考試科目	應用統計	所別	企業管理	考試時間	六月二日 星期二 上午第二節

1. A career consultant wants to know whether individuals with degrees in business administration who work in the functional areas of (1) management, (2) accounting, and (3) finance have the same interest in business details. Interest in business detail is measured by an index. Random samples of interest in business detail were taken from individuals who work in the three functional areas, and the results are presented in the accompanying table.

   (1) Find the grand mean for all of the sample data. (5%)
   (2) Find the between-groups estimate of variance. (5%)
   (3) Find the within-groups estimate of variance. (5%)
   (4) Test the hypothesis that the means are the same for all three groups. Use .05 for the level of significance. (5%)

	Management	Accounting	Finance
	6	10	10
	5	13	7
	6	9	8
	5	8	
n_j	4	4	3
$\bar{x}_j$	5.50	10.00	8.33
s_j	.577	2.16	1.53

2. A food-processing company packages a product that is periodically inspected by the Food and Drug Administration (FDA). The FDA has ruled that the company's product may have no more than 2.0 grams of a certain toxic substance in it. Past records of the company show that packages of this product have a mean weight of toxic substance equal to 1.25 grams per package and that the weights are normally distributed around 1.25 grams with a standard deviation of .50 grams.
   (1) What proportion of the individual packages exceed the FDA limit ? (5%)
   (2) An FDA inspector plans to take a preliminary sample of 25 packages. If they find that the mean weight of toxic substance in this sample exceeds 1.6 grams, they will close down the plant and have an extensive inspection of the company's entire inventory. What is the probability that they will close the plant? (5%)

3. ABC accounting firm developed a multiple regression model to predict CPA exam scores Y from grade point averages X1 and months of accounting experience X2. Data were collected for ten accountants and are presented in the accompanying table.
   (1) Find the predicted value for Y given that X1 = 3.0 and X2 = 9.0. (5%)
   (2) Test the hypothesis H0: B1 = B2 = 0. Use a significance level of 0.5. (5%)
   (3) Test the hypothesis that X2 adds no additional explanatory power to the equation over that which X1 provides. Use a

備考	試題隨卷繳交

考試科目	應用統計	所別	企管所	考試時間	月 日 星期 上下午第 節

significance level of .50. (5%)

Analysis of Variance

	Sum of Squares	d.f.	Mean Square	F Ratio
Regression	1281.49	2		
Residual	263.43	7		

Variable	Coefficient	Std. error
Intercept	-21.59	
GPA	21.68	5.54
EXPER	2.98	0.71

---

4. Five years ago the Department of Transportation did a study of automobile pollution at a particular location. During the month of May it found that the mean pollution count was 132. During May this year the department took a random sample of n = 8 days and found that the sample mean pollution count was 120 and the sample standard deviation was s = 10. Test the hypothesis that the pollution mean count is still 132 against the alternative that the mean is now less than 132. Use α = .025. Pollution counts are normally distributed. (10%)

5. Teams A and B are competing in the World Series, and the probility that A wins any one game is 0.6.
   (1) Find the probability that A wins in four games. (5%)
   (2) Find the probability that B wins in five games. (5%)
   (3) Find the probability that six games are required to complete the series. (5%)

6. The accompanying table presents the profits for ABC Company, manufacturing operation (in thousands of NT dollars), where there are three alternative machines that can be selected (A1, A2, A3) to produce a product, and the demand for the product might be high, moderate, or low (E1, E2, E3).

   (1) Find the optimal action using the Bayes criterion. (5%)
   (2) Find the opportunity loss table. (5%)
   (3) Find the Expected Value of Perfect Information. (5%)

		Action		
Event	Probability	A1 Machine 1	A2 Machine 2	A3 Machine 3
E1	.20	7	28	-9
E2	.35	10	-20	1
E3	.45	-8	13	15

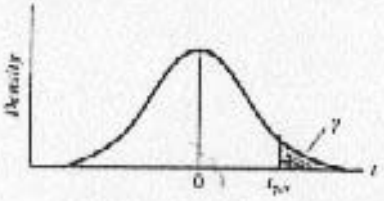
考試科目	應用統計	所別	企管所	考試時間	月 日 星期 上下午第 節

7. For the accompanying distribution of current values (as percentages) of initial investments on the XYZ company, test the hypothesis that the data came from a normal distribution. Let $\alpha = 0.05$ (15%)

Class	Observed Frequency
$25 < X < 50$	15
$50 < X < 75$	25
$75 < X < 100$	30
$100 < X < 125$	20
$125 < X < 150$	10

Table VI

t Distribution Values

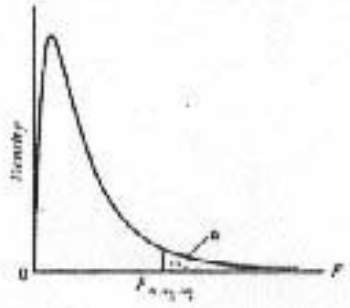


Degrees of Freedom ν	$t_{.40}$	$t_{.25}$	$t_{.025}$	$t_{.01}$	$t_{.005}$
1	3.078	6.314	12.706	31.821	63.657
2	1.886	2.920	4.303	6.965	9.925
3	1.638	2.353	3.182	4.541	5.841
4	1.533	2.132	2.776	3.747	4.604
5	1.476	2.015	2.571	3.365	4.032
6	1.440	1.943	2.447	3.143	3.707
7	1.415	1.895	2.365	2.998	3.499
8	1.397	1.860	2.306	2.896	3.355
9	1.383	1.833	2.262	2.821	3.250
10	1.372	1.812	2.228	2.764	3.169
11	1.363	1.796	2.201	2.718	3.106
12	1.356	1.782	2.179	2.681	3.055
13	1.350	1.771	2.160	2.650	3.012
14	1.345	1.761	2.145	2.624	2.977
15	1.341	1.753	2.131	2.602	2.947
16	1.337	1.746	2.120	2.583	2.921
17	1.333	1.740	2.110	2.567	2.898
18	1.330	1.734	2.101	2.552	2.878
19	1.328	1.729	2.093	2.539	2.861
20	1.325	1.725	2.086	2.528	2.845
21	1.323	1.721	2.080	2.518	2.831
22	1.321	1.717	2.074	2.508	2.819
23	1.319	1.714	2.069	2.500	2.807
24	1.318	1.711	2.064	2.492	2.797
25	1.316	1.708	2.060	2.485	2.787
26	1.315	1.706	2.056	2.479	2.779
27	1.314	1.703	2.052	2.473	2.771
28	1.313	1.701	2.048	2.467	2.763
29	1.311	1.699	2.045	2.462	2.756
30	1.310	1.697	2.042	2.457	2.750
40	1.303	1.684	2.021	2.423	2.704
60	1.296	1.671	2.000	2.390	2.660
120	1.289	1.658	1.980	2.358	2.617
∞	1.282	1.645	1.960	2.326	2.576

Note: For example, if $\gamma = .05$ and $\nu = 15$, then $t_{\gamma,\nu} = t_{.05,\,15} = 1.753$.

試科目	應用統計	所別	企管所	考試時間	月 日 星期 上下午第 節

Table VII *F* Distribution Values



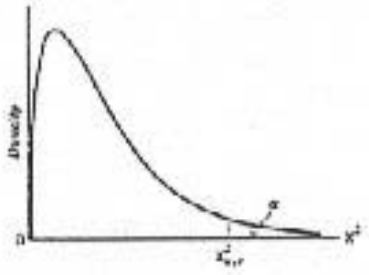
F Values When α = .05

ν_2 \ ν_1	1	2	3	4	5	6	7	8	9
1	161.45	199.50	215.71	224.58	230.16	233.99	236.77	238.88	240.54
2	18.513	19.000	19.164	19.247	19.296	19.330	19.353	19.371	19.385
3	10.128	9.5521	9.2766	9.1172	9.0135	8.9406	8.8868	8.8452	8.8123
4	7.7086	6.9443	6.5914	6.3883	6.2560	6.1631	6.0942	6.0410	5.9988
5	6.6079	5.7861	5.4095	5.1922	5.0503	4.9503	4.8759	4.8183	4.7725
6	5.9874	5.1433	4.7571	4.5337	4.3874	4.2839	4.2066	4.1468	4.0990
7	5.5914	4.7374	4.3468	4.1203	3.9715	3.8660	3.7870	3.7257	3.6767
8	5.3177	4.4590	4.0662	3.8378	3.6875	3.5806	3.5005	3.4381	3.3881
9	5.1174	4.2565	3.8626	3.6331	3.4817	3.3738	3.2927	3.2296	3.1789
10	4.9646	4.1028	3.7083	3.4780	3.3258	3.2172	3.1355	3.0717	3.0204
11	4.8443	3.9823	3.5874	3.3567	3.2039	3.0946	3.0123	2.9480	2.8962
12	4.7472	3.8853	3.4903	3.2592	3.1059	2.9961	2.9134	2.8486	2.7964
13	4.6672	3.8056	3.4105	3.1791	3.0254	2.9153	2.8321	2.7669	2.7144
14	4.6001	3.7389	3.3439	3.1122	2.9582	2.8477	2.7641	2.6987	2.6458
15	4.5431	3.6823	3.2874	3.0556	2.9013	2.7905	2.7066	2.6408	2.5876
16	4.4940	3.6337	3.2389	3.0069	2.8524	2.7413	2.6572	2.5911	2.5377
17	4.4513	3.5915	3.1968	2.9647	2.8100	2.6987	2.6143	2.5480	2.4943
18	4.4139	3.5546	3.1599	2.9277	2.7729	2.6613	2.5767	2.5102	2.4563
19	4.3808	3.5219	3.1274	2.8951	2.7401	2.6283	2.5435	2.4768	2.4227
20	4.3513	3.4928	3.0984	2.8661	2.7109	2.5990	2.5140	2.4471	2.3928
21	4.3248	3.4668	3.0725	2.8401	2.6848	2.5757	2.4876	2.4205	2.3661
22	4.3009	3.4434	3.0491	2.8167	2.6613	2.5491	2.4638	2.3965	2.3419
23	4.2793	3.4221	3.0280	2.7955	2.6400	2.5277	2.4422	2.3748	2.3201
24	4.2597	3.4028	3.0088	2.7763	2.6207	2.5081	2.4226	2.3551	2.3002
25	4.2417	3.3852	2.9912	2.7587	2.6030	2.4904	2.4047	2.3371	2.2821
26	4.2252	3.3690	2.9751	2.7426	2.5868	2.4741	2.3883	2.3205	2.2655
27	4.2100	3.3541	2.9604	2.7278	2.5719	2.4591	2.3732	2.3053	2.2501
28	4.1960	3.3404	2.9467	2.7141	2.5581	2.4453	2.3593	2.2913	2.2360
29	4.1830	3.3277	2.9340	2.7014	2.5454	2.4324	2.3463	2.2782	2.2229
30	4.1709	3.3158	2.9223	2.6896	2.5336	2.4205	2.3343	2.2662	2.2107
40	4.0848	3.2317	2.8387	2.6060	2.4495	2.3359	2.2490	2.1802	2.1240
60	4.0012	3.1504	2.7581	2.5252	2.3683	2.2540	2.1665	2.0970	2.0401
120	3.9201	3.0718	2.6802	2.4472	2.2900	2.1750	2.0867	2.0164	1.9588
∞	3.8415	2.9957	2.6049	2.3719	2.2141	2.0986	2.0096	1.9384	1.8799

Note: For example, if $\alpha = .05$, $\nu_1 = 4$, and $\nu_2 = 7$, then $F_{\alpha,\nu_1,\nu_2} = F_{.05,4,7} = 4.1203$, where ν_1 is the numerator degrees of freedom and ν_2 is the denominator degrees of freedom.

試科目	應用統計	所別	企管所	考試時間	星期　月　日　上午/下午第　節

χ^2 Distribution Values



Degrees of Freedom ν	$\chi^2_{.100}$	$\chi^2_{.050}$	$\chi^2_{.025}$	$\chi^2_{.010}$	$\chi^2_{.005}$
1	2.71	3.84	5.02	6.63	7.88
2	4.61	5.99	7.38	9.21	10.60
3	6.25	7.81	9.35	11.34	12.84
4	7.78	9.49	11.14	13.28	14.86
5	9.24	11.07	12.83	15.09	16.75
6	10.64	12.59	14.45	16.81	18.55
7	12.02	14.07	16.01	18.48	20.28
8	13.36	15.51	17.53	20.09	21.96
9	14.68	16.92	19.02	21.67	23.59
10	15.99	18.31	20.48	23.21	25.19
11	17.28	19.68	21.92	24.72	26.76
12	18.55	21.03	23.34	26.22	28.30
13	19.81	22.36	24.74	27.69	29.82
14	21.06	23.68	26.12	29.14	31.32
15	22.31	25.00	27.49	30.58	32.80
16	23.54	26.30	28.85	32.00	34.27
17	24.77	27.59	30.19	33.41	35.72
18	25.99	28.87	31.53	34.81	37.16
19	27.20	30.14	32.85	36.19	38.58
20	28.41	31.41	34.17	37.57	40.00
21	29.62	32.67	35.48	38.93	41.40
22	30.81	33.92	36.78	40.29	42.80
23	32.01	35.17	38.08	41.64	44.18
24	33.20	36.42	39.36	42.98	45.56
25	34.38	37.65	40.65	44.31	46.93
26	35.56	38.89	41.92	45.64	48.29
27	36.74	40.11	43.19	46.96	49.64
28	37.92	41.34	44.46	48.28	50.99
29	39.09	42.56	45.72	49.59	52.34
30	40.26	43.77	46.98	50.89	53.67
40	51.81	55.76	59.34	63.69	66.77
50	63.17	67.50	71.42	76.15	79.49
60	74.40	79.08	83.30	88.38	91.95
70	85.53	90.53	95.02	100.43	104.22
80	96.58	101.88	106.63	112.33	116.32
90	107.60	113.14	118.14	124.12	128.30
100	118.50	124.34	129.56	135.81	140.17

Note: For example, if $\alpha = .05$ and $\nu = 20$, then $\chi^2_{\alpha,\nu} = \chi^2_{.05,20} = 31.41$.

Table VIII is abridged from Thompson, Catherine M.: "Table of Percentage Points of the χ^2 Distribution," *Biometrika*, Vol. 32 (1942), p. 187, by permission of *Biometrika* Trustees.

國立政治大學八十四學年度研究所博碩士班入學考試命題紙 第 1 頁

考試科目	專業英文	所別	金融門	考試時間	星期 月 日 上下午第 節

一、請根據下列文章的內容，撰寫300字～500字的中文摘要 (50分)

There is a long history of efforts to explain international success in industries in the form of international trade. The classical one is the theory of comparative advantage. Comparative advantage has a specific meaning to economists.[21] Adam Smith is credited with the notion of absolute advantage, in which a nation exports an item if it is the world's low-cost producer. David Ricardo refined this notion to that of comparative advantage, recognizing that market forces will allocate a nation's resources to those industries where it is relatively most productive. This means that a nation might still import a good where it could be the low-cost producer if it is even more productive in producing other goods. As I have discussed, both absolute and relative advantage are necessary for trade.

In Ricardo's theory, trade was based on labor productivity differences between nations.[22] He attributed these to unexplained differences in the environment or "climate" of nations that favored some industries. While Ricardo was on the right track, however, the focus of attention in trade theory shifted in other directions. The dominant version of comparative advantage theory, due initially to Heckscher and Ohlin, is based on the idea that nations all have equivalent technology but differ in their endowments of so-called factors of production such as land, labor, natural resources, and capital.[23] Factors are nothing more than the basic inputs necessary for production. Nations gain factor-based comparative advantage in industries that make intensive use of the factors they possess in abundance. They export these goods, and import those for which they have a comparative factor disadvantage.[24] Nations with abundant, low-cost labor such as Korea, for example, will export labor-intensive goods such as apparel and electronic assemblies. Nations with rich endowments of raw materials or arable land will export products that depend on them. Sweden's strong historical position in the steel industry, for example, developed because Swedish iron ore deposits have a very low content of phosphorous impurities, resulting in higher-quality steel from blast furnaces.

考試科目	專業英文	所別	企業管理	考試時間	月 日 星期 上下午第 節

二、Please (1) summarize the following article and (2) discuss the implications of the article to marketers.

The purpose of business is to get and keep a customer. Or, to use Peter Drucker's more demanding construction, to *create* and keep a customer. The business does this by being wedded constructively to the ideal of innovation, seeking constantly to offer better or more preferred products in such combinations of ways, means, places, and at such prices as to make prospects *prefer* in some acceptable proportion to do business with itself rather than with others. Preferences are constantly being shaped and reshaped. The significance of modern times resides in how technology is shaping the world's preferences into homogenized commonality—into global standardization. Within that commonality enormous variety constantly asserts itself and thrives, as can be seen within the world's single largest domestic market, the United States. But in the process of the world's being shaped into the kind of homogenizing commonality I have been talking about something else clearly happens, namely, the expansion of modern markets into cost-reducing global proportions.

Thus, two vectors operate simultaneously to drive the world: the vector of technology and the vector of globalization. The first helps powerfully to shape human preferences. The second shapes economic realities. With preferences converging, regardless of how much they constantly evolve and also diverge, markets are shaped into magnitudes that allow great economies of scale and therefore reduction of costs and prices.

The modern global corporation, as contrasted to the aging multinational corporation, "impervious to pressure and implacable in execution," seeks constantly to hasten the consummation of what already occurs, to force suitably standardized products and practices onto the entire globe, because that is, indeed, exactly what the world will take, especially when aggressively low prices are linked to quality and reliability.

Given what is everywhere the purpose of a business, the global business, in the spirit of the hedgehog, will shape the vectors of technology and globalization into a great, single strategic fecundity for itself. It will systematically push these vectors toward a converging center, where optimization of high-quality global standardization produces optimally low costs, optimally low prices, and therefore, in combination, optimal patronage at optimal profits for itself. Reciprocally, this means companies that do not adapt to the new global realities will become the victims of those that do and prosper.

國立政治大學八十四學年度研究所博碩士班入學考試命題紙 第 3 頁

考試科目	專業英文	所別	企業管理研究所	考試時間	6月20日 星期二 上午第 1 節

三、

1. Complaints that MBA graduates were arrogant, narrow, and shallow have led a radical overhaul for the *Re-engineering* of business schools all over the world . What do you think about it? Shoud we do something about it ? And how should we do that? (Please answer in English!!) (1/6)

2. 你對中國式管理的看法如何？ 它有發展的空間嗎？ 如果你得到相當的資源與經濟的支援，但唯一的條件就是要你去做有關中國式管理的研究，你會如何去做呢？ （請以英文回答！） (1/6)