700	.879	1.093	1.372	1.812	2.228	2.359	2.764	3.169	3.581	4.144	4.587
11	.697	.876	1.088	1.363	1.796	2.201	2.328	2.718	3.106	3.497	4.025	4.437
12	.695	.873	1.083	1.356	1.782	2.179	2.303	2.681	3.055	3.428	3.930	4.318
13	.694	.870	1.079	1.350	1.771	2.160	2.282	2.650	3.012	3.372	3.852	4.221
14	.692	.868	1.076	1.345	1.761	2.145	2.264	2.624	2.977	3.326	3.787	4.140
15	.691	.866	1.074	1.341	1.753	2.131	2.249	2.602	2.947	3.286	3.733	4.073
16	.690	.865	1.071	1.337	1.746	2.120	2.235	2.583	2.921	3.252	3.686	4.015
17	.689	.863	1.069	1.333	1.740	2.110	2.224	2.567	2.898	3.222	3.646	3.965
18	.688	.862	1.067	1.330	1.734	2.101	2.214	2.552	2.878	3.197	3.611	3.922
19	.688	.861	1.066	1.328	1.729	2.093	2.205	2.539	2.861	3.174	3.579	3.883
20	.687	.860	1.064	1.325	1.725	2.086	2.197	2.528	2.845	3.153	3.552	3.850
21	.686	.859	1.063	1.323	1.721	2.080	2.189	2.518	2.831	3.135	3.527	3.819
22	.686	.858	1.061	1.321	1.717	2.074	2.183	2.508	2.819	3.119	3.505	3.792
23	.685	.858	1.060	1.319	1.714	2.069	2.177	2.500	2.807	3.104	3.485	3.768
24	.685	.857	1.059	1.318	1.711	2.064	2.172	2.492	2.797	3.091	3.467	3.745
25	.684	.856	1.058	1.316	1.708	2.060	2.167	2.485	2.787	3.078	3.450	3.725
26	.684	.856	1.058	1.315	1.706	2.056	2.162	2.479	2.779	3.067	3.435	3.707
27	.684	.855	1.057	1.314	1.703	2.052	2.158	2.473	2.771	3.057	3.421	3.690
28	.683	.855	1.056	1.313	1.701	2.048	2.154	2.467	2.763	3.047	3.408	3.674
29	.683	.854	1.055	1.311	1.699	2.045	2.150	2.462	2.756	3.038	3.396	3.659
30	.683	.854	1.055	1.310	1.697	2.042	2.147	2.457	2.750	3.030	3.385	3.646
40	.681	.851	1.050	1.303	1.684	2.021	2.123	2.423	2.704	2.971	3.307	3.551
50	.679	.849	1.047	1.299	1.676	2.009	2.109	2.403	2.678	2.937	3.261	3.496
60	.679	.848	1.045	1.296	1.671	2.000	2.099	2.390	2.660	2.915	3.232	3.460
80	.678	.846	1.043	1.292	1.664	1.990	2.088	2.374	2.639	2.887	3.195	3.416
100	.677	.845	1.042	1.290	1.660	1.984	2.081	2.364	2.626	2.871	3.174	3.390
1000	.675	.842	1.037	1.282	1.646	1.962	2.056	2.330	2.581	2.813	3.098	3.300
∞	.674	.841	1.036	1.282	1.645	1.960	2.054	2.326	2.576	2.807	3.091	3.291
	50%	60%	70%	80%	90%	95%	96%	98%	99%	99.5%	99.8%	99.9%
	Confidence level C											

Table entry for p is the point (χ^2) with probability p lying above it.

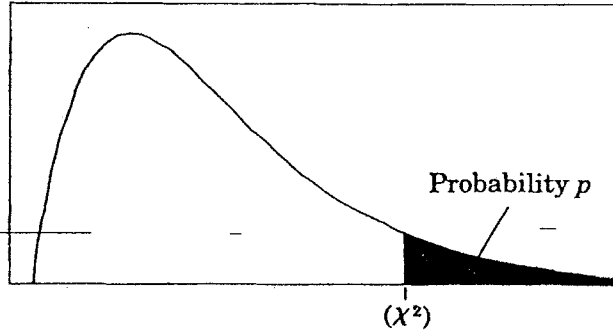


Table C χ^2 critical values

df	Tail probability p										
	.25	.20	.15	.10	.05	.025	.02	.01	.005	.0025	.001
1	1.32	1.64	2.07	2.71	3.84	5.02	5.41	6.63	7.88	9.14	10.83
2	2.77	3.22	3.79	4.61	5.99	7.38	7.82	9.21	10.60	11.98	13.82
3	4.11	4.64	5.32	6.25	7.81	9.35	9.84	11.34	12.84	14.32	16.27
4	5.39	5.99	6.74	7.78	9.49	11.14	11.67	13.28	14.86	16.42	18.47
5	6.63	7.29	8.12	9.24	11.07	12.83	13.39	15.09	16.75	18.39	20.51
6	7.84	8.56	9.45	10.64	12.59	14.45	15.03	16.81	18.55	20.25	22.46
7	9.04	9.80	10.75	12.02	14.07	16.01	16.62	18.48	20.28	22.04	24.32
8	10.22	11.03	12.03	13.36	15.51	17.53	18.17	20.09	21.95	23.77	26.12
9	11.39	12.24	13.29	14.68	16.92	19.02	19.68	21.67	23.59	25.46	27.88
10	12.55	13.44	14.53	15.99	18.31	20.48	21.16	23.21	25.19	27.11	29.59
11	13.70	14.63	15.77	17.28	19.68	21.92	22.62	24.72	26.76	28.73	31.26
12	14.85	15.81	16.99	18.55	21.03	23.34	24.05	26.22	28.30	30.32	32.91
13	15.98	16.98	18.20	19.81	22.36	24.74	25.47	27.69	29.82	31.88	34.53
14	17.12	18.15	19.41	21.06	23.68	26.12	26.87	29.14	31.32	33.43	36.12
15	18.25	19.31	20.60	22.31	25.00	27.49	28.26	30.58	32.80	34.95	37.70
16	19.37	20.47	21.79	23.54	26.30	28.85	29.63	32.00	34.27	36.46	39.25
17	20.49	21.61	22.98	24.77	27.59	30.19	31.00	33.41	35.72	37.95	40.79
18	21.60	22.76	24.16	25.99	28.87	31.53	32.35	34.81	37.16	39.42	42.31
19	22.72	23.90	25.33	27.20	30.14	32.85	33.69	36.19	38.58	40.88	43.82
20	23.83	25.04	26.50	28.41	31.41	34.17	35.02	37.57	40.00	42.34	45.31
21	24.93	26.17	27.66	29.62	32.67	35.48	36.34	38.93	41.40	43.78	46.80
22	26.04	27.30	28.82	30.81	33.92	36.78	37.66	40.29	42.80	45.20	48.27
23	27.14	28.43	29.98	32.01	35.17	38.08	38.97	41.64	44.18	46.62	49.73
24	28.24	29.55	31.13	33.20	36.42	39.36	40.27	42.98	45.56	48.03	51.18
25	29.34	30.68	32.28	34.38	37.65	40.65	41.57	44.31	46.93	49.44	52.62
26	30.43	31.79	33.43	35.56	38.89	41.92	42.86	45.64	48.29	50.83	54.05
27	31.53	32.91	34.57	36.74	40.11	43.19	44.14	46.96	49.64	52.22	55.48
28	32.62	34.03	35.71	37.92	41.34	44.46	45.42	48.28	50.99	53.59	56.89
29	33.71	35.14	36.85	39.09	42.56	45.72	46.69	49.59	52.34	54.97	58.30
30	34.80	36.25	37.99	40.26	43.77	46.98	47.96	50.89	53.67	56.33	59.70
40	45.62	47.27	49.24	51.81	55.76	59.34	60.44	63.69	66.77	69.70	73.40
50	56.33	58.16	60.35	63.17	67.50	71.42	72.61	76.15	79.49	82.66	86.66
60	66.98	68.97	71.34	74.40	79.08	83.30	84.58	88.38	91.95	95.34	99.61
80	88.13	90.41	93.11	96.58	101.9	106.6	108.1	112.3	116.3	120.1	124.8
100	109.1	111.7	114.7	118.5	124.3	129.6	131.1	135.8	140.2	144.3	149.4