國立政治大學 108 學年度 碩士暨碩士在職專班 招生考試試題

考試科目	會計學	系所別	財政學系	考試時間	2 月 18 日(一) 第 3 節

一、(10%)甲公司 2017 年初與年底之機器設備累計折舊科目餘額分別為$560,000 與$430,000，當年度折舊費用為$70,000，年中僅處分一台機器，成本$250,000，得款$120,000，則處分資產利益或損失金額為多少？

二、(10%)乙公司於 2018 年初以$3,500,000 取得某一新產品的專利權，估計經濟年限為 5 年，採直線法攤銷。

由於科技日新月異，該公司於 2019 年底估計此項專利權僅能再使用 2 年，淨公允價值為$1,500,000，每年年底可產生現金淨流入$1,250,000，該公司折現率為 8%。請問大米科技公司 2019 年應認列專利權減損損失為多少？

三、(10%)丙公司於 2017 年初購入一批機器設備成本$540,000，估計耐用年限四年，無殘值，帳上採直線法折舊，但報稅時，改採年數合計法。2017 至 2019 年的稅前財務所得分別為$800,000，$720,000 及$780,000，所得稅率分別為 20%，18%及 16%，財稅差異皆為這批機器設備的折舊所導致。

請問

丙公司 2017 年應認列的所得稅費用為多少？ (5%)

丙公司 2019 年應認列的所得稅費用及應付所得稅分別為多少？ (5%)

四、(10%)丁公司在2017年底時有下列幾項遞延所得稅資產或負債：

(1) 2017年帳上認列了一筆分期銷貨毛利$300,000，但稅法規定須等到收現時才可認列，該批分期銷貨收入為$1,200,000，甲公司預估X8年收現$400,000，X9年收現$800,000。

(2) 2017年底時外幣應收帳款依期末匯率重新評價，帳上認列兌換損失$30,000，而稅法規定收現時方可認列，甲公司將於2018年收現該筆應收帳款。

假設甲公司成立於2017年初，無其他財稅差異，且該公司符合互抵條件，稅率維持17%。試問甲公司2017年底資產負債表上，有關遞延所得稅的相關科目應如何表達？

五、(20%)忠孝公司 2018 年 1 月 1 日開始建造一部機器以供未來生產使用，至 2018 年 12 月 31 日完工，並於 2019 年 1 月 1 日開始啟用。自建機器之支出及借款金額如下：

2018 年度建造機器支出：

1 月 1 日 $3,000,000

3 月 1 日 3,400,000

7 月 1 日 1,000,000

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9 月 1 日 600,000
11 月 1 日 1,500,000

2018 年度借款金額：

2018 年 1 月 1 日為建造該機器借入之專案借款：$4,000,000，年利率 5%，年底付息。

2018 年全年流通在外之一般借款：

$2,000,000，年利率 5%，年底付息。

$6,000,000，年利率 7%，年底付息。

試作：

1. 請計算忠孝公司建造該機器應予資本化之借款成本。(6 %)
2. 該機器估計耐用年限為 8 年，無殘值，採用直線法提列折舊，試作忠孝公司 2019 年底之折舊分錄。(6 %)
3. 承上，若 2019 年底，該機器有減損之跡象，估計其使用價值為$8,000,000，公允價值減出售成本為$7,800,000，試作忠孝公司認列減損損失之分錄。 (8 %)

六、(20%)仁愛公司民國 108 年相關資料如下：

本期損益 $600,000
支付員工薪資 180,000
支付供應商貨款 300,000
支付利息 120,000
支付所得稅 105,000
支付現金股利 165,000
折舊費用 210,000
應收帳款增加 240,000
期初現金餘額 300,000
存貨減少 270,000
應付所得稅減少 135,000
出售設備所得現金（含處分利益$150,000） 420,000
發行公司債所得現金 870,000
購買土地（半數付現，半數欠，開立長期票據） $1,200,000

假設該公司以間接法編製民國 108 年現金流量表，請回答下列問題：

1. 營業活動是產生淨現金流入，還是流出，其金額為若干？ (7 %)
2. 投資活動是產生淨現金流入，還是流出，其金額為若干？ (7 %)
3. 籌資活動是產生淨現金流入，還是流出，其金額為若干？ (6 %)

考試科目	會計學	系所別	財政學系	考試時間	2 月 18 日(一) 第 3 節

七、(20%)信義公司 2017 年 5 月份至 8 月份有關現金相關紀錄如下：

(1) 5 月 31 日的銀行調節表中有$9,500 的在途存款，6 月份帳列現金收入共計$157,500，但銀行對帳單顯示 5 月份之存款僅$156,000。

(2) 5 月 31 日的銀行調節表中有$9,200 的未兌現支票，公司 6 月份共開出$172,000 的支票，但銀行對帳單顯示 6 月份兌現支票僅$164,000。

(3) 8 月份銀行對帳單上的存款計$540,000，公司帳列的現金收入共計$520,000，而 8 月 31 日的在途存款計$50,000。

(4) 公司 8 月份共開出$480,000 的支票，銀行已兌現支票計$500,000，而 8 月 31 日有$44,000 的未兌現支票。

除上列情形外，銀行及公司的紀錄無錯誤發生。

試作：假設上列交易為獨立事項，請計算下列各項金額：

1. 2017 年 6 月 30 日，信義公司的在途存款金額及未兌現支票金額？(10%)
2. 2017 年 7 月 31 日，信義公司的在途存款金額及未兌現支票金額？(10%)

備註	一、作答於試題上者，不予計分。 二、試題請隨卷繳交。

考試科目	統計學	系所別	財政學系	考試時間	2 月 18 日(一) 第三節

請詳細回答以下全部問題

Question 1（10 分）

If the joint probability density of x_1 and x_2 is given by

$$f(x_1, x_2) = \begin{cases} e^{-(x_1+x_2)}, & \text{for } x_1 > 0,\ x_2 > 0 \\ 0, & \text{others} \end{cases}$$

Find the probability density of $Y = \frac{x_1}{x_1+x_2}$。

Question 2（10 分，4/3/3）

投擲兩個公正的骰子，假設：

A 定義為兩個骰子出現之點數和為 6 的事件

B 定義為兩個骰子出現之點數和為 7 的事件

C 定義為第一個骰子出現之點數為 4 的事件

D 定義為第二個骰子出現之點數為 3 的事件

請證明下列各事件之間是否為獨立事件：

(1) A 與 C　(2) B 與 C　(3) B 與 D

Question 3（10 分，4/6）

The editor of a textbook publishing company is trying to decide whether to publish a proposed business statistics textbook. Information on previous textbooks published indicates that 10% are huge successes, 20% are modest successes, 40% break even, and 30% are losers. However, before a publishing decision is made, the book will be reviewed. In the past, 99% of the huge successes received favorable reviews, 70% of the moderate successes received favorable reviews, 40% of the break-even books received favorable reviews, and 20% of the losers received favorable reviews.

(1) What proportion of textbooks receives favorable reviews?

(2) If the proposed textbook receives a favorable review, how should the editor revise the probabilities of the various outcomes to take this information into account?

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Question 4（15 分）

某一客運公司之業務主管想要了解該公司的網路預訂系統之成效，於是隨機抽取了 100 天之訂位記錄，以估計每天由 A 地至 B 地的客運中平均有多少人預先訂位後，但最後卻又未付款搭乘。由記錄得知資料如下：

預先訂位卻未付款搭乘人數	0	1	2	3	4	5	6
天數	20	37	23	15	4	0	1

請根據上表以$\alpha = 0.05$檢定是否該公司網路訂位後但最後卻未付款搭乘的人數呈現卜松分配（Poisson Distribution）？

Question 5（15 分，7/8）

某一食品公司想要比較其生產的飲料產品三種包裝是否會影響銷售量。他們記錄了四家分店在過去一週的銷售量如下表所示：

	A 分店	B 分店	C 分店	D 分店
塑膠包裝	180	260	400	360
罐頭包裝	300	400	180	240
玻璃包裝	420	460	380	500

(1) 請以 α =0.05 檢定不同包裝對銷售量的影響是否具有顯著差異。

(2) 請以 α =0.05 檢定不同分店的銷售量的影響是否具有顯著差異。

Question 6（10 分，4/6）

在某一大學隨機抽取 200 位同學為樣本，其中有 60 位同學是使用 A 品牌的手機。(1)請以 α =0.025 檢定是否可說明此一大學有 1/4 以上的同學是使用 A 品牌的手機？(2)若當真正使用 A 品牌手機的母體比例為 0.35 時，上述檢定過程中型 II 錯誤的機率為何？

Question 7（10 分，3/3/4）

從母體$N(\mu, \sigma^2)$中，隨機抽出兩組獨立的樣本$\{x_1, x_2, \cdots\cdots, x_n\}$與$\{y_1, y_2 \cdots\cdots, y_m\}$，如果我們用以下兩種不同的估計式來估計$\mu$：

$$\hat{\mu}_1 = \frac{\bar{x}_n + \bar{y}_m}{2} \quad , \quad \hat{\mu}_2 = \frac{n\bar{x}_n + m\bar{y}_m}{n+m}$$

請討論此兩者估計式的 (1)不偏性 (2)一致性 (3)並比較兩者的有效性。

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Question 8（20 分，4/4/6/6）

已知樣本資料如下：

X	72	93	93	88	96	80
Y	11	14	18	13	16	12

試根據以上資料回答以下問題：

(1) 請利用上述資料，以普通最小平方法求出迴歸估計方程式。

(2) 請問上述的迴歸估計方程式對總差異平方和解釋了多少的百分比？

(3) 請計算條件變異數$\sigma^2(Y|X)$的點估計及 95%的信賴區間。

(4) 請計算迴歸係數β_1之 95%的信賴區間。

Table of Poisson Probabilities

For a given value of λ, entry indicates the probability of a specified value of X

	λ									
X	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
0	0.9048	0.8187	0.7408	0.6703	0.6065	0.5488	0.4966	0.4493	0.4066	0.3679
1	0.0905	0.1637	0.2222	0.2681	0.3033	0.3293	0.3476	0.3595	0.3659	0.3679
2	0.0045	0.0164	0.0333	0.0536	0.0758	0.0988	0.1217	0.1438	0.1647	0.1839
3	0.0002	0.0011	0.0033	0.0072	0.0126	0.0198	0.0284	0.0383	0.0494	0.0613
4	0.0000	0.0001	0.0003	0.0007	0.0016	0.0030	0.0050	0.0077	0.0111	0.0153
5	0.0000	0.0000	0.0000	0.0001	0.0002	0.0004	0.0007	0.0012	0.0020	0.0031
6	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0002	0.0003	0.0005
7	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001

	λ									
X	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
0	0.3329	0.3012	0.2725	0.2466	0.2231	0.2019	0.1827	0.1653	0.1496	0.1353
1	0.3662	0.3614	0.3543	0.3452	0.3347	0.3230	0.3106	0.2975	0.2842	0.2707
2	0.2014	0.2169	0.2303	0.2417	0.2510	0.2584	0.2640	0.2678	0.2700	0.2707
3	0.0738	0.0867	0.0998	0.1128	0.1255	0.1378	0.1496	0.1607	0.1710	0.1804
4	0.0203	0.0260	0.0324	0.0395	0.0471	0.0551	0.0636	0.0723	0.0812	0.0902
5	0.0045	0.0062	0.0084	0.0111	0.0141	0.0176	0.0216	0.0260	0.0309	0.0361
6	0.0008	0.0012	0.0018	0.0026	0.0035	0.0047	0.0061	0.0078	0.0098	0.0120
7	0.0001	0.0002	0.0003	0.0005	0.0008	0.0011	0.0015	0.0020	0.0027	0.0034
8	0.0000	0.0000	0.0001	0.0001	0.0001	0.0002	0.0003	0.0005	0.0006	0.0009
9	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0001	0.0001	0.0002

備註	一、作答於試題上者，不予計分。 二、試題請隨卷繳交。

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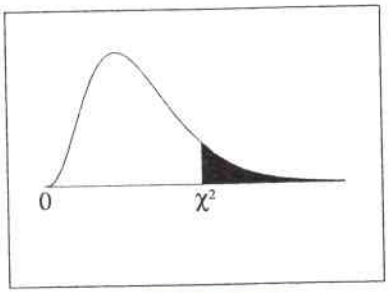
Chi-Square Distribution Table



The shaded area is equal to α for $\chi^2 = \chi^2_\alpha$.

df	$\chi^2_{.995}$	$\chi^2_{.990}$	$\chi^2_{.975}$	$\chi^2_{.950}$	$\chi^2_{.900}$	$\chi^2_{.100}$	$\chi^2_{.050}$	$\chi^2_{.025}$	$\chi^2_{.010}$	$\chi^2_{.005}$
1	0.000	0.000	0.001	0.004	0.016	2.706	3.841	5.024	6.635	7.879
2	0.010	0.020	0.051	0.103	0.211	4.605	5.991	7.378	9.210	10.597
3	0.072	0.115	0.216	0.352	0.584	6.251	7.815	9.348	11.345	12.838
4	0.207	0.297	0.484	0.711	1.064	7.779	9.488	11.143	13.277	14.860
5	0.412	0.554	0.831	1.145	1.610	9.236	11.070	12.833	15.086	16.750
6	0.676	0.872	1.237	1.635	2.204	10.645	12.592	14.449	16.812	18.548
7	0.989	1.239	1.690	2.167	2.833	12.017	14.067	16.013	18.475	20.278
8	1.344	1.646	2.180	2.733	3.490	13.362	15.507	17.535	20.090	21.955
9	1.735	2.088	2.700	3.325	4.168	14.684	16.919	19.023	21.666	23.589
10	2.156	2.558	3.247	3.940	4.865	15.987	18.307	20.483	23.209	25.188
11	2.603	3.053	3.816	4.575	5.578	17.275	19.675	21.920	24.725	26.757
12	3.074	3.571	4.404	5.226	6.304	18.549	21.026	23.337	26.217	28.300
13	3.565	4.107	5.009	5.892	7.042	19.812	22.362	24.736	27.688	29.819
14	4.075	4.660	5.629	6.571	7.790	21.064	23.685	26.119	29.141	31.319
15	4.601	5.229	6.262	7.261	8.547	22.307	24.996	27.488	30.578	32.801
16	5.142	5.812	6.908	7.962	9.312	23.542	26.296	28.845	32.000	34.267
17	5.697	6.408	7.564	8.672	10.085	24.769	27.587	30.191	33.409	35.718
18	6.265	7.015	8.231	9.390	10.865	25.989	28.869	31.526	34.805	37.156
19	6.844	7.633	8.907	10.117	11.651	27.204	30.144	32.852	36.191	38.582
20	7.434	8.260	9.591	10.851	12.443	28.412	31.410	34.170	37.566	39.997
21	8.034	8.897	10.283	11.591	13.240	29.615	32.671	35.479	38.932	41.401
22	8.643	9.542	10.982	12.338	14.041	30.813	33.924	36.781	40.289	42.796
23	9.260	10.196	11.689	13.091	14.848	32.007	35.172	38.076	41.638	44.181
24	9.886	10.856	12.401	13.848	15.659	33.196	36.415	39.364	42.980	45.559
25	10.520	11.524	13.120	14.611	16.473	34.382	37.652	40.646	44.314	46.928
26	11.160	12.198	13.844	15.379	17.292	35.563	38.885	41.923	45.642	48.290
27	11.808	12.879	14.573	16.151	18.114	36.741	40.113	43.195	46.963	49.645
28	12.461	13.565	15.308	16.928	18.939	37.916	41.337	44.461	48.278	50.993
29	13.121	14.256	16.047	17.708	19.768	39.087	42.557	45.722	49.588	52.336
30	13.787	14.953	16.791	18.493	20.599	40.256	43.773	46.979	50.892	53.672
40	20.707	22.164	24.433	26.509	29.051	51.805	55.758	59.342	63.691	66.766
50	27.991	29.707	32.357	34.764	37.689	63.167	67.505	71.420	76.154	79.490
60	35.534	37.485	40.482	43.188	46.459	74.397	79.082	83.298	88.379	91.952
70	43.275	45.442	48.758	51.739	55.329	85.527	90.531	95.023	100.425	104.215
80	51.172	53.540	57.153	60.391	64.278	96.578	101.879	106.629	112.329	116.321
90	59.196	61.754	65.647	69.126	73.291	107.565	113.145	118.136	124.116	128.299
100	67.328	70.065	74.222	77.929	82.358	118.498	124.342	129.561	135.807	140.169

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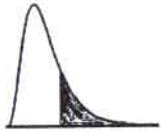


F-Table Upper Tail Area of .05

Denominato df	Numerator df 1	2	3	4	5	6	7	8	9	10	11	12	15	20	24	30	60	120	∞
1	161.4	199.5	215.7	224.6	230.2	234.0	236.8	238.9	240.5	241.9	243.0	243.9	245.9	248.0	249.1	250.1	252.2	253.3	254.3
2	18.5	19.0	19.2	19.2	19.3	19.3	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.4	19.5	19.5	19.5	19.5	19.5
3	10.1	9.6	9.3	9.1	9.0	8.9	8.9	8.8	8.8	8.8	8.8	8.7	8.7	8.7	8.6	8.6	8.6	8.5	8.5
4	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00	5.96	5.94	5.91	5.86	5.80	5.77	5.75	5.69	5.66	5.63
5	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77	4.74	4.70	4.68	4.62	4.56	4.53	4.50	4.43	4.40	4.37
6	5.99	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10	4.06	4.03	4.00	3.94	3.87	3.84	3.81	3.74	3.70	3.67
7	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68	3.64	3.60	3.57	3.51	3.44	3.41	3.38	3.30	3.27	3.23
8	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39	3.35	3.31	3.28	3.22	3.15	3.12	3.08	3.01	2.97	2.93
9	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18	3.14	3.10	3.07	3.01	2.94	2.90	2.86	2.79	2.75	2.71
10	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02	2.98	2.94	2.91	2.85	2.77	2.74	2.70	2.62	2.58	2.54
11	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90	2.85	2.82	2.79	2.72	2.65	2.61	2.57	2.49	2.45	2.40
12	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80	2.75	2.72	2.69	2.62	2.54	2.51	2.47	2.38	2.34	2.30
13	4.67	3.81	3.41	3.18	3.03	2.92	2.83	2.77	2.71	2.67	2.63	2.60	2.53	2.46	2.42	2.38	2.30	2.25	2.21
14	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65	2.60	2.57	2.53	2.46	2.39	2.35	2.31	2.22	2.18	2.13
15	4.54	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59	2.54	2.51	2.48	2.40	2.33	2.29	2.25	2.16	2.11	2.07
16	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54	2.49	2.46	2.42	2.35	2.28	2.24	2.19	2.11	2.06	2.01
17	4.45	3.59	3.20	2.96	2.81	2.70	2.61	2.55	2.49	2.45	2.41	2.38	2.31	2.23	2.19	2.15	2.06	2.01	1.96
18	4.41	3.55	3.16	2.93	2.77	2.66	2.58	2.51	2.46	2.41	2.37	2.34	2.27	2.19	2.15	2.11	2.02	1.97	1.92
19	4.38	3.52	3.13	2.90	2.74	2.63	2.54	2.48	2.42	2.38	2.34	2.31	2.23	2.16	2.11	2.07	1.98	1.93	1.88
20	4.35	3.49	3.10	2.87	2.71	2.60	2.51	2.45	2.39	2.35	2.31	2.28	2.20	2.12	2.08	2.04	1.95	1.90	1.84
21	4.32	3.47	3.07	2.84	2.68	2.57	2.49	2.42	2.37	2.32	2.28	2.25	2.18	2.10	2.05	2.01	1.92	1.87	1.81
22	4.30	3.44	3.05	2.82	2.66	2.55	2.46	2.40	2.34	2.30	2.26	2.23	2.15	2.07	2.03	1.98	1.89	1.84	1.78
23	4.28	3.42	3.03	2.80	2.64	2.53	2.44	2.37	2.32	2.27	2.24	2.20	2.13	2.05	2.01	1.96	1.86	1.81	1.76
24	4.26	3.40	3.01	2.78	2.62	2.51	2.42	2.36	2.30	2.25	2.22	2.18	2.11	2.03	1.98	1.94	1.84	1.79	1.73
25	4.24	3.39	2.99	2.76	2.60	2.49	2.40	2.34	2.28	2.24	2.20	2.16	2.09	2.01	1.96	1.92	1.82	1.77	1.71
26	4.23	3.37	2.98	2.74	2.59	2.47	2.39	2.32	2.27	2.22	2.18	2.15	2.07	1.99	1.95	1.90	1.80	1.75	1.69
30	4.17	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21	2.16	2.13	2.09	2.01	1.93	1.89	1.84	1.74	1.68	1.62
40	4.08	3.23	2.84	2.61	2.45	2.34	2.25	2.18	2.12	2.08	2.04	2.00	1.92	1.84	1.79	1.74	1.64	1.58	1.51
60	4.00	3.15	2.76	2.53	2.37	2.25	2.17	2.10	2.04	1.99	1.95	1.92	1.84	1.75	1.70	1.65	1.53	1.47	1.39
120	3.92	3.07	2.68	2.45	2.29	2.18	2.09	2.02	1.96	1.91	1.87	1.83	1.75	1.66	1.61	1.55	1.43	1.35	1.25
∞	3.84	3.00	2.60	2.37	2.21	2.10	2.01	1.94	1.88	1.83	1.79	1.75	1.67	1.57	1.52	1.46	1.32	1.22	1.00

國立政治大學 108 學年度 碩士暨碩士在職專班 招生考試試題

第 6 頁，共 8 頁

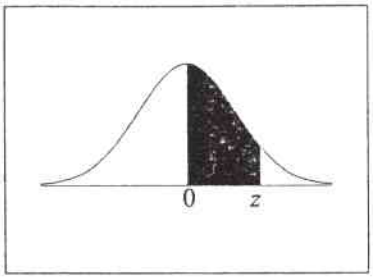
考試科目	統計學	系所別	財政學系	考試時間	2 月 18 日（一）第三節

F-Table Upper Tail Area of .025

Denominator df \ Numerator df	1	2	3	4	5	6	7	8	9	10	11	12	15	20	24	30	60	120	∞
1	648	799	864	899	921	937	948	956	963	968	973	976	984	993	997	1001	1009	1014	1018
2	38.5	39.0	39.1	39.2	39.3	39.3	39.3	39.3	39.3	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.4	39.5
3	17.4	16.0	15.4	15.1	14.8	14.7	14.6	14.5	14.4	14.4	14.3	14.3	14.2	14.1	14.1	14.0	13.9	13.9	13.9
4	12.2	10.6	9.9	9.6	9.3	9.2	9.0	8.9	8.9	8.8	8.7	8.7	8.6	8.5	8.5	8.4	8.3	8.3	8.2
5	10.0	8.43	7.76	7.39	7.15	6.98	6.85	6.76	6.68	6.62	6.57	6.52	6.43	6.33	6.28	6.23	6.12	6.07	6.02
6	8.81	7.26	6.60	6.23	5.99	5.82	5.70	5.60	5.52	5.46	5.41	5.37	5.27	5.17	5.12	5.07	4.96	4.90	4.85
7	8.07	6.54	5.89	5.52	5.29	5.12	4.99	4.90	4.82	4.76	4.71	4.67	4.57	4.47	4.41	4.36	4.25	4.20	4.14
8	7.57	6.06	5.42	5.05	4.82	4.65	4.53	4.43	4.36	4.30	4.24	4.20	4.10	4.00	3.95	3.89	3.78	3.73	3.67
9	7.21	5.71	5.08	4.72	4.48	4.32	4.20	4.10	4.03	3.96	3.91	3.87	3.77	3.67	3.61	3.56	3.45	3.39	3.33
10	6.94	5.46	4.83	4.47	4.24	4.07	3.95	3.85	3.78	3.72	3.66	3.62	3.52	3.42	3.37	3.31	3.20	3.14	3.08
11	6.72	5.26	4.63	4.28	4.04	3.88	3.76	3.66	3.59	3.53	3.47	3.43	3.33	3.23	3.17	3.12	3.00	2.94	2.88
12	6.55	5.10	4.47	4.12	3.89	3.73	3.61	3.51	3.44	3.37	3.32	3.28	3.18	3.07	3.02	2.96	2.85	2.79	2.72
13	6.41	4.97	4.35	4.00	3.77	3.60	3.48	3.39	3.31	3.25	3.20	3.15	3.05	2.95	2.89	2.84	2.72	2.66	2.60
14	6.30	4.86	4.24	3.89	3.66	3.50	3.38	3.29	3.21	3.15	3.09	3.05	2.95	2.84	2.79	2.73	2.61	2.55	2.49
15	6.20	4.77	4.15	3.80	3.58	3.41	3.29	3.20	3.12	3.06	3.01	2.96	2.86	2.76	2.70	2.64	2.52	2.46	2.40
16	6.12	4.69	4.08	3.73	3.50	3.34	3.22	3.12	3.05	2.99	2.93	2.89	2.79	2.68	2.63	2.57	2.45	2.38	2.32
17	6.04	4.62	4.01	3.66	3.44	3.28	3.16	3.06	2.98	2.92	2.87	2.82	2.72	2.62	2.56	2.50	2.38	2.32	2.25
18	5.98	4.56	3.95	3.61	3.38	3.22	3.10	3.01	2.93	2.87	2.81	2.77	2.67	2.56	2.50	2.44	2.32	2.26	2.19
19	5.92	4.51	3.90	3.56	3.33	3.17	3.05	2.96	2.88	2.82	2.76	2.72	2.62	2.51	2.45	2.39	2.27	2.20	2.13
20	5.87	4.46	3.86	3.51	3.29	3.13	3.01	2.91	2.84	2.77	2.72	2.68	2.57	2.46	2.41	2.35	2.22	2.16	2.09
21	5.83	4.42	3.82	3.48	3.25	3.09	2.97	2.87	2.80	2.73	2.68	2.64	2.53	2.42	2.37	2.31	2.18	2.11	2.04
22	5.79	4.38	3.78	3.44	3.22	3.05	2.93	2.84	2.76	2.70	2.65	2.60	2.50	2.39	2.33	2.27	2.14	2.08	2.00
23	5.75	4.35	3.75	3.41	3.18	3.02	2.90	2.81	2.73	2.67	2.62	2.57	2.47	2.36	2.30	2.24	2.11	2.04	1.97
24	5.72	4.32	3.72	3.38	3.15	2.99	2.87	2.78	2.70	2.64	2.59	2.54	2.44	2.33	2.27	2.21	2.08	2.01	1.94
25	5.69	4.29	3.69	3.35	3.13	2.97	2.85	2.75	2.68	2.61	2.56	2.51	2.41	2.30	2.24	2.18	2.05	1.98	1.91
26	5.66	4.27	3.67	3.33	3.10	2.94	2.82	2.73	2.65	2.59	2.54	2.49	2.39	2.28	2.22	2.16	2.03	1.95	1.88
30	5.57	4.18	3.59	3.25	3.03	2.87	2.75	2.65	2.57	2.51	2.46	2.41	2.31	2.20	2.14	2.07	1.94	1.87	1.79
40	5.42	4.05	3.46	3.13	2.90	2.74	2.62	2.53	2.45	2.39	2.33	2.29	2.18	2.07	2.01	1.94	1.80	1.72	1.64
60	5.29	3.93	3.34	3.01	2.79	2.63	2.51	2.41	2.33	2.27	2.22	2.17	2.06	1.94	1.88	1.82	1.67	1.58	1.48
120	5.15	3.80	3.23	2.89	2.67	2.52	2.39	2.30	2.22	2.16	2.10	2.05	1.94	1.82	1.76	1.69	1.53	1.43	1.31
∞	5.02	3.69	3.12	2.79	2.57	2.41	2.29	2.19	2.11	2.05	1.99	1.94	1.83	1.71	1.64	1.57	1.39	1.27	1.00

考試科目	統計學	系所別	財政學系	考試時間	2 月 18 日(一) 第三節

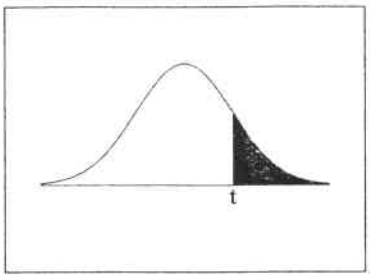
Standard Normal Distribution Table



z	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
0.0	.0000	.0040	.0080	.0120	.0160	.0199	.0239	.0279	.0319	.0359
0.1	.0398	.0438	.0478	.0517	.0557	.0596	.0636	.0675	.0714	.0753
0.2	.0793	.0832	.0871	.0910	.0948	.0987	.1026	.1064	.1103	.1141
0.3	.1179	.1217	.1255	.1293	.1331	.1368	.1406	.1443	.1480	.1517
0.4	.1554	.1591	.1628	.1664	.1700	.1736	.1772	.1808	.1844	.1879
0.5	.1915	.1950	.1985	.2019	.2054	.2088	.2123	.2157	.2190	.2224
0.6	.2257	.2291	.2324	.2357	.2389	.2422	.2454	.2486	.2517	.2549
0.7	.2580	.2611	.2642	.2673	.2704	.2734	.2764	.2794	.2823	.2852
0.8	.2881	.2910	.2939	.2967	.2995	.3023	.3051	.3078	.3106	.3133
0.9	.3159	.3186	.3212	.3238	.3264	.3289	.3315	.3340	.3365	.3389
1.0	.3413	.3438	.3461	.3485	.3508	.3531	.3554	.3577	.3599	.3621
1.1	.3643	.3665	.3686	.3708	.3729	.3749	.3770	.3790	.3810	.3830
1.2	.3849	.3869	.3888	.3907	.3925	.3944	.3962	.3980	.3997	.4015
1.3	.4032	.4049	.4066	.4082	.4099	.4115	.4131	.4147	.4162	.4177
1.4	.4192	.4207	.4222	.4236	.4251	.4265	.4279	.4292	.4306	.4319
1.5	.4332	.4345	.4357	.4370	.4382	.4394	.4406	.4418	.4429	.4441
1.6	.4452	.4463	.4474	.4484	.4495	.4505	.4515	.4525	.4535	.4545
1.7	.4554	.4564	.4573	.4582	.4591	.4599	.4608	.4616	.4625	.4633
1.8	.4641	.4649	.4656	.4664	.4671	.4678	.4686	.4693	.4699	.4706
1.9	.4713	.4719	.4726	.4732	.4738	.4744	.4750	.4756	.4761	.4767
2.0	.4772	.4778	.4783	.4788	.4793	.4798	.4803	.4808	.4812	.4817
2.1	.4821	.4826	.4830	.4834	.4838	.4842	.4846	.4850	.4854	.4857
2.2	.4861	.4864	.4868	.4871	.4875	.4878	.4881	.4884	.4887	.4890
2.3	.4893	.4896	.4898	.4901	.4904	.4906	.4909	.4911	.4913	.4916
2.4	.4918	.4920	.4922	.4925	.4927	.4929	.4931	.4932	.4934	.4936
2.5	.4938	.4940	.4941	.4943	.4945	.4946	.4948	.4949	.4951	.4952
2.6	.4953	.4955	.4956	.4957	.4959	.4960	.4961	.4962	.4963	.4964
2.7	.4965	.4966	.4967	.4968	.4969	.4970	.4971	.4972	.4973	.4974
2.8	.4974	.4975	.4976	.4977	.4977	.4978	.4979	.4979	.4980	.4981
2.9	.4981	.4982	.4982	.4983	.4984	.4984	.4985	.4985	.4986	.4986
3.0	.4987	.4987	.4987	.4988	.4988	.4989	.4989	.4989	.4990	.4990
3.1	.4990	.4991	.4991	.4991	.4992	.4992	.4992	.4992	.4993	.4993
3.2	.4993	.4993	.4994	.4994	.4994	.4994	.4994	.4995	.4995	.4995
3.3	.4995	.4995	.4995	.4996	.4996	.4996	.4996	.4996	.4996	.4997
3.4	.4997	.4997	.4997	.4997	.4997	.4997	.4997	.4997	.4997	.4998
3.5	.4998	.4998	.4998	.4998	.4998	.4998	.4998	.4998	.4998	.4998

考試科目	統計學	系所別	財政學系	考試時間	2 月 18 日(一) 第三節

t-Distribution Table



The shaded area is equal to α for $t = t_\alpha$.

df	$t_{.100}$	$t_{.050}$	$t_{.025}$	$t_{.010}$	$t_{.005}$
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
32	1.309	1.694	2.037	2.449	2.738
34	1.307	1.691	2.032	2.441	2.728
36	1.306	1.688	2.028	2.434	2.719
38	1.304	1.686	2.024	2.429	2.712
∞	1.282	1.645	1.960	2.326	2.576

考試科目	經濟學	系所別	財政學系	考試時間	2月18日(一)第一節

一、**Multiple Choice Questions (40%)**

1.

Charlie's Chimps is a perfectly competitive firm that produces cuddly chimps for children. The market price of a chimp is $10, and Charlie's produces 100 chimps. The marginal cost of the 100th chimp is $9. Charlie's _____.

A) is maximizing its profit

B) will maximize its profit if it produces more than 100 chimps

C) will maximize its profit if it lowers the price to $9 a chimp

D) will maximize its profit if it produces fewer than 100 chimps

2.

Suppose two neighbors share a park. One neighbor, Al, leaves trash in the park. This bothers the other neighbor, Bert. According to Coase's Theorem, the optimal level of trash in the park can be achieved if

A) Al is fined by the government.

B) Al has the right to leave trash and Bert cannot do anything about it.

C) Al has the right to leave trash and Bert can pay him to limit his dumping.

D) Bert moves.

3.

If an individual makes her investment decisions based solely on the Net Present Value criterion, one can conclude that she is

A) risk averse.

B) risk neutral.

C) risk loving.

D) extremely wealthy.

4.

A firm uses an efficiency wage scheme to deter workers from shirking. A risk-neutral worker will not shirk if

A) the expected loss from being fired is larger than or equal to the gain from shirking.

B) the expected loss from being fired is smaller than the gain from shirking.

C) the gain from shirking is positive.

D) the expected loss from being fired is zero.

5.

With respect to consuming food and shelter, two consumers face the same prices and both claim to be in equilibrium. We therefore know that

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A) they both have the same marginal utility for food.
B) they both have the same marginal utility for shelter.
C) they both have the same MRS of food for shelter.
D) All of the above.

6.
If you sell your DVD player on eBay, you will be better informed about the quality of the product than any potential buyer. This is called
A) adverse selection.
B) asymmetric information.
C) moral hazard.
D) opportunistic behavior.

7.
If the demand curve for a good is horizontal and the price is positive, then a leftward shift of the supply curve results in
A) a price of zero.
B) an increase in price.
C) a decrease in price.
D) no change in price.

8.
When neither player has a dominant strategy,
A) game theory will not provide information.
B) no Nash-Equilibrium exists.
C) at least one Nash-Equilibrium exists.
D) the game cannot be analyzed.

9.
The existence of a deadweight loss associated with a monopoly can be seen because
A) consumers are willing to pay more for the last unit of output than it costs to produce.
B) the cost of the last unit produced is more than consumers are willing to pay for it.
C) the producer surplus is larger than in a competitive market.
D) None of the above.

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10.
A general equilibrium analysis of a price change in the corn chip market would include an investigation of the impacts in
A) the television market.
B) the coffee market.
C) the salsa market.
D) All of the above.

11.
Which of the following would tend to make the multiplier smaller?
A) an increase in the marginal propensity to consume
B) an increase in the marginal propensity to save
C) a reduction in taxes
D) a reduction in government spending
E) none of the above

12.
Which of the following is not included as a component of the M1 definition of money?
A) bonds
B) checkable deposits
C) coins and bills held by the nonbank public
D) all of the above
E) none of the above

13.
For this question, assume that investment spending depends only on the interest rate and no longer depends on output. Given this information, a reduction in the money supply
A) will cause investment to decrease.
B) will cause investment to increase.
C) may cause investment to increase or to decrease.
D) will have no effect on output.
E) will cause a reduction in output and have no effect on the interest rate.

14.
The natural rate of unemployment is the rate of unemployment

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A) that occurs when the money market is in equilibrium.
B) that occurs when the markup of prices over costs is zero.
C) where the markup of prices over costs is equal to its historical value.
D) that occurs when both the goods and financial markets are in equilibrium.
E) none of the above

15.
In the Phillips curve equation, which of the following will cause an increase in the current inflation rate?
A) an increase in the expected inflation rate
B) a reduction in the unemployment rate
C) an increase in the markup, m
D) all of the above
E) none of the above

16.
Suppose there is a reduction in the saving rate. This decrease in the saving rate will cause a reduction in which of the following once the economy reaches its new steady state equilibrium?
A) growth rate of output
B) growth rate of capital
C) growth rate of capital per worker
D) all of the above
E) none of the above

17.
"Animal spirits" refers to
A) the stubborn refusal of many economic decision-makers to use rational expectations.
B) movements in investment that cannot be explained by changes in current variables.
C) the often-observed Fed refusal to cooperate with the government in setting its monetary policy.
D) the impact of tax-evasion on the budget deficit.
E) an exotic alcoholic drink favored by Wall Street traders.

18.
The existence of the J-curve suggests that a real depreciation will cause
A) an initial increase in net exports.
B) an initial increase in economic activity.

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C) a final reduction in net exports.
D) an initial reduction in the demand for domestic goods.

19.
When policy makers decide to devalue the currency, such an action generally represents
A) a decision to let the currency float.
B) an increase in the pegged value of the domestic currency.
C) a reduction in the foreign price level.
D) a reduction in the domestic price level.
E) none of the above

20.
To solve the "time inconsistency" problem in macro policy, a nation may well have to
A) restrict itself in the present from taking certain policy moves in the future.
B) lift all restrictions on future policy moves.
C) present policy moves to the public, for example, in a referendum.
D) use the courts to settle policy disputes.
E) make the central bank more responsive to the popular will.

二、
Essay Questions (60%)

1. General Equilibrium and Welfare (20%)

a) Explain why having different marginal rates of substitution is necessary for trade to occur. (7%)
b) Suppose the U.S. can produce 10 units of food and 5 units of clothing (or any linear combination) and Canada can produce 6 units of food and 3 units of clothing (or any linear combination). What type of trade will occur between these two countries? Explain. (7%)
c) Explain the logic behind the First Theorem of Welfare Economics. (6%)

2. Oligopoly (20%)

Nimbus, Inc., and Cleansweep, Inc., are the only producers of flying brooms. Each firm has two strategies: Spend 30,000 galleons a year on research and development (R&D) or spend nothing on R&D. If neither firm spends on R&D, Nimbus' economic profit is 80, 000 galleons and Cleansweep's economic profit is 40,000 galleons. If each firm conducts R&D, market shares are maintained, but each firm's profit is lower by the amount spent on R&D. If Nimbus conducts R&D and Cleansweep does not, Nimbus makes an economic profit of 120,000 galleons, while Cleansweep incurs an economic loss of 20,000 galleons. If Cleansweep conducts R&D and Nimbus does not, Cleansweep makes a profit of 60,000 galleons while Nimbus loses 10,000 galleons.

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a) Construct a payoff matrix for the game that Nimbus and Cleansweep must play. (7%)

b) Find the Nash equilibrium. In the Nash equilibrium, what is each firm's equilibrium profit? (7%)

c) What is the cooperative outcome? Would the firms make more economic profit if they collude to achieve the cooperative outcome? (6%)

3. AD-AS and IS-LM models (20%)

Based on your understanding of the aggregate supply and aggregate demand model and the IS-LM model, graphically illustrate and explain what effect a reduction in the price of oil will have on the economy. In your graphs, clearly illustrate the short-run and medium-run equilibria. Also include in your answer an explanation of the effects of this change in the price of oil on the labor market and the equilibrium real wage.

備註	一、作答於試題上者，不予計分。 二、試題請隨卷繳交。

國立政治大學 108 學年度 碩士暨碩士在職專班 招生考試試題

考試科目	財政學	系所別	財政學系	考試時間	2月18日(一) 第3節

1. Assume that Mars has the preferences p=10-2q for a public good and Mercury has the preference p=5-q. The marginal cost is equal to 3. How much should be produced in the society's optimum. How much should each individual pay if Lindahl pricing is used? Describe a potential problem if Lindahl pricing is used in practice. (15 points)
2. Sun and Moon are the only people who live near a public pond, which is frozen in the winter. Moon enjoys skating on the pond, while Sun wants to cut holes in it for ice fishing; he sells all the fish he catches. The first hole Sun cuts will produce the most fish, the second hole will produce fewer fish, and so on; once Sun has cut 100 holes, cutting any further holes will produce no more fish. Suppose that Moon's pleasure in skating is reduced by $\$X$ for every hole Sun cuts.
   (1) Draw a diagram that depicts this situation. Show the number of holes that Sun cuts if he and Moon cannot talk to each other or negotiate about what Sun does. (5 points)
   (2) On your diagram, show the Pigouvian tax that will induce Sun to cut the efficient number of holes, and show the amount of revenues collected by the tax. (5 points)
   (3) Explain what economic theory says would happen if Moon were given exclusive property rights to the pond, then discuss what would happen if Sun were given property rights. Be sure to discuss effects on Sun's and Moon's utility as well as on the number of holes. (Assume in both cases that Moon and Sun can now negotiate about the outcome, and can pay each other if such payments would permit a Pareto-improving bargain.) (10 points)
3. What effect does Social Security have on savings? (10 points)
4. Assume that the government decides to impose a unit tax on the producers of the medicine insulin (胰島素)which individuals with diabetes (糖尿病) take. Which are the plausible effects on the tax incidences on producers relative to consumers, i.e., the consumer and producer burden? Show in a figure and explain. (15 points)
5. Assume an income tax was doubled. Describe what would happen to labor supply and leisure. (10 points)
6. Explain the difference between general grants and categorical grants. Under what circumstance will they have the same impact? In that case, will one have an advantage over the other? (15 points)
7. Provide a utilitarian justification for using the tax system to provide a more equal distribution of income as well as two possible counterarguments to this viewpoint. (15 points)

備註	一、作答於試題上者，不予計分。 二、試題請隨卷繳交。