

考試科目	經濟學	系所別	商學院共同科	考試時間	2 月 18 日 (一) 第一節
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一、Multiple Choice (1 point each)

Identify the letter of the choice that best completes the statement or answers the question.

1. One would expect to observe diminishing marginal product of labor when
 - A. workers are discouraged about the lack of help from other workers.
 - B. crowded office space reduces the productivity of new workers.
 - C. union workers are told to reduce their work effort in preparation for a new round of collective bargaining talks.
 - D. only new workers are trained in using the most productive capital.

2. Comparing marginal revenue to marginal cost
 - (i) reveals the contribution of the last unit of production to total profit.
 - (ii) is helpful in making profit maximization production decisions.
 - (iii) always reveals whether a firm is making an economic profit.
 - (iv) tells a firm whether its fixed costs are too high.
 - A. (i) and (ii) only
 - B. (iii) only
 - C. (ii) and (iii) only
 - D. All of the above are correct.

3. The monopolist's profit-maximizing quantity of output is determined by the intersection of which of the following two curves?
 - A. marginal cost and demand
 - B. average cost and demand
 - C. marginal cost and marginal revenue
 - D. average cost and marginal revenue

4. One key difference between an oligopoly market and a competitive market is that
 - A. oligopolistic firms are interdependent while competitive firms are not.
 - B. oligopolistic firms sell completely unrelated products while competitive firms do not.
 - C. oligopolistic firms sell their product at a price equal to marginal cost while competitive firms do not.
 - D. oligopolistic firms are price takers while competitive firms are not.

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- 一、作答於試題上者，不予計分。
- 二、試題請隨卷繳交。

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5. When advertising encourages customers to become more informed about all firms in the market,
- demand curves for specific brands in the market are likely to become less elastic.
 - each firm is likely to have less market power.
 - firms are able to foster stronger brand loyalty.
 - the market power of individual firms is strengthened.
6. David faces choices between Apple and Banana. He feels that having five apples and three bananas (5,3) is not different from having four apples and six bananas (4,6). Which following statement(s) is (are) possibly correct if Ethan's indifferent curves are downward-sloping?
- Ethan feels (4, 4.8) is as good as (5, 3).
 - Ethan feels (6, 2) is as good as (4, 6).
- (i)
 - (ii)
 - (i) and (ii)
 - None of the above is correct.
7. John and Ethan both work eight hours a day. In one day, John can make 4 cakes or 8 ice cream, whereas Ethan can make 2 cakes or 5 ice cream. Given this, which statement(s) is (are) correct?
- Ethan has a lower opportunity cost in producing ice cream than John.
 - John has an absolute advantage in producing both goods.
 - It is not beneficial for John to trade with Ethan.
- (i) and (ii)
 - (i) and (iii)
 - (ii) and (iii)
 - (i), (ii), and (iii)
8. Which following statement(s) is (are) correct?
- A Giffen good is always an inferior good.
 - A Giffen good is a good that its income effect is larger than its substitution effect.
- (i)
 - (ii)
 - (i) and (ii)
 - None of the above is correct.

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9. John, Ethan, and Mary decide to buy a bike together and share the ownership. Their willingness to pay for each choice is in the following table

	John	Ethan	Mary
Bike A	\$800	\$300	\$500
Bike B	\$700	\$450	\$500
Bike C	\$600	\$500	\$500
Bike D	\$500	\$550	\$500
Bike E	\$400	\$650	\$500

They will choose the bike that all three agree to buy. Which following statement(s) is(are) correct?

- (i) The bike will be a public good among them.
(ii) If three people share the cost and all bikes have the same price, \$1500, the choice that maximizes aggregate surplus will be chosen.

- A. (i)
B. (ii)
C. (i) and (ii)
D. None of the above is correct.

10. Suppose Country A proposes to impose a tax on a good. One report from an economist argues that this tax will increase producers' before-tax total revenue and make the producers bear relatively more tax burden than consumers. Which following statement is correct for the good?

- A. The price elasticity of demand is 1.8; the price elasticity of supply is 0.8.
B. The price elasticity of demand is 0.9; the price elasticity of supply is 0.3.
C. The price elasticity of demand is 0.6; the price elasticity of supply is 1.4.
D. There is not enough information to answer the question.

11. In a certain economy, when income is \$1000, consumer spending is \$800. The value of the multiplier for this economy is 2.5. It follows that, when income is \$1060, consumer spending is

- A. \$815.
B. \$836.
C. \$900.
D. \$950.

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12. Which of the following is not a reason that paying efficiency wages may increase a firm's profit?
- Efficiency wages increase worker health and therefore increase worker productivity.
 - Efficiency wages decrease worker turnover and therefore decrease hiring and training costs.
 - Efficiency wages decrease worker shirking and therefore increase worker productivity.
 - Efficiency wages are below the equilibrium wage rate but still attract high quality workers.
13. If the Federal Reserve accommodates an adverse supply shock,
- inflation expectations may rise which shifts the short-run Phillips curve shifts right.
 - inflation expectations may rise which shifts the short-run Phillips curve shifts left.
 - inflation expectations may fall which shifts the short-run Phillips curve shifts right.
 - inflation expectations may fall which shifts the short-run Phillips curve shifts left.
14. If a local bank decides to convert some of its U.S. Treasury securities into cash, which it will hold in its vault, what impact will this have on the bank's balance sheet?
- Reserves would increase, liabilities would stay the same, and owner's equity would decrease.
 - Reserves would increase, liabilities would stay the same, and owner's equity would increase.
 - Reserves would decrease, liabilities would decrease, and owner's equity would decrease.
 - Reserves would decrease, liabilities would stay the same, and owner's equity would decrease.
15. Matilda just graduated from college. In order to devote all her efforts to college, she didn't hold a job. She is going to tour around the country on her motorcycle for a month before she starts looking for work. Other things the same, the unemployment rate
- increases, and the labor-force participation rate decreases.
 - and the labor-force participation rate both increase.
 - increases, and the labor-force participation rate is unaffected.
 - and the labor-force participation rate are both unaffected.
16. In an IS-LM model, if the government adopts a loose monetary policy and a tight fiscal policy simultaneously,
- interest rate increases, while output stays the same.
 - interest rate stays the same, while output decreases.
 - interest rate change is uncertain, while output increases.
 - interest rate decreases, while output changes is uncertain.

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17. In a small open economy, a loose fiscal policy coupled with an increase in import tariff will cause domestic currency to

- A. increase.
- B. decrease.
- C. remain the same.
- D. change in an uncertain direction.

18. Assuming, in a two-period model, that the nominal wage rate increases from \$10/hour to \$15/hour; the expected price level increases from 1 to 3; and the actual price level increases from 4 to 5, we can deduce that

- A. nominal wage rate decreases.
- B. expected real wage rate increases.
- C. actual real wage rate increases.
- D. All of the above are correct.

19. Suppose the objective function of a government is described by $W(u, \pi) = (u + 5\pi^2)$ where u is the unemployment rate, and π is the inflation rate, while the Phillips curve is described by $\pi = \pi^e - 2(u - u^*)$ where π^e is the expected inflation rate, and u^* is the natural rate of unemployment. Which of the following inflation rate is a credible promise that the government can make?

- A. 0%
- B. 2%
- C. 5%
- D. 10%

20. If the central bank announces a decrease in money supply while keeping the actual money supply unchanged, the rational expectations theory would predict

- A. both output and price remain unchanged.
- B. output increases, while price decreases.
- C. output decreases, while price increases.
- D. output remains unchanged, while price decreases.

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二、Problems and Short-essay Questions

Please answer the following questions IN SEQUENCE. All questions may be answered in either Chinese or English.

1. Suppose there is a small country. It imports apples at the price of \$10 per bag. The demand curve is $D = 400 - 10P$. The supply curve is $S = 50 + 5P$. The country imposes a specific tariff so that the import is 50 bags. Answer the following questions.

- (5 points) Calculate the tariff imposed by the country.
- (5 points) Calculate the tariff revenue.
- (5 points) Calculate the consumption distortion loss.
- (5 points) Calculate the production distortion loss.

2. Suppose the demand curve of a specific kind of flower for Country A is $Q^D = 200 - P$, where Q^D is the quantity demanded and P is the price. The supply curve in the same market is $Q^S = 3P$, where Q^S is the quantity supplied.

A. (15 points) Suppose scientists find that the scent of this specific kind of flower can cure mental disorders. Hence, for each unit of the quantity demanded brings \$80 external benefit. Assume the world price P^W is \$60 and is not affected by Country A's policies. Considering this external benefit, should Country A export or import how many units of this good? Please draw a graph and label all relevant points. Also, please show your calculation.

B. (5 points) How can the government deal with the issue of the external benefit that is described above? Please clearly explain your answer.

3. In an imaginary economy, consumers buy only sandwiches and magazines. In 2016, the base year, a sandwich cost \$5 and a magazine cost \$4. The consumers bought 20 sandwiches and 25 magazines at these prices. In 2017, a sandwich cost \$6.

A. (8 points) If the consumer price index in 2017 was 125, then how much did a magazine cost in 2017?

B. (12 points) Suppose that consumers bought 30 sandwiches and 25 magazines in 2017. What was the growth rate of nominal GDP between 2016 and 2017? What was the growth rate of real GDP between 2016 and 2017? What was the GDP deflator in 2017?

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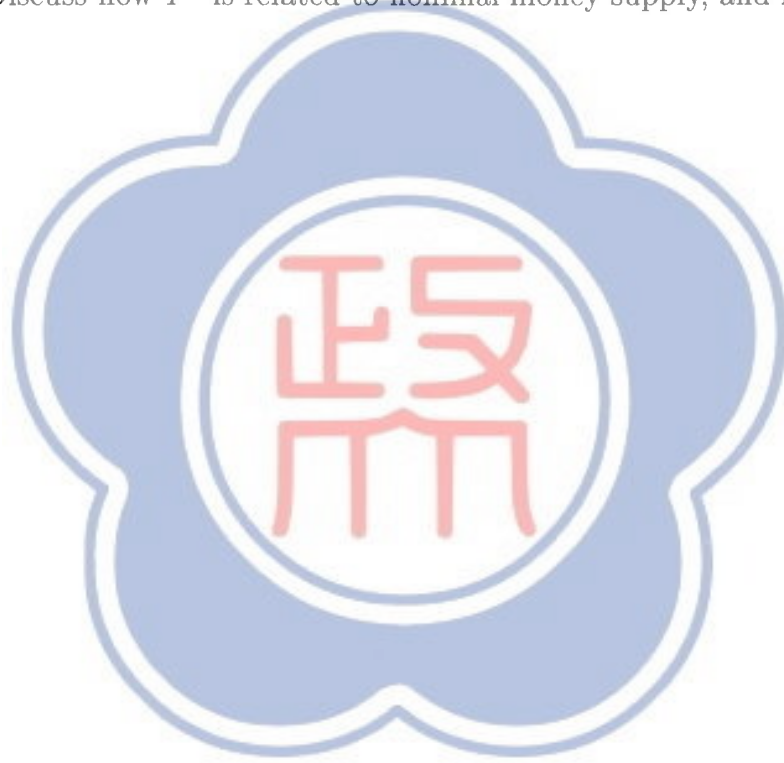
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4. Consider an economy with a consumption function $C = C_0 + c \cdot Y_d$, where Y_d represents disposable income; an investment function $I = I_0 - b \cdot r$, where r represents interest rate; tax revenue $T = T_0 + t \cdot Y$, where t represents tax rate; transfer payment TP ; a money demand function $L = k \cdot Y - h \cdot r$; a money supply function, $M = M_0/P$, where M_0 is the nominal money supply controlled by the central bank, and P represents the general price level.

A. (10 points) Derive the equilibrium output level Y^* when the goods market and the money market are in equilibrium simultaneously.

B. (10 points) Discuss how Y^* is related to nominal money supply, and how this relationship is affected by h .



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考試科目	統計學	系所別	企業管理研究所 (MBA學位學程) 甲組	考試時間	2月18日(一) 第3節
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1. (25%) Based on a survey, 23 percent of women and 33 percent of men wanted to buy a Google Android smart phone. The survey contacted 240 women and 265 men.
- (1) Find the 95% confidence interval for the difference between the proportion of men and the proportion of women interested in buying an Android device. (10%)
 - (2) Construct a contingency table with *gender* (men or women) and *attitude* (buying or not buying an Android device) for these data. (5%)
 - (3) Test whether *gender* and *attitude* are independent at the 0.05 level of significance. (10%)
2. (25%) One of the major oil products companies conducted a study recently to estimate the mean gallons of gasoline purchased by customers per visit to a gasoline station. To do this, a random sample of customers was selected with the following data being recorded that show the gallons of gasoline purchased.
- 8.7 22.4 9.5 13.3 12.9 22.0 14.4 35.7
19.0 24.9 5.7 15.7 8.9 22.5 15.9 17.5
3.2 52.6 18.8
- (1) How large should the sample size be if we require in order for a 99% confidence interval for the average gallons of gasoline purchased to have a margin error equal to 0.6 gallon? (10%)
 - (2) Construct a boxplot for these data and identify the possible outliers. (15%)
3. (20%) The following table show the chances for typical annual usages of electricity and gas by the stores for a chain of retail stores.

Chances for electricity use		Chances for gas usage	
Electricity use (KWH)	Percentage	Gas usage (MCF)	Percentage
500,000	0.3	1,200	0.3
400,000	0.4	1,000	0.4
300,000	0.25	800	0.25
200,000	0.05	600	0.05

KWH: kilowatt-hour

MCF: thousand cubic feet

The cost of electricity is roughly US\$100 per KWH, and the cost of natural gas is about US\$10 per MCF.

- (1) How much it will expect to spend on energy costs, including electricity and gas, to operate a store in the coming year? (10%)
- (2) If the correlation between electricity and gas uses is 0.4, what is its variance of energy costs to operate a store in the coming year? (10%)

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4. (30%) In order to determine the price at which their house is likely to sell, a realtor gathers a sample of 150 purchase transactions in an area during a recent three-month period. For the response in the regression model, use the price of home. Other explanatory variables defined as follows:

Price: price of the home (in thousand US dollars)

SqFeet: area of the home (in thousand square feet)

Bathrooms: number of bathrooms

Size: lot size (in thousand square feet)

Income: median household income in the subarea of the house (in million US dollars)

Fireplace: with or without fireplaces in the home

The following table shows the estimation output.

	Estimate	Standard error
<i>Constant</i>	81.66	20.49
<i>SqFeet</i>	33.75	6.77
<i>Bathrooms</i>	14.29	11.15
<i>Size</i>	6.21	2.30
<i>Income</i>	0.21	0.06
<i>Fireplace</i>	-15.14	14.25

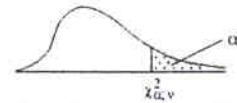
$$SSTotal = 2,069,071; R^2 = 0.593$$

Please answer the following questions.

- (1) What is the interpretation of the estimated coefficient for *Fireplace* in the regression model? (4%)
- (2) Examine which variables could be omitted from the regression model. Use the 0.05 level of significance. (10%)
- (3) Construct the ANOVA table for the regression analysis. (8%)
- (4) Compute the standard error of the regression and explain its meaning. (4%)
- (5) Compute the adjusted R^2 . (4%)

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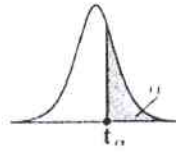
Table of the Chi-square Distribution



$\alpha =$	0.995	0.99	0.98	0.975	0.95	0.90	0.80	0.70	0.60	0.50	0.40	0.30	0.20	0.10	0.05	0.025	0.01	0.005	0.001	$= \alpha$
V = 1	0.0000455	0.000157	0.000628	0.000982	0.00393	0.0158	0.0642	1.642	2.706	3.841	5.024	5.412	6.635	7.879	10.827	13.815	16.268	18.465	20.517	V = 1
2	0.0100	0.0201	0.0404	0.0506	0.103	0.211	0.446	3.219	4.605	5.991	7.378	7.824	9.210	10.597	13.815	16.268	18.465	20.517	22.569	2
3	0.0717	0.115	0.185	0.216	0.352	0.584	1.005	4.642	6.251	7.815	9.348	9.837	11.345	12.838	16.268	18.465	20.517	22.569	24.602	3
4	0.207	0.297	0.429	0.484	0.711	1.064	1.649	5.989	7.779	9.488	11.143	11.668	13.277	14.860	18.465	20.517	22.569	24.602	26.645	4
5	0.412	0.554	0.752	0.831	1.145	1.610	2.343	7.289	9.236	11.070	12.832	13.388	15.086	16.750	20.517	22.569	24.602	26.645	28.697	5
6	0.676	0.872	1.134	1.237	1.635	2.204	3.070	8.558	10.645	12.592	14.449	15.033	16.812	18.548	22.457	24.429	26.454	28.479	30.541	6
7	0.989	1.239	1.564	1.690	2.167	2.833	3.822	9.803	12.017	14.067	16.013	16.622	18.475	20.278	24.322	26.217	28.145	30.191	32.352	7
8	1.344	1.646	2.032	2.180	2.733	3.490	4.594	11.030	13.362	15.507	17.535	18.168	20.090	21.955	26.125	27.877	29.718	31.526	33.409	8
9	1.735	2.088	2.532	2.700	3.325	4.168	5.380	12.242	14.684	16.919	19.023	19.679	21.666	23.589	27.877	29.651	31.526	33.409	35.182	9
10	2.156	2.558	3.059	3.247	3.940	4.865	6.179	13.442	15.987	18.307	20.483	21.161	23.209	25.188	29.588	31.410	33.409	35.182	37.156	10
11	2.603	3.053	3.609	3.816	4.575	5.578	6.989	14.631	17.275	19.675	21.920	22.618	24.725	26.757	31.264	33.152	35.182	37.156	38.932	11
12	3.074	3.571	4.178	4.404	5.226	6.304	7.807	15.812	18.549	21.026	23.337	24.054	26.217	28.300	32.909	34.805	36.751	38.932	40.782	12
13	3.565	4.107	4.765	5.009	5.892	7.042	8.634	16.985	19.812	22.362	24.736	25.472	27.688	29.819	34.528	36.415	38.405	40.270	42.567	13
14	4.075	4.660	5.368	5.629	6.571	7.790	9.467	18.151	21.064	23.685	26.119	26.873	29.141	31.319	36.123	37.673	39.364	41.401	43.672	14
15	4.601	5.229	5.985	6.262	7.261	8.547	10.307	19.311	22.307	24.996	27.488	28.259	30.578	32.801	37.697	38.932	40.782	42.567	44.567	15
16	5.142	5.812	6.614	6.908	7.962	9.312	11.152	20.465	23.542	26.296	28.845	29.633	32.000	34.267	39.252	40.782	42.567	44.567	46.797	16
17	5.697	6.408	7.255	7.564	8.672	10.085	12.002	21.615	24.769	27.587	30.191	30.995	33.409	35.718	40.790	42.567	44.567	46.797	48.932	17
18	6.265	7.015	7.906	8.231	9.390	10.865	12.857	22.760	25.989	28.869	31.526	32.346	34.805	37.156	42.312	44.567	46.797	48.932	51.082	18
19	6.844	7.633	8.567	8.907	10.117	11.651	13.716	23.900	27.204	30.144	32.852	33.687	36.191	38.582	43.820	45.722	47.962	50.000	52.131	19
20	7.434	8.260	9.237	9.591	10.851	12.443	14.578	25.038	28.412	31.410	34.170	35.020	37.566	39.997	45.315	47.962	50.000	52.131	54.279	20
21	8.034	8.897	9.915	10.283	11.591	13.240	15.445	26.171	29.615	32.671	35.479	36.343	38.932	41.401	46.797	48.932	51.082	53.182	55.315	21
22	8.643	9.542	10.600	10.982	12.338	14.041	16.314	27.301	30.813	33.924	36.781	37.659	40.289	42.796	48.268	50.000	52.131	54.279	56.402	22
23	9.260	10.196	11.293	11.688	13.091	14.848	17.187	28.429	32.007	35.172	38.076	38.968	41.638	44.181	49.728	51.082	53.182	55.315	57.541	23
24	9.886	10.856	11.992	12.401	13.848	15.659	18.062	29.553	33.196	36.415	39.364	40.270	42.980	45.558	51.179	53.182	55.315	57.541	59.697	24
25	10.520	11.524	12.697	13.120	14.611	16.473	18.940	30.675	34.382	37.652	40.646	41.566	44.314	46.928	52.620	54.279	56.402	58.700	60.800	25
26	11.160	12.198	13.409	13.844	15.379	17.292	19.820	31.795	35.563	38.885	41.923	42.856	45.642	48.290	54.052	56.402	58.700	60.800	62.900	26
27	11.808	12.879	14.125	14.573	16.151	18.114	20.703	32.912	36.741	40.113	43.194	44.140	46.963	49.645	55.476	57.541	59.697	61.800	64.000	27
28	12.461	13.565	14.847	15.308	16.928	18.930	21.588	34.027	37.916	41.337	44.461	45.419	48.278	50.993	56.893	58.700	60.800	62.900	65.100	28
29	13.121	14.256	15.574	16.047	17.708	19.768	22.475	35.139	39.087	42.557	45.722	46.693	49.588	52.336	58.302	60.800	62.900	64.900	67.200	29
30	13.787	14.953	16.306	16.791	18.493	20.599	23.364	36.250	40.256	43.773	46.979	47.962	50.892	53.672	59.703	61.800	63.900	65.900	68.300	30
40	20.706	22.164	23.838	24.433	26.509	29.051	32.345	47.269	51.805	55.759	59.342	60.436	63.691	66.766	73.402	75.000	76.154	77.300	78.450	40
50	27.991	29.707	31.664	32.357	34.764	37.689	41.449	58.164	63.167	67.505	71.420	72.613	76.154	79.490	86.661	88.000	89.154	90.300	91.450	50
60	35.535	37.485	39.699	40.482	43.188	46.459	50.641	68.972	74.397	79.082	83.298	84.580	88.379	91.952	99.607	101.000	102.154	103.300	104.450	60
70	43.275	45.442	47.893	48.758	51.739	55.329	59.898	79.715	85.527	90.531	95.023	96.388	100.425	104.215	112.317	114.000	115.154	116.300	117.450	70
80	51.171	53.539	56.213	57.153	60.391	64.278	69.207	90.405	96.578	101.880	106.629	108.069	112.329	116.321	124.839	126.000	127.154	128.300	129.450	80
90	59.196	61.754	64.634	65.646	69.126	73.291	78.558	101.054	107.565	113.145	118.136	119.648	124.116	128.299	137.208	139.000	140.154	141.300	142.450	90
100	67.327	70.065	73.142	74.222	77.929	82.358	87.945	111.667	118.498	124.342	129.561	131.142	135.807	140.170	149.449	151.000	152.154	153.300	154.450	100

考試科目	統計學	系所別	企業管理研究所 (MBA學位學程)甲組	考試時間	2月18日(一)第3節
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Percentage Points of the t Distribution; $t_{v, \alpha}$
 $P(T > t_{v, \alpha}) = \alpha$



v	α													
	0.40	0.30	0.20	0.15	0.10	0.05	0.025	0.02	0.015	0.01	0.0075	0.005	0.0025	0.0005
1	0.325	0.727	1.376	1.963	3.078	6.314	12.706	15.895	21.205	31.821	42.434	63.657	127.322	636.590
2	0.289	0.617	1.061	1.386	1.886	2.920	4.303	4.849	5.643	6.965	8.073	9.925	14.089	31.598
3	0.277	0.584	0.978	1.250	1.638	2.353	3.182	3.482	3.896	4.541	5.047	5.841	7.453	12.924
4	0.271	0.569	0.941	1.190	1.533	2.132	2.776	2.999	3.298	3.747	4.088	4.604	5.598	8.610
5	0.267	0.559	0.920	1.156	1.476	2.015	2.571	2.757	3.003	3.365	3.634	4.032	4.773	6.869
6	0.265	0.553	0.906	1.134	1.440	1.943	2.447	2.612	2.829	3.143	3.372	3.707	4.317	5.959
7	0.263	0.549	0.896	1.119	1.415	1.895	2.365	2.517	2.715	2.998	3.203	3.499	4.029	5.408
8	0.262	0.546	0.889	1.108	1.397	1.860	2.306	2.449	2.634	2.896	3.085	3.355	3.833	5.041
9	0.261	0.543	0.883	1.100	1.383	1.833	2.262	2.398	2.574	2.821	2.998	3.250	3.690	4.781
10	0.260	0.542	0.879	1.093	1.372	1.812	2.228	2.359	2.527	2.764	2.932	3.169	3.581	4.587
11	0.260	0.540	0.876	1.088	1.363	1.796	2.201	2.328	2.491	2.718	2.879	3.106	3.497	4.437
12	0.259	0.539	0.873	1.083	1.356	1.782	2.179	2.303	2.461	2.681	2.836	3.055	3.428	4.318
13	0.259	0.538	0.870	1.079	1.350	1.771	2.160	2.282	2.436	2.650	2.801	3.012	3.372	4.221
14	0.258	0.537	0.868	1.076	1.345	1.761	2.145	2.264	2.415	2.624	2.771	2.977	3.326	4.140
15	0.258	0.536	0.866	1.074	1.341	1.753	2.131	2.249	2.397	2.602	2.746	2.947	3.286	4.073
16	0.258	0.535	0.865	1.071	1.337	1.746	2.120	2.235	2.382	2.583	2.724	2.921	3.252	4.015
17	0.257	0.534	0.863	1.069	1.333	1.740	2.110	2.224	2.368	2.567	2.706	2.898	3.222	3.965
18	0.257	0.534	0.862	1.067	1.330	1.734	2.101	2.214	2.356	2.552	2.689	2.878	3.197	3.922
19	0.257	0.533	0.861	1.066	1.328	1.729	2.093	2.205	2.346	2.539	2.674	2.861	3.174	3.883
20	0.257	0.533	0.860	1.064	1.325	1.725	2.086	2.197	2.336	2.528	2.661	2.845	3.153	3.850
21	0.257	0.532	0.859	1.063	1.323	1.721	2.080	2.189	2.328	2.518	2.649	2.831	3.135	3.819
22	0.256	0.532	0.858	1.061	1.321	1.717	2.074	2.183	2.320	2.508	2.639	2.819	3.119	3.792
23	0.256	0.532	0.858	1.060	1.319	1.714	2.069	2.177	2.313	2.500	2.629	2.807	3.104	3.768
24	0.256	0.531	0.857	1.059	1.318	1.711	2.064	2.172	2.307	2.492	2.620	2.797	3.091	3.745
25	0.256	0.531	0.856	1.058	1.316	1.708	2.060	2.167	2.301	2.485	2.612	2.787	3.078	3.725
26	0.256	0.531	0.856	1.058	1.315	1.706	2.056	2.162	2.296	2.479	2.605	2.779	3.067	3.707
27	0.256	0.531	0.855	1.057	1.314	1.703	2.052	2.158	2.291	2.473	2.598	2.771	3.057	3.690
28	0.256	0.530	0.855	1.056	1.313	1.701	2.048	2.154	2.286	2.467	2.592	2.763	3.047	3.674
29	0.256	0.530	0.854	1.055	1.311	1.699	2.045	2.150	2.282	2.462	2.586	2.756	3.038	3.659
30	0.256	0.530	0.854	1.055	1.310	1.697	2.042	2.147	2.278	2.457	2.581	2.750	3.030	3.646
40	0.255	0.529	0.851	1.050	1.303	1.684	2.021	2.123	2.250	2.423	2.542	2.704	2.971	3.551
60	0.254	0.527	0.848	1.045	1.296	1.671	2.000	2.099	2.223	2.390	2.504	2.660	2.915	3.460
120	0.254	0.526	0.845	1.041	1.289	1.658	1.980	2.076	2.196	2.358	2.468	2.617	2.860	3.373
∞	0.253	0.524	0.842	1.036	1.282	1.645	1.960	2.054	2.170	2.326	2.432	2.576	2.807	3.291

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	管理學	系所別	企業管理研究所 (MBA學位學程)	考試時間	2月18日(一)第3節
<p>1. (25%) 對企業經理人來說，除了執行管理的基本功能之外，如何形塑適當的「組織文化」往往是一大挑戰。</p> <p>a. (8%) 請說明何謂「組織文化」？</p> <p>b. (8%) 「組織文化」的構成要素包括哪些？請舉例說明。</p> <p>c. (9%) 你認為組織文化會影響到企業的經營績效嗎？為什麼？</p> <p>2. (25%) 所謂的「全球化 (globalization)」指個人、企業或團體，不再侷限於單一區域或母國國內的勢力範圍，而是建構跨國、跨區域的企業網絡運行。</p> <p>a. (10%) 請說明當企業欲進行全球化經營時，有哪些選擇進入的方式？在選擇上你認為企業應有哪些考量？</p> <p>b. (15%) 請說明全球化下企業所面對的新議題有哪些面向？你認為那些面向對企業的影響最大？為什麼？</p> <p>3. (25%) 阿里巴巴集團創辦人馬雲曾經說過：「員工的離職原因林林總總，只有兩點最真實：(1) 錢，沒給到位；(2) 心，委屈了。」</p> <p>a. (15%) 試舉出任三項激勵理論，說明你是否支持馬雲的論點？為什麼？</p> <p>b. (10%) 從人力資源管理 (Human Resource Management) 的角度而言，這兩點員工離職的原因，最可能反應出哪一些人力資源管理相關功能面的缺失？為什麼？</p> <p>4. (25%) 近年來，緊抓流行趨勢又相對平價的「快時尚 (Fast Fashion)」風潮席捲全球，看到喜歡就買，穿膩、過季了就丟，消費需求獲得滿足，品牌營業額也節節高升。然而，快時尚品牌背後的供應鏈生態環境也受到人們的高度關注。</p> <p>a. (15%) 試說明「快時尚」背後的相關倫理議題為何？</p> <p>b. (10%) 試以「快時尚」為例，說明何謂倫理的兩難？為何企業會面臨倫理的兩難？</p>					
備註	<p>一、作答於試題上者，不予計分。</p> <p>二、試題請隨卷繳交。</p>				

考試科目	管理學	系所別	企業管理研究所 (MBA學位學程)	考試時間	2月18日(一)第3節
<p>1. (25%) 對企業經理人來說，除了執行管理的基本功能之外，如何形塑適當的「組織文化」往往是一大挑戰。</p> <p>a. (8%) 請說明何謂「組織文化」？</p> <p>b. (8%) 「組織文化」的構成要素包括哪些？請舉例說明。</p> <p>c. (9%) 你認為組織文化會影響到企業的經營績效嗎？為什麼？</p> <p>2. (25%) 所謂的「全球化 (globalization)」指個人、企業或團體，不再侷限於單一區域或母國國內的勢力範圍，而是建構跨國、跨區域的企業網絡運行。</p> <p>a. (10%) 請說明當企業欲進行全球化經營時，有哪些選擇進入的方式？在選擇上你認為企業應有哪些考量？</p> <p>b. (15%) 請說明全球化下企業所面對的新議題有哪些面向？你認為那些面向對企業的影響最大？為什麼？</p> <p>3. (25%) 阿里巴巴集團創辦人馬雲曾經說過：「員工的離職原因林林總總，只有兩點最真實：(1) 錢，沒給到位；(2) 心，委屈了。」</p> <p>a. (15%) 試舉出任三項激勵理論，說明你是否支持馬雲的論點？為什麼？</p> <p>b. (10%) 從人力資源管理 (Human Resource Management) 的角度而言，這兩點員工離職的原因，最可能反應出哪一些人力資源管理相關功能面的缺失？為什麼？</p> <p>4. (25%) 近年來，緊抓流行趨勢又相對平價的「快時尚 (Fast Fashion)」風潮席捲全球，看到喜歡就買，穿膩、過季了就丟，消費需求獲得滿足，品牌營業額也節節高升。然而，快時尚品牌背後的供應鏈生態環境也受到人們的高度關注。</p> <p>a. (15%) 試說明「快時尚」背後的相關倫理議題為何？</p> <p>b. (10%) 試以「快時尚」為例，說明何謂倫理的兩難？為何企業會面臨倫理的兩難？</p>					
備註	<p>一、作答於試題上者，不予計分。</p> <p>二、試題請隨卷繳交。</p>				

考試科目	微積分	系所別	企業管理系乙組	考試時間	2月18日(一)第三節
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- Icybar sales ice cream for NT\$50 each ball. The average sales per day was 4,000 balls. When the price was raised to NT\$55 per ball, the average sales per day declined to an average of 3,500 balls. Assume that the demand equation is linear.
 - (10 points) Find the demand equation.
 - (10 points) Find the price (per ball) that will maximize the daily revenue.
 - (10 points) Find the elasticity of demand at a price of NT\$50.
 - (10 points) If Icybar has fixed costs of NT\$20,000 per day and the variable cost is NT\$8 per ball, find the price (per ball) that will maximize the daily profit.

- The owner of a Christmas store wants to determine the number of a certain Christmas ornament to be stocked for the upcoming Christmas season. The purchasing wholesale price is NT\$20 per item, and the selling price is NT\$50 per item. Any items not sold during this season will be sold for the nominal price of NT\$10 each (the *salvage value*). Let

q = order quantity,
 x = demand.

We have

$$\begin{aligned} \text{Profit} &= 50\min\{q, x\} - 20q + 10\max\{0, q - x\} \\ &= 50x - 50\max\{0, x - q\} - 20q + 10\max\{0, q - x\}. \end{aligned}$$

Assume that the demand has a probability distribution $f(x)$. So, the expected profit is

$$h(q) = \int_0^{\infty} [50x - 50(x - q)1_{\{x > q\}}(x) - 20q + 10(q - x)1_{\{x < q\}}(x)] f(x) dx.$$

- (15 points) Assume that

$$f(x) = \frac{1}{10000} e^{-x/10000}, \quad x > 0,$$

an exponential distribution with a mean of 10,000. Find the optimal order quantity that will maximize the expected profit.

- (15 points) (cont'd) Estimate the maximum expected profit.
- (15 points) (cont'd) Estimate the expected profit from ordering 10,000 items.

- (15 points) Find the minimum value of $x_1^2 + x_2^2 + x_3^2$ subject to $2x_1 + 2x_2 + x_3 + 9 = 0$.

備註

- 作答於試題上者，不予計分。
- 試題請隨卷繳交。