UNIVERSITY AT ALBANY
STATE UNIVERSITY OF NEW YORK

AMAT 108 Elementary Statistics — Exam 3
Fall 2025 — Version 1

Print Name:	
UAlbany Email:	

Directions: You have **80 minutes** to answer the following questions. ***No notes, textbooks, mobile phones or other aids are allowed. Only scientific calculators are allowed.*** For all multiple-choice questions, select **one** answer from among the choices given. No explanation is required to be shown and no partial credit will be given. Make sure to **completely** fill in the circle corresponding to your chosen answer. For all free-response questions, you **must** show all necessary work to receive full credit. An answer with no work, even if correct, will not receive full credit. Please circle or box your final answer.

Do not detach any pages. Please choose your section with a check mark (✓) in the left-most column.

✓	Section	Instructor Name	Meeting Time	Meeting Days	Meeting Location
	4863	John Habib	12:00PM	T/TH	SS 116
	4465	Tung Lam	8:00AM	M/W	SS 116
	4713		9:00AM	T/TH	LC 3B
	3749	James Lamatina	10:30AM	T/TH	SS 116
	1710	Chris Lange	3:00PM	T/TH	SS 116
	3370		4:30PM		
	5435	Doug Rosenberg	3:00PM	T/TH	TA 118
	3750	Sam Spellman	9:00AM	T/TH	SS 116
	3748	Alea Wittig	11:40AM	M/W	SS 116

Exam Scoring:

Page	Possible Points	Points Earned
3	7	
4	12	
5	7	
6	6	
7	10	
8	9	
9	4	
Total Points	55	
Percentage		

1. The null hypothesis of a statistical test is as follows:

H_0: The average lifespan of a nine-volt battery is 2.194 hours.

Which of the following leads to a Type 1 error (false-positive)? (2 pts.)

① We fail to reject H_0 when the average lifespan of nine-volt batteries is 2.194 hours.

② We reject H_0 when the average lifespan of nine-volt batteries is 2.194 hours.

③ We fail to reject H_0 when the average lifespan of nine-volt batteries is not 2.194 hours.

④ We reject H_0 when the average lifespan of nine-volt batteries is not 2.194 hours.

2. All of the following are valid sets of statistical hypotheses except... (2 pts.)

① H_0: $p = 0.64$ vs. H_1: $p < 0.64$

② H_0: $\mu = 70$ vs. H_1: $\mu \neq 70$

③ H_0: $\overline{x} = 82$ vs. H_1: $\overline{x} > 82$

3. **Formulate the correct set of statistical hypotheses in symbols for the scenario given below.** (3 pts.)

A national French fries brand wants to know if its new marketing campaign is more effective in Region 1 than in Region 2. In Region 1, 500 customers were surveyed and 260 reported noticing the campaign. In Region 2, 400 customers were surveyed and 180 reported noticing the campaign. The brand wishes to know whether the proportion of customers who noticed the campaign is greater in Region 1 than in Region 2.

4. The use of AI, like ChatGPT, in higher education is controversial. To gauge student opinions, a university randomly selects 4625 students. Of these, 2776 support widespread AI usage in higher education. *Assume that all requirements for the Large-Sample Confidence Interval for p are met.*

   (a) Compute the sample proportion. Round your answer to *three* decimal places. (3 pts.)

   (b) Use your answer in (a) to construct a central 95% confidence interval for the proportion, p, of all students who are in favor of widespread AI usage in higher education. Round *both* endpoints to *three* decimal places. (6 pts.)

   (c) Find the minimum sample size required to conservatively estimate p to within 0.006 with 95% confidence. Round your answer *up* to the nearest whole number. (3 pts.)

5. A researcher is investigating student sleep habits due to concerns about in-lecture fatigue. To investigate, 107 students were randomly selected. They average 5.1 hours of sleep per night, with a standard deviation of 2.42 hours.

   (a) Are all requirements for the confidence interval for μ met? (1 pt.)

   ① Yes, because the population of interest has a normal distribution.

   ② Yes, because the collected sample has a normal distribution.

   ③ Yes, because the collected sample is sufficiently large.

   ④ No, because none of the above apply.

   (b) Construct a central 96% confidence interval for the average number of hours of sleep for all students. Use $t^* \approx 2.079$ as your critical number. Round *both* endpoints to *three* decimal places. (5 pts.)

   (c) Which of the following is the correct interpretation of the interval in (b) above? (1 pt.)

   ① We are 96% confident that the actual value of μ is within the constructed interval.

   ② The probability that the actual value of μ is within the constructed interval equals 96%.

   ③ Both of the above answers are correct.

   ④ None of the above answers are true.

6. A local pest control organization claims 60% customer satisfaction. Researchers review the organization's website and online reviews, finding a discrepancy. They test the claim by randomly calling 648 recent customers, finding only 54% are highly satisfied. The researchers seek evidence to conclude the organization's claim is too high. *Assume that the requirements of the One-Sample Z Test for p are met.*

   (a) Select the correct pair of statistical hypotheses. (1 pt.)

   ① H_0: $p = 0.60$ vs. H_1: $p < 0.60$

   ② H_0: $p = 0.60$ vs. H_1: $p > 0.60$

   ③ H_0: $p = 0.60$ vs. H_1: $p \neq 0.60$

   (b) Compute the z^* test statistic. Round your answer to *two* decimal places. (3 pts.)

   (c) Use your answer in (b) to compute the *p-value* of the test. (1 pt.)

   (d) Which of the following is the correct conclusion? (1 pt.)

   ① Fail to reject H_0 at $\alpha = 0.05$. There is not enough evidence to conclude that the organization's claim is too high.

   ② Reject H_0 at $\alpha = 0.05$, but fail to reject H_0 at $\alpha = 0.01$. There is a slight amount of evidence to conclude that the organization's claim is too high.

   ③ Reject H_0 at $\alpha = 0.01$, but fail to reject H_0 at $\alpha = 0.001$. There is a convincing amount of evidence to conclude that the organization's claim is too high.

   ④ Reject H_0 at $\alpha = 0.001$. There is an overwhelming amount of evidence to conclude that the organization's claim is too high.

7. Most faculty buy coffee from campus. The campus staff claims each cup uses 70 coffee beans, on average. The faculty disagrees, though, finding the coffee too strong or weak. A faculty member tests this by randomly selecting 120 cups, measuring an average of 69.4 beans with a standard deviation of 2.89. They want to determine if this average differs from the staff's claim. *Assume that the requirements for the One-Sample T Test for μ are met.*

   (a) Select the correct pair of statistical hypotheses. (1 pt.)

   ① H_0: $\mu = 70$ vs. H_1: $\mu < 70$

   ② H_0: $\mu = 70$ vs. H_1: $\mu > 70$

   ③ H_0: $\mu = 70$ vs. H_1: $\mu \neq 70$

   (b) Compute the t^* test statistic. Round your answer to *one* decimal place. (3 pts.)

   (c) The test statistic has a t distribution with how many degrees of freedom? (2 pts.)

   (d) Compute the *p-value* of the test. (3 pts.)

   (e) Which of the following is the correct conclusion? (1 pt.)

   ① Fail to reject H_0 at $\alpha = 0.05$. There is not enough evidence to conclude that the average number of coffee beans used in a cup of coffee differs from the staff's claim.

   ② Reject H_0 at $\alpha = 0.05$, but fail to reject H_0 at $\alpha = 0.01$. There is a slight amount of evidence to conclude that the average number of coffee beans used in a cup of coffee differs from the staff's claim.

   ③ Reject H_0 at $\alpha = 0.01$, but fail to reject H_0 at $\alpha = 0.001$. There is a convincing amount of evidence to conclude that the average number of coffee beans used in a cup of coffee differs from the staff's claim.

   ④ Reject H_0 at $\alpha = 0.001$. There is an overwhelming amount of evidence to conclude that the average number of coffee beans used in a cup of coffee differs from the staff's claim.

8. Two universities have a strong athletic rivalry, but recently, academic success has also been a factor. Undergraduate students from both institutions are randomly selected and given a standardized examination. Summary statistics on student performance are provided below:

	University 1	University 2
Average Exam Score	43.071	38.008
Standard Deviation	12.324	14.978
Number of Students	176	118

Both institutions want to use Welch's T Test to determine if standardized exam scores at the institutions differ. Use μ_1 to denote the average score on the standardized examination by all University 1 students, and use μ_2 to denote the average score on the standardized examination by all University 2 students. *Assume that the requirements of the test are met.*

(a) Select the correct pair of statistical hypotheses. (1 pt.)

① H_0: $\mu_1 = \mu_2$ vs. H_1: $\mu_1 < \mu_2$

② H_0: $\mu_1 = \mu_2$ vs. H_1: $\mu_1 > \mu_2$

③ H_0: $\mu_1 = \mu_2$ vs. H_1: $\mu_1 \neq \mu_2$

(b) Compute the t^* test statistic. Round your answer to *one* decimal place. (5 pts.)

(c) The test statistic has a t distribution with how many degrees of freedom? (3 pts.)

Parts (d) and (e) are on the next page...

(d) Compute the *p-value* of the test. (3 pts.)

(e) Which of the following is the correct conclusion? (1 pt.)

1. Fail to reject H_0 at $\alpha = 0.05$. There is not enough evidence to conclude that the examination scores by students at both institutions differ from each other.

2. Reject H_0 at $\alpha = 0.05$, but fail to reject H_0 at $\alpha = 0.01$. There is a slight amount of evidence to conclude that the examination scores by students at both institutions differ from each other.

3. Reject H_0 at $\alpha = 0.01$, but fail to reject H_0 at $\alpha = 0.001$. There is a convincing amount of evidence to conclude that the examination scores by students at both institutions differ from each other.

4. Reject H_0 at $\alpha = 0.001$. There is an overwhelming amount of evidence to conclude that the examination scores by students at both institutions differ from each other.

Formula Sheet:

- Sample proportion:

$$\hat{p} = \frac{\text{number of successes in sample}}{n}$$

- Confidence interval for a population proportion:

$$\hat{p} \pm z^* \sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$$

- Determining the sample size required to be within M = margin of error under a certain confidence level:

$$n = p(1-p)\left(\frac{z^*}{M}\right)^2$$

- To find the conservatively large sample size required, set $p = 0.5$.
- Confidence interval for a population mean (when σ unknown):

$$\overline{x} \pm t^*\left(\frac{s}{\sqrt{n}}\right) \qquad\qquad df = n-1$$

- z-test statistic for hypothesis testing of a population proportion:

$$z^* = \frac{\hat{p} - p_0}{\sqrt{\frac{p_0(1-p_0)}{n}}}$$

- t-test statistic for hypothesis testing of a population mean (when σ unknown):

$$t^* = \frac{\overline{x} - \mu_0}{\left(\frac{s}{\sqrt{n}}\right)} \qquad\qquad df = n-1$$

- Hypothesis testing for the difference of two means (Welch's T Test):

$$t^* = \frac{\overline{x}_1 - \overline{x}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

$$df = \text{smaller of } n_1 - 1 \text{ and } n_2 - 1$$

- Hypothesis testing for the difference of two proportions (2-Sample Z Test for Equal Proportions):

$$z^* = \frac{\hat{p}_1 - \hat{p}_2}{\sqrt{\frac{\hat{p}_c(1-\hat{p}_c)}{n_1} + \frac{\hat{p}_c(1-\hat{p}_c)}{n_2}}}$$

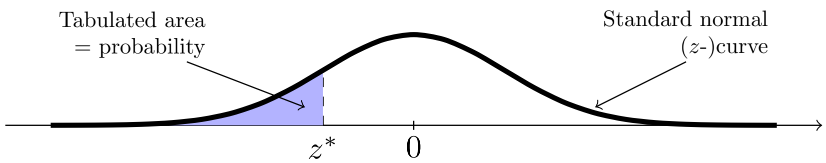
- Combined/pooled sample proportion:

$$\hat{p}_c = \frac{n_1 \cdot \hat{p}_1 + n_2 \cdot \hat{p}_2}{n_1 + n_2} \qquad \text{or} \qquad \hat{p}_c = \frac{x_1 + x_2}{n_1 + n_2}$$

- Success/failure condition for the 2-Sample Z Test for Equal Proportions:

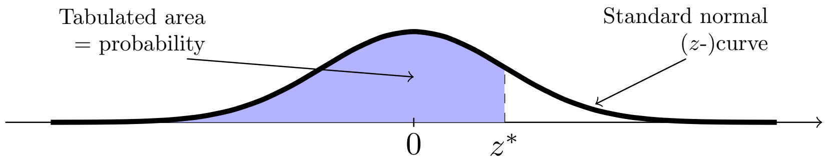
$$n_1\hat{p}_1 \geq 10 \qquad n_1(1-\hat{p}_1) \geq 10 \qquad n_2\hat{p}_2 \geq 10 \qquad n_2(1-\hat{p}_2) \geq 10$$

Standard Normal Table



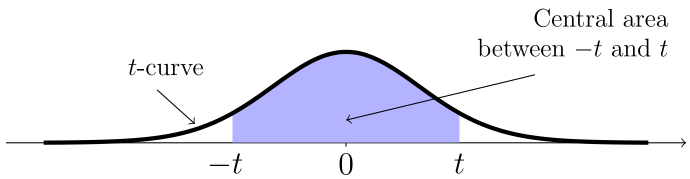
z^*	**0.00**	**0.01**	**0.02**	**0.03**	**0.04**	**0.05**	**0.06**	**0.07**	**0.08**	**0.09**
-3.9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
-3.8	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
-3.7	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
-3.6	0.0002	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
-3.5	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002	0.0002
-3.4	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002
-3.3	0.0005	0.0005	0.0005	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0003
-3.2	0.0007	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0005	0.0005	0.0005
-3.1	0.0010	0.0009	0.0009	0.0009	0.0008	0.0008	0.0008	0.0008	0.0007	0.0007
-3.0	0.0013	0.0013	0.0013	0.0012	0.0012	0.0011	0.0011	0.0011	0.0010	0.0010
-2.9	0.0019	0.0018	0.0018	0.0017	0.0016	0.0016	0.0015	0.0015	0.0014	0.0014
-2.8	0.0026	0.0025	0.0024	0.0023	0.0023	0.0022	0.0021	0.0021	0.0020	0.0019
-2.7	0.0035	0.0034	0.0033	0.0032	0.0031	0.0030	0.0029	0.0028	0.0027	0.0026
-2.6	0.0047	0.0045	0.0044	0.0043	0.0041	0.0040	0.0039	0.0038	0.0037	0.0036
-2.5	0.0062	0.0060	0.0059	0.0057	0.0055	0.0054	0.0052	0.0051	0.0049	0.0048
-2.4	0.0082	0.0080	0.0078	0.0075	0.0073	0.0071	0.0069	0.0068	0.0066	0.0064
-2.3	0.0107	0.0104	0.0102	0.0099	0.0096	0.0094	0.0091	0.0089	0.0087	0.0084
-2.2	0.0139	0.0136	0.0132	0.0129	0.0125	0.0122	0.0119	0.0116	0.0113	0.0110
-2.1	0.0179	0.0174	0.0170	0.0166	0.0162	0.0158	0.0154	0.0150	0.0146	0.0143
-2.0	0.0228	0.0222	0.0217	0.0212	0.0207	0.0202	0.0197	0.0192	0.0188	0.0183
-1.9	0.0287	0.0281	0.0274	0.0268	0.0262	0.0256	0.0250	0.0244	0.0239	0.0233
-1.8	0.0359	0.0351	0.0344	0.0336	0.0329	0.0322	0.0314	0.0307	0.0301	0.0294
-1.7	0.0446	0.0436	0.0427	0.0418	0.0409	0.0401	0.0392	0.0384	0.0375	0.0367
-1.6	0.0548	0.0537	0.0526	0.0516	0.0505	0.0495	0.0485	0.0475	0.0465	0.0455
-1.5	0.0668	0.0655	0.0643	0.0630	0.0618	0.0606	0.0594	0.0582	0.0571	0.0559
-1.4	0.0808	0.0793	0.0778	0.0764	0.0749	0.0735	0.0721	0.0708	0.0694	0.0681
-1.3	0.0968	0.0951	0.0934	0.0918	0.0901	0.0885	0.0869	0.0853	0.0838	0.0823
-1.2	0.1151	0.1131	0.1112	0.1093	0.1075	0.1056	0.1038	0.1020	0.1003	0.0985
-1.1	0.1357	0.1335	0.1314	0.1292	0.1271	0.1251	0.1230	0.1210	0.1190	0.1170
-1.0	0.1587	0.1562	0.1539	0.1515	0.1492	0.1469	0.1446	0.1423	0.1401	0.1379
-0.9	0.1841	0.1814	0.1788	0.1762	0.1736	0.1711	0.1685	0.1660	0.1635	0.1611
-0.8	0.2119	0.2090	0.2061	0.2033	0.2005	0.1977	0.1949	0.1922	0.1894	0.1867
-0.7	0.2420	0.2389	0.2358	0.2327	0.2296	0.2266	0.2236	0.2206	0.2177	0.2148
-0.6	0.2743	0.2709	0.2676	0.2643	0.2611	0.2578	0.2546	0.2514	0.2483	0.2451
-0.5	0.3085	0.3050	0.3015	0.2981	0.2946	0.2912	0.2877	0.2843	0.2810	0.2776
-0.4	0.3446	0.3409	0.3372	0.3336	0.3300	0.3264	0.3228	0.3192	0.3156	0.3121
-0.3	0.3821	0.3783	0.3745	0.3707	0.3669	0.3632	0.3594	0.3557	0.3520	0.3483
-0.2	0.4207	0.4168	0.4129	0.4090	0.4052	0.4013	0.3974	0.3936	0.3897	0.3859
-0.1	0.4602	0.4562	0.4522	0.4483	0.4443	0.4404	0.4364	0.4325	0.4286	0.4247
-0.0	0.5000	0.4960	0.4920	0.4880	0.4840	0.4801	0.4761	0.4721	0.4681	0.4641

Standard Normal Table



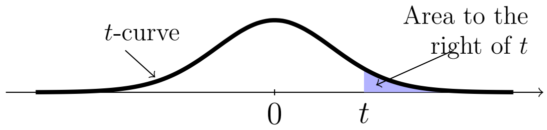
z^*	**0.00**	**0.01**	**0.02**	**0.03**	**0.04**	**0.05**	**0.06**	**0.07**	**0.08**	**0.09**
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.9987	0.9987	0.9987	0.9988	0.9988	0.9989	0.9989	0.9989	0.9990	0.9990
3.1	0.9990	0.9991	0.9991	0.9991	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993
3.2	0.9993	0.9993	0.9994	0.9994	0.9994	0.9994	0.9994	0.9995	0.9995	0.9995
3.3	0.9995	0.9995	0.9995	0.9996	0.9996	0.9996	0.9996	0.9996	0.9996	0.9997
3.4	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9997	0.9998
3.5	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998	0.9998
3.6	0.9998	0.9998	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
3.7	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
3.8	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999	0.9999
3.9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

t-Distribution Table of Critical Values



degree of freedom	Central Area Captured / Confidence Level								
	80%	**90%**	**95%**	**96%**	**97%**	**98%**	**99%**	**99.8%**	**99.9%**
1	3.078	6.314	12.706	15.895	21.205	31.821	63.657	318.309	636.619
2	1.886	2.920	4.303	4.849	5.643	6.965	9.925	22.327	31.599
3	1.638	2.353	3.182	3.482	3.896	4.541	5.841	10.215	12.924
4	1.533	2.132	2.776	2.999	3.298	3.747	4.604	7.173	8.610
5	1.476	2.015	2.571	2.757	3.003	3.365	4.032	5.893	6.869
6	1.440	1.943	2.447	2.612	2.829	3.143	3.707	5.208	5.959
7	1.415	1.895	2.365	2.517	2.715	2.998	3.499	4.785	5.408
8	1.397	1.860	2.306	2.449	2.634	2.896	3.355	4.501	5.041
9	1.383	1.833	2.262	2.398	2.574	2.821	3.250	4.297	4.781
10	1.372	1.812	2.228	2.359	2.527	2.764	3.169	4.144	4.587
11	1.363	1.796	2.201	2.328	2.491	2.718	3.106	4.025	4.437
12	1.356	1.782	2.179	2.303	2.461	2.681	3.055	3.930	4.318
13	1.350	1.771	2.160	2.282	2.436	2.650	3.012	3.852	4.221
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
96	1.290	1.661	1.985	2.082	2.203	2.366	2.628	3.177	3.395
97	1.290	1.661	1.985	2.082	2.202	2.365	2.627	3.176	3.394
98	1.290	1.661	1.984	2.081	2.202	2.365	2.627	3.175	3.393
99	1.290	1.660	1.984	2.081	2.202	2.365	2.626	3.175	3.392
100	1.290	1.660	1.984	2.081	2.201	2.364	2.626	3.174	3.390
101	1.290	1.660	1.984	2.081	2.201	2.364	2.625	3.173	3.389
102	1.290	1.660	1.983	2.080	2.201	2.363	2.625	3.172	3.388
103	1.290	1.660	1.983	2.080	2.201	2.363	2.624	3.171	3.388
104	1.290	1.660	1.983	2.080	2.200	2.363	2.624	3.170	3.387
105	1.290	1.659	1.983	2.080	2.200	2.362	2.623	3.170	3.386
106	1.290	1.659	1.983	2.079	2.200	2.362	2.623	3.169	3.385
107	1.290	1.659	1.982	2.079	2.199	2.362	2.623	3.168	3.384
108	1.289	1.659	1.982	2.079	2.199	2.361	2.622	3.167	3.383
109	1.289	1.659	1.982	2.079	2.199	2.361	2.622	3.167	3.382
110	1.289	1.659	1.982	2.078	2.199	2.361	2.621	3.166	3.381
111	1.289	1.659	1.982	2.078	2.198	2.360	2.621	3.165	3.380
112	1.289	1.659	1.981	2.078	2.198	2.360	2.620	3.165	3.380
113	1.289	1.658	1.981	2.078	2.198	2.360	2.620	3.164	3.379
114	1.289	1.658	1.981	2.078	2.198	2.360	2.620	3.163	3.378
115	1.289	1.658	1.981	2.077	2.197	2.359	2.619	3.163	3.377
116	1.289	1.658	1.981	2.077	2.197	2.359	2.619	3.162	3.376
117	1.289	1.658	1.980	2.077	2.197	2.359	2.619	3.161	3.376
118	1.289	1.658	1.980	2.077	2.197	2.358	2.618	3.161	3.375
119	1.289	1.658	1.980	2.077	2.196	2.358	2.618	3.160	3.374
120	1.289	1.658	1.980	2.076	2.196	2.358	2.617	3.160	3.373
z-**critical** $= \infty$	1.282	1.645	1.960	2.054	2.170	2.326	2.576	3.090	3.291

Tail Areas for t Curves



t^* \ df	**1**	**2**	$\cdots$	**114**	**115**	**116**	**117**	**118**	**119**	**120**
0.0	0.500	0.500	$\cdots$	0.500	0.500	0.500	0.500	0.500	0.500	0.500
0.1	0.468	0.465	$\cdots$	0.460	0.460	0.460	0.460	0.460	0.460	0.460
0.2	0.437	0.430	$\cdots$	0.421	0.421	0.421	0.421	0.421	0.421	0.421
0.3	0.407	0.396	$\cdots$	0.382	0.382	0.382	0.382	0.382	0.382	0.382
0.4	0.379	0.364	$\cdots$	0.345	0.345	0.345	0.345	0.345	0.345	0.345
0.5	0.352	0.333	$\cdots$	0.309	0.309	0.309	0.309	0.309	0.309	0.309
0.6	0.328	0.305	$\cdots$	0.275	0.275	0.275	0.275	0.275	0.275	0.275
0.7	0.306	0.278	$\cdots$	0.243	0.243	0.243	0.243	0.243	0.243	0.243
0.8	0.285	0.254	$\cdots$	0.213	0.213	0.213	0.213	0.213	0.213	0.213
0.9	0.267	0.232	$\cdots$	0.185	0.185	0.185	0.185	0.185	0.185	0.185
1.0	0.250	0.211	$\cdots$	0.160	0.160	0.160	0.160	0.160	0.160	0.160
1.1	0.235	0.193	$\cdots$	0.137	0.137	0.137	0.137	0.137	0.137	0.137
1.2	0.221	0.177	$\cdots$	0.116	0.116	0.116	0.116	0.116	0.116	0.116
1.3	0.209	0.162	$\cdots$	0.098	0.098	0.098	0.098	0.098	0.098	0.098
1.4	0.197	0.148	$\cdots$	0.082	0.082	0.082	0.082	0.082	0.082	0.082
1.5	0.187	0.136	$\cdots$	0.068	0.068	0.068	0.068	0.068	0.068	0.068
1.6	0.178	0.125	$\cdots$	0.056	0.056	0.056	0.056	0.056	0.056	0.056
1.7	0.169	0.116	$\cdots$	0.046	0.046	0.046	0.046	0.046	0.046	0.046
1.8	0.161	0.107	$\cdots$	0.037	0.037	0.037	0.037	0.037	0.037	0.037
1.9	0.154	0.099	$\cdots$	0.030	0.030	0.030	0.030	0.030	0.030	0.030
2.0	0.148	0.092	$\cdots$	0.024	0.024	0.024	0.024	0.024	0.024	0.024
2.1	0.141	0.085	$\cdots$	0.019	0.019	0.019	0.019	0.019	0.019	0.019
2.2	0.136	0.079	$\cdots$	0.015	0.015	0.015	0.015	0.015	0.015	0.015
2.3	0.131	0.074	$\cdots$	0.012	0.012	0.012	0.012	0.012	0.012	0.012
2.4	0.126	0.069	$\cdots$	0.009	0.009	0.009	0.009	0.009	0.009	0.009
2.5	0.121	0.065	$\cdots$	0.007	0.007	0.007	0.007	0.007	0.007	0.007
2.6	0.117	0.061	$\cdots$	0.005	0.005	0.005	0.005	0.005	0.005	0.005
2.7	0.113	0.057	$\cdots$	0.004	0.004	0.004	0.004	0.004	0.004	0.004
2.8	0.109	0.054	$\cdots$	0.003	0.003	0.003	0.003	0.003	0.003	0.003
2.9	0.106	0.051	$\cdots$	0.002	0.002	0.002	0.002	0.002	0.002	0.002
3.0	0.102	0.048	$\cdots$	0.002	0.002	0.002	0.002	0.002	0.002	0.002
3.1	0.099	0.045	$\cdots$	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3.2	0.096	0.043	$\cdots$	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3.3	0.094	0.040	$\cdots$	0.001	0.001	0.001	0.001	0.001	0.001	0.001
3.4	0.091	0.038	$\cdots$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3.5	0.089	0.036	$\cdots$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3.6	0.086	0.035	$\cdots$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3.7	0.084	0.033	$\cdots$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3.8	0.082	0.031	$\cdots$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
3.9	0.080	0.030	$\cdots$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4.0	0.078	0.029	$\cdots$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4.1	0.076	0.027	$\cdots$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4.2	0.074	0.026	$\cdots$	0.000	0.000	0.000	0.000	0.000	0.000	0.000
4.3	0.073	0.025	$\cdots$	0.000	0.000	0.000	0.000	0.000	0.000	0.000