

國立臺北大學九十七學年度碩士班招生考試試題

系(所)別：合作經濟學系
 科目：統計學

組別：
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一、(每題4分)選擇題

$Z \sim N(0, 1); P(Z > z_\alpha) = \alpha; z_{0.05} = 1.645; z_{0.025} = 1.96; z_{0.0146} = 2.18; z_{0.1379} = 1.09;$

1. If the function of $f_{X,Y}$ is given by: $f_{X,Y}(x, y) = 10.5x^2y$ for $0 < x^2 < y < 1$ (and 0 otherwise). Then

$P(0 < X < \frac{3}{4}, \frac{1}{4} \leq Y < 1) =$ (a) 12.5; (b) 1.92; (c) 5; (d) 0.63.

2. The joint probabilities of (X, Y) is given in the following.

$\begin{matrix} \backslash & x \\ y & \end{matrix}$	0	1	2	3	Totals
0	0.05	0.21	0	0	0.26
1	0.2	0.26	0.08	0	0.54
2	0	0.06	0.07	0.02	0.15
3	0	0	0.03	0.02	0.05
Totals	0.25	0.53	0.18	0.04	1

Find the correct answers (複選).

(a) $P(2 \leq X \leq 3, 0 \leq Y \leq 2) = 0.17;$ (b) X and Y are dependent; (c) $E(X|Y=0) = 21/26;$ (d) $E(X|Y=0) = 15/26;$
 (e) $E(Y|X=2) = 31/18;$ (f) $E(Y|X=2) = 31/28.$

3. A shipment (裝運) of 10 items has two defective (有缺陷的) and eight nondefective items. In the inspection of the shipment, a sample of items will be selected and tested. If a defective item is found, the shipment of 10 items will be rejected. Define A = the shipment will be rejected if a sample of 3 items is selected; B = the shipment will be rejected if a sample of 4 items is selected; C = the shipment will be rejected if a sample of 5 items is selected. Find the correct statements (複選).

(a) $P(A) = 0.3;$ (b) $P(A) = 0.5333;$ (c) $P(B) = 0.8;$ (d) $P(B) = 0.6667;$ (e) $P(C) = 0.778;$ (f) $P(C) = 0.6667.$

4. The company's president believes that 30% of the firm's orders come from the first-time customers. A simple random sample of 100 orders will be used to estimate the proportion of the first-time customers. Assume that the president is correct and $p = 0.3$. Let \bar{p} be the estimator of p . Find the correct statements (複選).

(a) $P(0.2 < \bar{p} < 0.4) = 0.8508;$ (b) $P(0.2 < \bar{p} < 0.4) = 0.9708;$ (c) $P(0.25 < \bar{p} < 0.35) = 0.6;$
 (d) $P(0.25 < \bar{p} < 0.35) = 0.7242;$ (e) The sample distribution of \bar{p} is not normally distributed.

5. Find the correct statements (複選).

(a) As the significance level increases, the probability of a Type I error increases; (b) As the power increases, the probability of a Type II error increases; (c) As the significance level increases, the size of the rejection region increases;
 (d) The probability of a Type I error and the probability of a Type II error always sum to 1.

6. The Ace Delivery people suspected that the gasoline at the Quick-Chek stores was less expensive than that at Texgas before they obtained any data. Let μ_1 represents the average prices at all of the Texgan stations and μ_2 represents the average prices at all of the Quick-Chek stations in the area. The data collected showed: $n_1 = 35, \bar{X}_1 = 1.48, n_2 = 40, \bar{X}_2 = 1.39,$ assume $\sigma_1 = 0.12$ and $\sigma_2 = 0.1$. Given $\alpha = 0.05$. Use the collected data to find the correct statements (複選).

(a) Quick-Chek stores do charge less for gasoline than do the Texgas stations; (b) No sufficient evidence conclude Quick-Chek stores do charge less for gasoline than do the Texgas stations; (c) p-value is less than 0.01; (d) p-value is greater than 0.01.

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7. A crime reporter was told that, on the average, 3000 burglaries (搶劫) per month occurred in his city. The reporter examined past data, which were used to compute a 95% confidence interval for the number of burglaries per month. The confidence interval was from 2176 to 2784. Given $\alpha = 5\%$, find the correct statements (複選). The data tend to support (a) $H_a: \mu \neq 2600$; (b) $H_a: \mu \neq 3000$; (c) $H_a: \mu \neq 2500$; (d) $H_a: \sigma \neq 1700$; (e) $H_a: \mu \neq 1900$.

二、問答題

- (5分) 請描述中央極限定理 (Central Limit Theorem) 的重要性並舉例說明。
- (5分) 假設檢定與信賴區間皆是統計推論的工具, 請說明兩者所欲推論的訊息之差別。
- (4分) 請說明建構樣本平均值 (\bar{X}) 的抽樣分配的可能方式。
- (4分) 請說明點估計與區間估計的差別。
- (4分) 請詳細說明 "好的估計式 (good estimator)" 之準則。

三、(30分) 某高中過去的資料顯示, 模擬考成績 X 與學測成績 Y 呈高度正相關。欲以簡單線性迴歸模式建立學測成績的預測公式。30位該高中的隨機樣本資料顯示模擬考平均成績為 95, 標準差為 25; 學測成績 58, 標準差 18; 相關係數 0.85。

- 請以最小平方 (least square) 法, 求出以模擬考成績預測學測成績的簡單線性迴歸模式。
- 變異數分析表顯示, 模擬考成績對學測成績是否有影響的檢定 F 統計量為 33.64, 請問在 5% 的顯著水準下, 檢定結果為何?
- 呈上題, 令 β 為迴歸係數, 請根據上述資料請問檢定 $H_0: \beta = 1/2$ vs. $H_1: \beta \neq 1/2$ 的檢定 p -值的範圍為何?

四、(20分) 欲比較男、女業務員使用網路行銷、傳統行銷及混合行銷等三種行銷方式對營業額的影響。42位業務員的資料的部分變異數分析結果如下:

Analysis of Variance for 營業額,

Source	SS
性別	564.7
行銷方式	1810.3
交互作用	343.2
Error	
Total	7179.3

- 在 1% 的顯著水準下, 請檢定性別與行銷方式的交互作用是否具有顯著性。
- 如果不考慮交互作用, 請改選變異數分析表 (ANOVA), 並分別檢定不同行銷方式及性別對營業額在 1% 顯著水準下是否有顯著性差異。

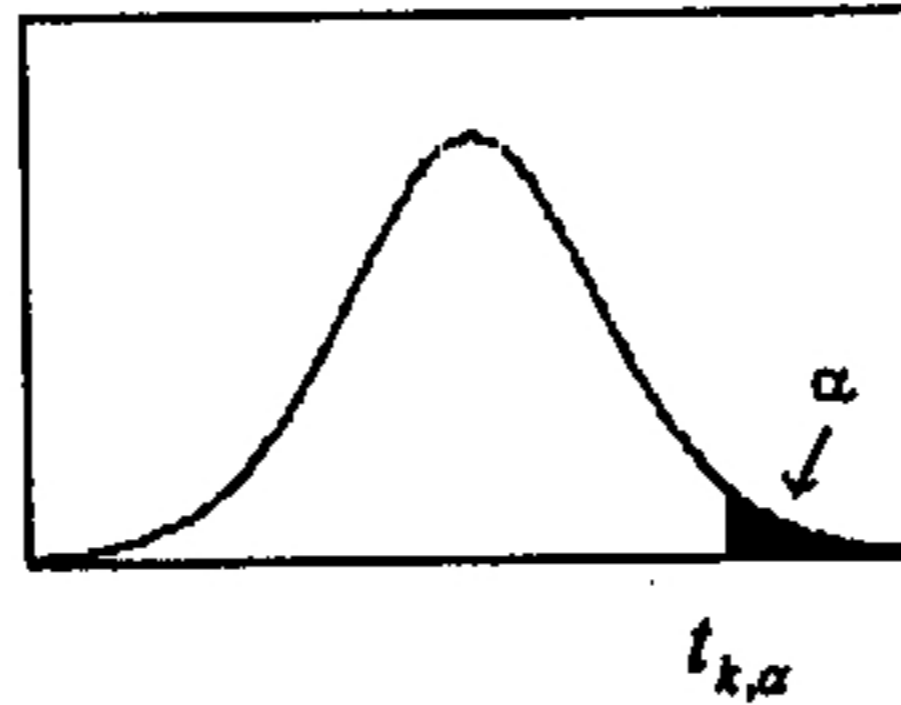
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表3. t 分配表

$$P(t_k \geq t_{k,\alpha}) = \alpha$$



自由度	單尾顯著水準						
	0.1	0.05	0.025	0.01	0.005	0.0025	0.001
1	3.0777	6.3138	12.7062	31.8205	63.6567	127.3213	318.3088
2	1.8856	2.9200	4.3027	6.9646	9.9248	14.0890	22.3271
3	1.6377	2.3534	3.1824	4.5407	5.8409	7.4533	10.2145
4	1.5332	2.1318	2.7764	3.7469	4.6041	5.5976	7.1732
5	1.4759	2.0150	2.5706	3.3649	4.0321	4.7733	5.8934
6	1.4398	1.9432	2.4469	3.1427	3.7074	4.3168	5.2076
7	1.4149	1.8946	2.3646	2.9980	3.4995	4.0293	4.7853
8	1.3968	1.8595	2.3060	2.8965	3.3554	3.8325	4.5008
9	1.3830	1.8331	2.2622	2.8214	3.2498	3.6897	4.2968
10	1.3722	1.8125	2.2281	2.7638	3.1693	3.5814	4.1437
11	1.3634	1.7959	2.2010	2.7181	3.1058	3.4966	4.0247
12	1.3562	1.7823	2.1788	2.6810	3.0545	3.4284	3.9296
13	1.3502	1.7709	2.1604	2.6503	3.0123	3.3725	3.8520
14	1.3450	1.7613	2.1448	2.6245	2.9768	3.3257	3.7874
15	1.3406	1.7531	2.1314	2.6025	2.9467	3.2860	3.7328
16	1.3368	1.7459	2.1199	2.5835	2.9208	3.2520	3.6862
17	1.3334	1.7396	2.1098	2.5669	2.8982	3.2224	3.6458
18	1.3304	1.7341	2.1009	2.5524	2.8784	3.1966	3.6105
19	1.3277	1.7291	2.0930	2.5395	2.8609	3.1737	3.5794
20	1.3253	1.7247	2.0860	2.5280	2.8453	3.1534	3.5518
21	1.3232	1.7207	2.0796	2.5176	2.8314	3.1352	3.5272
22	1.3212	1.7171	2.0739	2.5083	2.8188	3.1188	3.5050
23	1.3195	1.7139	2.0687	2.4999	2.8073	3.1040	3.4850
24	1.3178	1.7109	2.0639	2.4922	2.7969	3.0905	3.4668
25	1.3163	1.7081	2.0595	2.4851	2.7874	3.0782	3.4502
26	1.3150	1.7056	2.0555	2.4786	2.7787	3.0669	3.4350
27	1.3137	1.7033	2.0518	2.4727	2.7707	3.0565	3.4210
28	1.3125	1.7011	2.0484	2.4671	2.7633	3.0469	3.4082
29	1.3114	1.6991	2.0452	2.4620	2.7564	3.0380	3.3962
30	1.3104	1.6973	2.0423	2.4573	2.7500	3.0298	3.3852
35	1.3062	1.6896	2.0301	2.4377	2.7238	2.9960	3.3400
40	1.3031	1.6839	2.0211	2.4233	2.7045	2.9712	3.3069
45	1.3006	1.6794	2.0141	2.4121	2.6896	2.9521	3.2815
50	1.2987	1.6759	2.0086	2.4033	2.6778	2.9370	3.2614
60	1.2958	1.6706	2.0003	2.3901	2.6603	2.9146	3.2317
70	1.2938	1.6669	1.9944	2.3808	2.6479	2.8987	3.2108
80	1.2922	1.6641	1.9901	2.3739	2.6387	2.8870	3.1953
90	1.2910	1.6620	1.9867	2.3685	2.6316	2.8779	3.1833
100	1.2901	1.6602	1.9840	2.3642	2.6259	2.8707	3.1737
200	1.2858	1.6525	1.9719	2.3451	2.6006	2.8385	3.1315
300	1.2844	1.6499	1.9679	2.3388	2.5923	2.8279	3.1176
400	1.2837	1.6487	1.9659	2.3357	2.5882	2.8227	3.1107
500	1.2832	1.6479	1.9647	2.3338	2.5857	2.8195	3.1066
600	1.2830	1.6474	1.9639	2.3326	2.5840	2.8175	3.1039
700	1.2828	1.6470	1.9634	2.3317	2.5829	2.8160	3.1019
800	1.2826	1.6468	1.9629	2.3310	2.5820	2.8148	3.1005
900	1.2825	1.6465	1.9626	2.3305	2.5813	2.8140	3.0993
1000	1.2824	1.6464	1.9623	2.3301	2.5808	2.8133	3.0984

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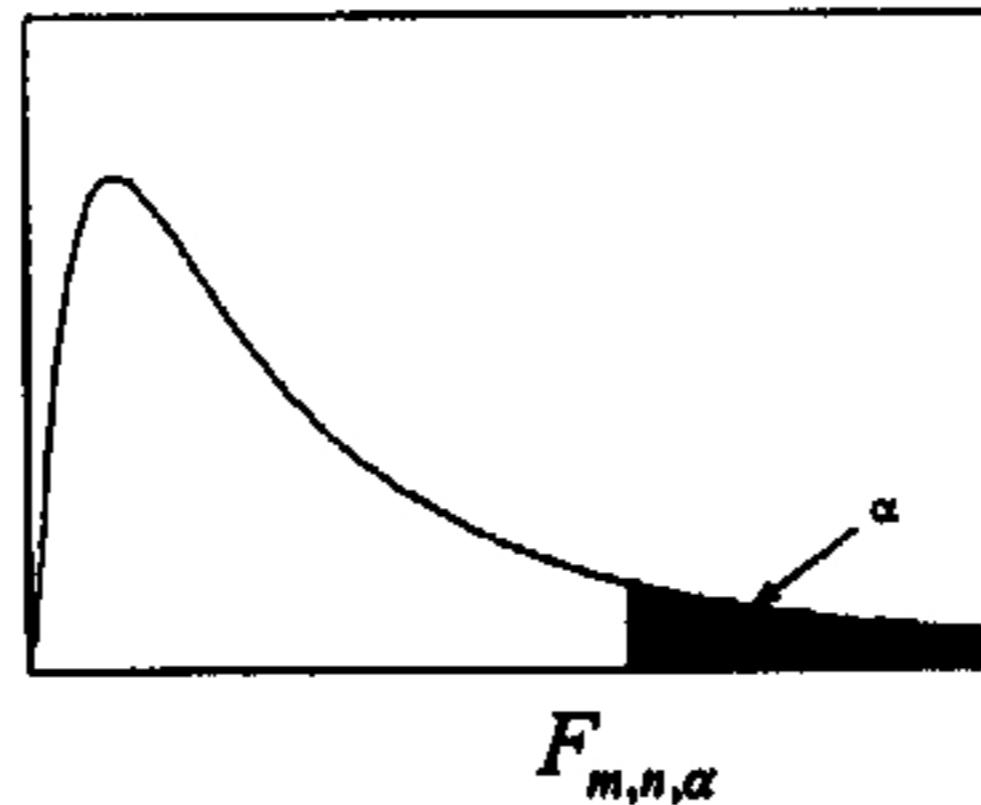
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表4. F分配表(續3)

(ii) $\alpha = 0.05$

$$P(F_{m,n} \geq F_{m,n,\alpha}) = \alpha$$



分母自由度 n

		分子自由度 m								
		1	2	3	4	5	6	7	8	9
1	161.448	199.500	215.707	224.583	230.162	233.986	236.768	238.883	240.543	
2	18.5128	19.0000	19.1643	19.2468	19.2964	19.3295	19.3532	19.3710	19.3848	
3	10.1280	9.5521	9.2766	9.1172	9.0135	8.9406	8.8867	8.8452	8.8123	
4	7.7086	6.9443	6.5914	6.3882	6.2561	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	4.2067	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	3.8379	3.6875	3.5806	3.5005	3.4381	3.3881	
9	5.1174	4.2565	3.8625	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	2.7642	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	4.3807	3.5219	3.1274	2.8951	2.7401	2.6283	2.5435	2.4768	2.4227	
20	4.3512	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	2.5727	2.4876	2.4205	2.3660	
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	2.5082	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	2.9752	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	2.2783	2.2229	
30	4.1709	3.3158	2.9223	2.6896	2.5336	2.4205	2.3343	2.2662	2.2107	
35	4.1213	3.2674	2.8742	2.6415	2.4851	2.3718	2.2852	2.2167	2.1608	
40	4.0847	3.2317	2.8387	2.6060	2.4495	2.3359	2.2490	2.1802	2.1240	
45	4.0566	3.2043	2.8115	2.5787	2.4221	2.3083	2.2212	2.1521	2.0958	
50	4.0343	3.1826	2.7900	2.5572	2.4004	2.2864	2.1992	2.1299	2.0734	
60	4.0012	3.1504	2.7581	2.5252	2.3683	2.2541	2.1665	2.0970	2.0401	
70	3.9778	3.1277	2.7355	2.5027	2.3456	2.2312	2.1435	2.0737	2.0166	
80	3.9604	3.1108	2.7188	2.4859	2.3287	2.2142	2.1263	2.0564	1.9991	
90	3.9469	3.0977	2.7058	2.4729	2.3157	2.2011	2.1131	2.0430	1.9856	
100	3.9361	3.0873	2.6955	2.4626	2.3053	2.1906	2.1025	2.0323	1.9748	
120	3.9201	3.0718	2.6802	2.4472	2.2899	2.1750	2.0868	2.0164	1.9588	

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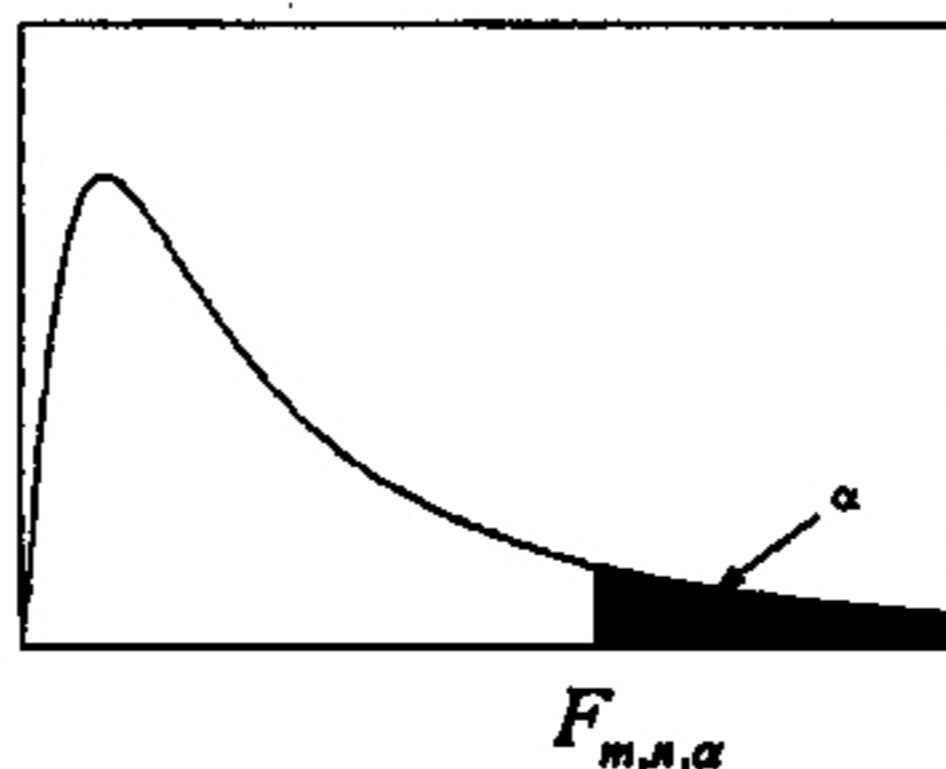
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表4. F分配表(續4)

(ii) $\alpha = 0.05$

$$P(F_{m,n} \geq F_{m,n,\alpha}) = \alpha$$



分母自由度 n

	分子自由度 m									
	10	12	15	20	24	30	40	60	120	
1	241.88	243.906	245.950	248.013	249.052	250.095	251.143	252.196	253.253	
2	19.3959	19.4125	19.4291	19.4458	19.4541	19.4624	19.4707	19.4791	19.4874	
3	8.7855	8.7446	8.7029	8.6602	8.6385	8.6166	8.5944	8.5720	8.5494	
4	5.9644	5.9117	5.8578	5.8025	5.7744	5.7459	5.7170	5.6877	5.6581	
5	4.7351	4.6777	4.6188	4.5581	4.5272	4.4957	4.4638	4.4314	4.3985	
6	4.0600	3.9999	3.9381	3.8742	3.8415	3.8082	3.7743	3.7398	3.7047	
7	3.6365	3.5747	3.5107	3.4445	3.4105	3.3758	3.3404	3.3043	3.2674	
8	3.3472	3.2839	3.2184	3.1503	3.1152	3.0794	3.0428	3.0053	2.9669	
9	3.1373	3.0729	3.0061	2.9365	2.9005	2.8637	2.8259	2.7872	2.7475	
10	2.9782	2.9130	2.8450	2.7740	2.7372	2.6996	2.6609	2.6211	2.5801	
11	2.8536	2.7876	2.7186	2.6464	2.6090	2.5705	2.5309	2.4901	2.4480	
12	2.7534	2.6866	2.6169	2.5436	2.5055	2.4663	2.4259	2.3842	2.3410	
13	2.6710	2.6037	2.5331	2.4589	2.4202	2.3803	2.3392	2.2966	2.2524	
14	2.6022	2.5342	2.4630	2.3879	2.3487	2.3082	2.2664	2.2229	2.1778	
15	2.5437	2.4753	2.4034	2.3275	2.2878	2.2468	2.2043	2.1601	2.1141	
16	2.4935	2.4247	2.3522	2.2756	2.2354	2.1938	2.1507	2.1058	2.0589	
17	2.4499	2.3807	2.3077	2.2304	2.1898	2.1477	2.1040	2.0584	2.0107	
18	2.4117	2.3421	2.2686	2.1906	2.1497	2.1071	2.0629	2.0166	1.9681	
19	2.3779	2.3080	2.2341	2.1555	2.1141	2.0712	2.0264	1.9795	1.9302	
20	2.3479	2.2776	2.2033	2.1242	2.0825	2.0391	1.9938	1.9464	1.8963	
21	2.3210	2.2504	2.1757	2.0960	2.0540	2.0102	1.9645	1.9165	1.8657	
22	2.2967	2.2258	2.1508	2.0707	2.0283	1.9842	1.9380	1.8894	1.8380	
23	2.2747	2.2036	2.1282	2.0476	2.0050	1.9605	1.9139	1.8648	1.8128	
24	2.2547	2.1834	2.1077	2.0267	1.9838	1.9390	1.8920	1.8424	1.7896	
25	2.2365	2.1649	2.0889	2.0075	1.9643	1.9192	1.8718	1.8217	1.7684	
26	2.2197	2.1479	2.0716	1.9898	1.9464	1.9010	1.8533	1.8027	1.7488	
27	2.2043	2.1323	2.0558	1.9736	1.9299	1.8842	1.8361	1.7851	1.7306	
28	2.1900	2.1179	2.0411	1.9586	1.9147	1.8687	1.8203	1.7689	1.7138	
29	2.1768	2.1045	2.0275	1.9446	1.9005	1.8543	1.8055	1.7537	1.6981	
30	2.1646	2.0921	2.0148	1.9317	1.8874	1.8409	1.7918	1.7396	1.6835	
35	2.1143	2.0411	1.9629	1.8784	1.8332	1.7856	1.7351	1.6811	1.6226	
40	2.0772	2.0035	1.9245	1.8389	1.7929	1.7444	1.6928	1.6373	1.5766	
45	2.0487	1.9745	1.8949	1.8084	1.7618	1.7126	1.6599	1.6031	1.5406	
50	2.0261	1.9515	1.8714	1.7841	1.7371	1.6872	1.6337	1.5757	1.5115	
60	1.9926	1.9174	1.8364	1.7480	1.7001	1.6491	1.5943	1.5343	1.4673	
70	1.9689	1.8932	1.8117	1.7223	1.6738	1.6220	1.5661	1.5046	1.4351	
80	1.9512	1.8753	1.7932	1.7032	1.6542	1.6017	1.5449	1.4821	1.4107	
90	1.9376	1.8613	1.7789	1.6883	1.6389	1.5859	1.5284	1.4645	1.3914	
100	1.9267	1.8503	1.7675	1.6764	1.6267	1.5733	1.5151	1.4504	1.3757	
120	1.9105	1.8337	1.7505	1.6587	1.6084	1.5543	1.4952	1.4290	1.3519	

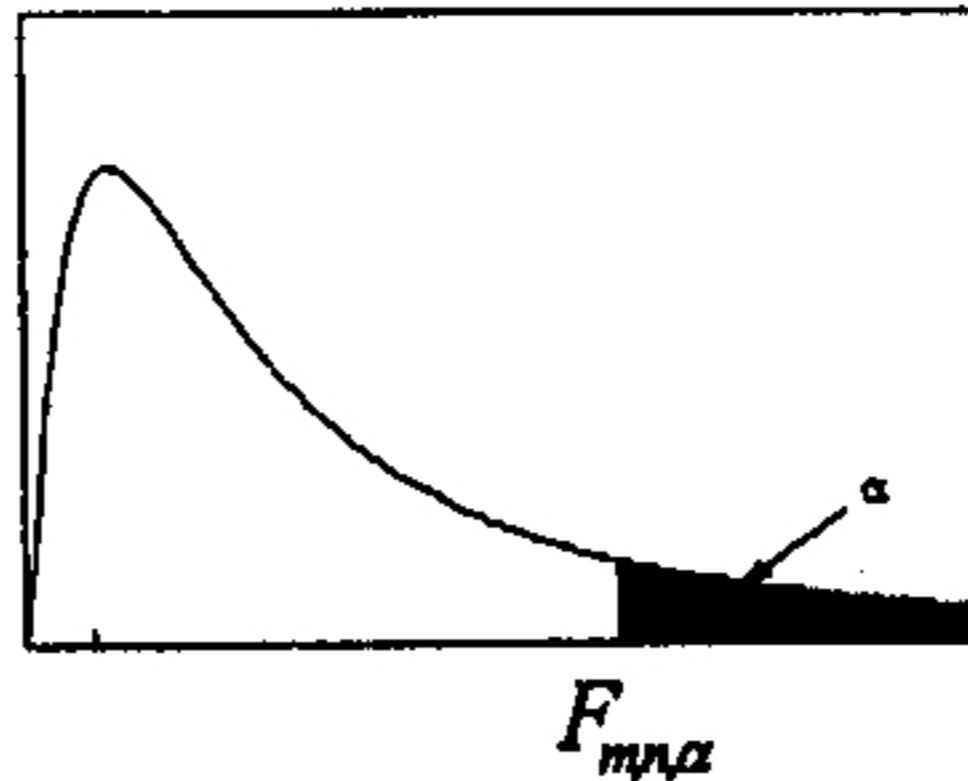
國立臺北大學九十七學年度碩士班招生考試試題

系(所)別：合作經濟學系
 科目：統計學

組別：
 第6頁共7頁
可 不可使用計算機

表4. F分配表(續5)

(iii) $\alpha = 0.025$
 $P(F_{m,n} \geq F_{m,n,\alpha}) = \alpha$



分母自由度 n

	分子自由度 m								
	1	2	3	4	5	6	7	8	9
1	647.789	799.500	864.163	899.583	921.848	937.111	948.217	956.656	963.287
2	38.5063	39.0000	39.1655	39.2484	39.2982	39.3315	39.3552	39.3730	39.3869
3	17.4434	16.0441	15.4392	15.1010	14.8848	14.7347	14.6244	14.5399	14.4731
4	12.2179	10.6491	9.9792	9.6045	9.3645	9.1973	9.0741	8.9796	8.9047
5	10.007	8.4336	7.7636	7.3879	7.1464	6.9777	6.8531	6.7572	6.6811
6	8.8131	7.2599	6.5988	6.2272	5.9876	5.8198	5.6955	5.5996	5.5234
7	8.0727	6.5415	5.8898	5.5226	5.2852	5.1186	4.9949	4.8993	4.823
8	7.5709	6.0595	5.4160	5.0526	4.8173	4.6517	4.5286	4.4333	4.3572
9	7.2093	5.7147	5.0781	4.7181	4.4844	4.3197	4.1970	4.1020	4.0260
10	6.9367	5.4564	4.8256	4.4683	4.2361	4.0721	3.9498	3.8549	3.7790
11	6.7241	5.2559	4.6300	4.2751	4.0440	3.8807	3.7586	3.6638	3.5879
12	6.5538	5.0959	4.4742	4.1212	3.8911	3.7283	3.6065	3.5118	3.4358
13	6.4143	4.9653	4.3472	3.9959	3.7667	3.6043	3.4827	3.3880	3.3120
14	6.2979	4.8567	4.2417	3.8919	3.6634	3.5014	3.3799	3.2853	3.2093
15	6.1995	4.7650	4.1528	3.8043	3.5764	3.4147	3.2934	3.1987	3.1227
16	6.1151	4.6867	4.0768	3.7294	3.5021	3.3406	3.2194	3.1248	3.0488
17	6.0420	4.6189	4.0112	3.6648	3.4379	3.2767	3.1556	3.0610	2.9849
18	5.9781	4.5597	3.9539	3.6083	3.3820	3.2209	3.0999	3.0053	2.9291
19	5.9216	4.5075	3.9034	3.5587	3.3327	3.1718	3.0509	2.9563	2.8801
20	5.8715	4.4613	3.8587	3.5147	3.2891	3.1283	3.0074	2.9128	2.8365
21	5.8266	4.4199	3.8188	3.4754	3.2501	3.0895	2.9686	2.8740	2.7977
22	5.7863	4.3828	3.7829	3.4401	3.2151	3.0546	2.9338	2.8392	2.7628
23	5.7498	4.3492	3.7505	3.4083	3.1835	3.0232	2.9023	2.8077	2.7313
24	5.7166	4.3187	3.7211	3.3794	3.1548	2.9946	2.8738	2.7791	2.7027
25	5.6864	4.2909	3.6943	3.3530	3.1287	2.9685	2.8478	2.7531	2.6766
26	5.6586	4.2655	3.6697	3.3289	3.1048	2.9447	2.8240	2.7293	2.6528
27	5.6331	4.2421	3.6472	3.3067	3.0828	2.9228	2.8021	2.7074	2.6309
28	5.6096	4.2205	3.6264	3.2863	3.0626	2.9027	2.7820	2.6872	2.6106
29	5.5878	4.2006	3.6072	3.2674	3.0438	2.8840	2.7633	2.6686	2.5919
30	5.5675	4.1821	3.5894	3.2499	3.0265	2.8667	2.7460	2.6513	2.5746
35	5.4848	4.1065	3.5166	3.1785	2.9557	2.7961	2.6755	2.5807	2.5039
40	5.4239	4.0510	3.4633	3.1261	2.9037	2.7444	2.6238	2.5289	2.4519
45	5.3773	4.0085	3.4224	3.0860	2.8640	2.7048	2.5842	2.4892	2.4122
50	5.3403	3.9749	3.3902	3.0544	2.8327	2.6736	2.5530	2.4579	2.3808
60	5.2856	3.9253	3.3425	3.0077	2.7863	2.6274	2.5068	2.4117	2.3344
70	5.2470	3.8903	3.3090	2.9748	2.7537	2.5949	2.4743	2.3791	2.3017
80	5.2184	3.8643	3.2841	2.9504	2.7295	2.5708	2.4502	2.3549	2.2775
90	5.1962	3.8443	3.2649	2.9315	2.7109	2.5522	2.4316	2.3363	2.2588
100	5.1786	3.8284	3.2496	2.9166	2.6961	2.5374	2.4168	2.3215	2.2439
120	5.1523	3.8046	3.2269	2.8943	2.6740	2.5154	2.3948	2.2994	2.2217

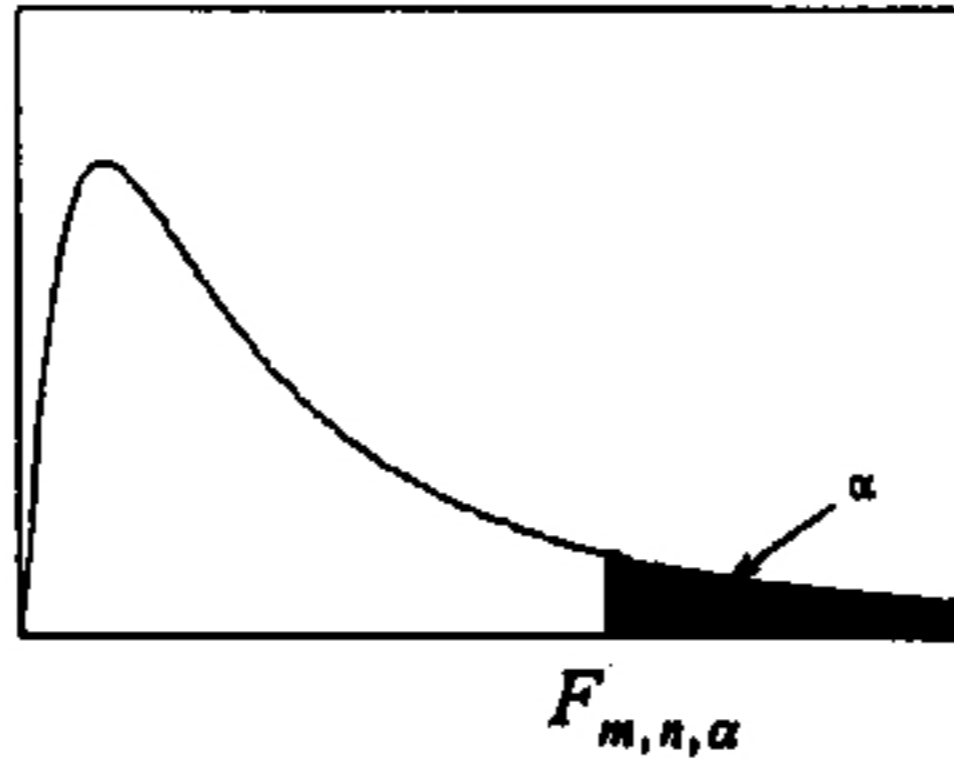
國立臺北大學九十七學年度碩士班招生考試試題

系(所)別：合作經濟學系
 科目：統計學

組別：
 第7頁共7頁
可 不可使用計算機

表4. F分配表(續6)

(iii) $\alpha = 0.025$
 $P(F_{m,n} \geq F_{m,n,\alpha}) = \alpha$



	分子自由度 m									
	10	12	15	20	24	30	40	60	120	
1	968.63	976.71	984.87	993.10	997.25	1001.41	1005.60	1009.80	1014.02	
2	39.3980	39.4146	39.4313	39.4479	39.4562	39.4646	39.4729	39.4812	39.4896	
3	14.4189	14.3366	14.2527	14.1674	14.1241	14.0805	14.0365	13.9921	13.9473	
4	8.8439	8.7512	8.6565	8.5599	8.5109	8.4613	8.4111	8.3604	8.3092	
5	6.6192	6.5245	6.4277	6.3286	6.2780	6.2269	6.1750	6.1225	6.0693	
6	5.4613	5.3662	5.2687	5.1684	5.1172	5.0652	5.0125	4.9589	4.9044	
7	4.7611	4.6658	4.5678	4.4667	4.4150	4.3624	4.3089	4.2544	4.1989	
8	4.2951	4.1997	4.1012	3.9995	3.9472	3.8940	3.8398	3.7844	3.7279	
9	3.9639	3.8682	3.7694	3.6669	3.6142	3.5604	3.5055	3.4493	3.3918	
10	3.7168	3.6209	3.5217	3.4185	3.3654	3.3110	3.2554	3.1984	3.1399	
11	3.5257	3.4296	3.3299	3.2261	3.1725	3.1176	3.0613	3.0035	2.9441	
12	3.3736	3.2773	3.1772	3.0728	3.0187	2.9633	2.9063	2.8478	2.7874	
13	3.2497	3.1532	3.0527	2.9477	2.8932	2.8372	2.7797	2.7204	2.6590	
14	3.1469	3.0502	2.9493	2.8437	2.7888	2.7324	2.6742	2.6142	2.5519	
15	3.0602	2.9633	2.8621	2.7559	2.7006	2.6437	2.5850	2.5242	2.4611	
16	2.9862	2.8890	2.7875	2.6808	2.6252	2.5678	2.5085	2.4471	2.3831	
17	2.9222	2.8249	2.7230	2.6158	2.5598	2.5020	2.4422	2.3801	2.3153	
18	2.8664	2.7689	2.6667	2.5590	2.5027	2.4445	2.3842	2.3214	2.2558	
19	2.8172	2.7196	2.6171	2.5089	2.4523	2.3937	2.3329	2.2696	2.2032	
20	2.7737	2.6758	2.5731	2.4645	2.4076	2.3486	2.2873	2.2234	2.1562	
21	2.7348	2.6368	2.5338	2.4247	2.3675	2.3082	2.2465	2.1819	2.1141	
22	2.6998	2.6017	2.4984	2.3890	2.3315	2.2718	2.2097	2.1446	2.0760	
23	2.6682	2.5699	2.4665	2.3567	2.2989	2.2389	2.1763	2.1107	2.0415	
24	2.6396	2.5411	2.4374	2.3273	2.2693	2.2090	2.1460	2.0799	2.0099	
25	2.6135	2.5149	2.4110	2.3005	2.2422	2.1816	2.1183	2.0516	1.9811	
26	2.5896	2.4908	2.3867	2.2759	2.2174	2.1565	2.0928	2.0257	1.9545	
27	2.5676	2.4688	2.3644	2.2533	2.1946	2.1334	2.0693	2.0018	1.9299	
28	2.5473	2.4484	2.3438	2.2324	2.1735	2.1121	2.0477	1.9797	1.9072	
29	2.5286	2.4295	2.3248	2.2131	2.1540	2.0923	2.0276	1.9591	1.8861	
30	2.5112	2.4120	2.3072	2.1952	2.1359	2.0739	2.0089	1.9400	1.8664	
35	2.4403	2.3406	2.2350	2.1218	2.0617	1.9986	1.9321	1.8613	1.7851	
40	2.3882	2.2882	2.1819	2.0677	2.0069	1.9429	1.8752	1.8028	1.7242	
45	2.3483	2.2480	2.1412	2.0262	1.9647	1.9000	1.8313	1.7574	1.6767	
50	2.3168	2.2162	2.1090	1.9933	1.9313	1.8659	1.7963	1.7211	1.6386	
60	2.2702	2.1692	2.0613	1.9445	1.8817	1.8152	1.7440	1.6668	1.5810	
70	2.2374	2.1361	2.0277	1.9100	1.8466	1.7792	1.7069	1.6279	1.5394	
80	2.2130	2.1115	2.0026	1.8843	1.8204	1.7523	1.6790	1.5987	1.5079	
90	2.1942	2.0925	1.9833	1.8644	1.8001	1.7315	1.6574	1.5758	1.4831	
100	2.1793	2.0773	1.9679	1.8486	1.7839	1.7148	1.6401	1.5575	1.4631	
120	2.1570	2.0548	1.9450	1.8249	1.7597	1.6899	1.6141	1.5299	1.4327	

分母自由度 n