

大葉大學 95 學年度轉學招生考試試題紙

系	組	別	日\ 第二部	年級	考試科目 (中文名稱)	考試日期	節次	備註
	休閒管理系		日	三	統計學	8月7日	四	共三頁 可攜計算機

註：考生可否攜帶計算機或其他資料作答，請在備註欄註明（如未註明，一律不准攜帶） 13:30~14:50 P2-1

選擇題（以下每題為單選，每題 4 分）

1. Which of the following is(are) always true? A. $-1 \leq P(E_i) \leq 1$ B. $P(A) = 1 - P(A^c)$ C. $P(A) + P(B) = 1$ D. $\sum P_i \geq 1$
2. Events that have no sample points in common are: A. independent B. posterior C. mutually exclusive
D. complements
3. Two events, A and B, are mutually exclusive and each have a nonzero probability. If event A is known to occur, the probability of the occurrence of event B is A. one B. any positive value C. zero D. any value between 0 to 1
4. On a December day, the probability of snow is .30. The probability of a "cold" day is .50. The probability of snow and "cold" weather is .15. Are snow and "cold" weather independent events? A. only if given that it snowed B. no C. yes D. only when they are also mutually exclusive
5. If $P(A) = 0.5$ And $P(B) = 0.5$, then $P(A \cap B)$ is: A. 0.00 B. 1.00 C. 0.5 D. none of the above is correct.

AMR is a computer consulting firm. The number of new clients that they have obtained each month has ranged from 0 to 6. The number of new clients has the probability distribution that is shown below. Answer problems 6-7.

Number of new Clients	0	1	2	3	4	5	6
Probability	0.05	0.10	0.15	0.35	0.20	0.10	0.05

6. The expected number of new clients per month is A. 6 B. 0 C. 3.05 D. 21
 7. The variance is A. 1.431 B. 2.047 C. 3.05 D. 21
 8. The variance $\text{var}(x)$ of a Binomial Distribution is A. $P(1 - P)$ B. nP C. $n(1 - P)$ D. $nP(1 - P)$
- The random variable x is the number of occurrences of an event over an interval of ten minutes. It can be assumed that the probability of an occurrence is the same in any two time periods of an equal length. It is known that the mean number of occurrences in ten minutes is 5, and $e^{-5} = 0.0067$, $e = 2.7182$. Answer problems 9, 10 and 11.
9. The random variable x satisfies which of the following probability distributions? A. normal B. Poisson C. Binomial D. Not enough information to answer this question.
 10. The expected value of the random variable x is A. 2 B. 5 C. 10 D. 2.30
 11. The probability that there are 2 occurrences in ten minutes is A. .0241 B. .0837 C. .1126 D. .9107
 12. There are 6 children in a family. The number of possible simple random samples of size 2 from the 6 children (without replacement) equals A. 12 B. 15 C. 3 D. 16
 13. Random samples of size 36 are taken from an infinite population whose mean and standard deviation are 20 and 15, respectively. The distribution of the population is unknown. The mean and the standard error of the mean are A. 36 and 15 B. 20 and 15 C. 20 and 0.417 D. 20 and 2.5
 14. A population of size 1,000 has a proportion of 0.5, then the proportion and the standard deviation of the sample proportion for samples of size 100 are A. 500 and 0.047 B. 500 and 0.050 C. 0.5 and 0.047 D. 0.5 and 0.050
 15. The following is a simple random sample of a population: 16 19 18 17 20 18. The point estimate of the population standard deviation is A. 2.000 B. 1.291 C. 1.414 D. 1.667

In order to estimate the average time spent on the Computer terminals per student at a local university, data were collected for a sample of 81 business students over a one week period. Assume the population standard deviation is 1.8 hours, answer problems 16-18.

16. The standard error of the sample mean is A. 7.50 B. 0.39 C. 2.00 D. 0.20
17. With a 0.95 probability, the margin of error is approximately A. 0.39 B. 1.96 C. 0.20 D. 1.64

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			B	三	統計學	8月7日	四	可攜帶計算機

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P2-2

18. If the sample mean is 9 hours, then the 95% Confidence interval is A. 7.04 to 110.96 hours B. 7.36 to 10.64 hours C. 7.80 to 10.20 hours D. 8.61 to 9.39 hours
19. The following random sample from a population whose values were normally distributed was collected: 10 8 11 11, the 95% confidence interval for μ is A. 8.52 to 10.98 B. 7.75 to 11.75 C. 9.75 to 10.75 D. 8.00 to 10.00
20. In a sample of 400 voters, 360 indicated they favor the incumbent governor, the 95% confidence interval of voters not favoring the incumbent is A. 0.871 to 0.929 B. 0.120 to 0.280 C. 0.765 to 0.835 D. 0.071 to 0.129
21. The manager of a grocery store has taken a random sample of 100 customers, which has a sample average length of time of 3.1 minutes to check out and a sample standard deviation of 0.5 minutes. We want to test to determine whether or not the mean waiting time of all customers is significantly more than 3 minutes. At 95% Confidence, it can be concluded that the mean of the population is A. significantly greater than 3 B. not significantly greater than 3 C. significantly less than 3 D. significantly greater than 3.18
- The following information was obtained from independent random samples. Assume normally distributed populations with equal variances. Answer problems 22-30.

Sample 1	Sample 2	42
Sample Mean	45	42
Sample Variance	85	90
Sample Size	10	12

22. The point estimate for the difference between the means of the two populations is A. 0 B. 2 C. 3 D. 15
23. The standard error of $\bar{X}_1 - \bar{X}_2$ is A. 3.0 B. 4.0 C. 8.372 D. 19.48
24. The 95% Confidence interval for the difference between the two population means is A. -5.372 to 11.372 B. -5 to 3 C. -4.86 to 10.86 D. -2.65 to 8.65
25. Which of the following range of p-value that we will reject H_0 A. 0.005 to 0.01 B. 0.1 to 0.25 C. 0.25 to 0.5 D. none of the above

Standard Normal Table

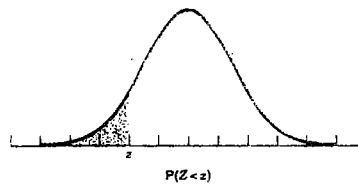
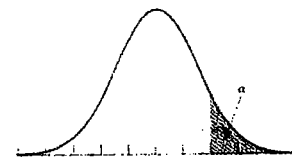


表4 臨界值



	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	0.0007	0.0007	0.0007
-3.0	0.0013	0.0013	0.0013	0.0012	0.0012	0.0011	0.0011	0.0010	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	0.0666	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

Degrees of Freedom	Upper Tail Probability (α)									
	0.15	0.10	0.05	0.025	0.015	0.01	0.005	0.001	0.0005	0.0001
1	1.963	3.078	6.314	12.706	21.205	31.821	63.657	318.309	1273.155	
2	1.386	1.886	2.920	4.303	5.643	6.965	9.925	22.327	44.703	
3	1.250	1.638	2.353	3.182	3.896	4.541	5.841	10.215	16.326	
4	1.190	1.533	2.132	2.776	3.298	3.747	4.604	7.173	10.305	
5	1.156	1.476	2.015	2.571	3.003	3.365	4.032	5.893	7.976	
6	1.134	1.440	1.943	2.447	2.829	3.143	3.707	5.208	6.788	
7	1.119	1.415	1.895	2.365	2.715	2.998	3.499	4.785	6.082	
8	1.108	1.397	1.860	2.306	2.634	2.896	3.355	4.501	5.617	
9	1.100	1.383	1.833	2.262	2.574	2.821	3.250	4.297	5.291	
10	1.093	1.372	1.812	2.228	2.527	2.764	3.169	4.144	5.049	
11	1.088	1.363	1.796	2.201	2.491	2.718	3.106	4.025	4.863	
12	1.083	1.356	1.782	2.179	2.461	2.681	3.055	3.930	4.717	
13	1.079	1.350	1.771	2.160	2.436	2.650	3.012	3.852	4.597	
14	1.076	1.345	1.761	2.145	2.415	2.625	2.977	3.787	4.499	
15	1.074	1.341	1.753	2.131	2.397	2.602	2.947	3.733	4.417	
16	1.071	1.337	1.746	2.120	2.382	2.583	2.921	3.686	4.346	
17	1.069	1.333	1.740	2.110	2.368	2.567	2.898	3.646	4.286	
18	1.067	1.330	1.734	2.101	2.356	2.552	2.878	3.611	4.233	
19	1.066	1.328	1.729	2.093	2.346	2.539	2.861	3.579	4.187	
20	1.064	1.325	1.725	2.086	2.336	2.528	2.845	3.552	4.146	
21	1.063	1.323	1.721	2.080	2.328	2.518	2.831	3.527	4.109	
22	1.061	1.321	1.717	2.074	2.320	2.508	2.819	3.505	4.077	
23	1.060	1.319	1.714	2.069	2.313	2.500	2.807	3.485	4.047	
24	1.059	1.318	1.711	2.064	2.307	2.492	2.797	3.467	4.021	
25	1.058	1.316	1.708	2.060	2.301	2.485	2.787	3.450	3.997	
26	1.058	1.315	1.706	2.056	2.296	2.479	2.779	3.435	3.974	
27	1.057	1.314	1.703	2.052	2.291	2.473	2.771	3.421	3.954	
28	1.056	1.313	1.701	2.048	2.286	2.467	2.763	3.408	3.935	
29	1.055	1.311	1.699	2.045	2.282	2.462	2.756	3.396	3.918	
30	1.055	1.310	1.697	2.042	2.278	2.457	2.750	3.385	3.902	
40	1.050	1.303	1.684	2.021	2.250	2.423	2.704	3.307	3.788	
50	1.047	1.299	1.676	2.009	2.234	2.403	2.678	3.261	3.723	
60	1.045	1.296	1.671	2.000	2.223	2.390	2.660	3.232	3.681	
120	1.041	1.289	1.658	1.980	2.196	2.358	2.617	3.160	3.578	