

考 試 科 目	財務管理 41711	所 別	財務管理研究所	考 試 時 間	2 月 27 日(六) 第二節
---------	------------	-----	---------	---------	-----------------

I. Multiple-choice questions: select the most suitable answer for each question. (40%, 4% each)

1. Which one of the following can best represent the objective of a publicly listed company?
 - a. Maximize earnings
 - b. Maximize market shares
 - c. Maximize stock price
 - d. Maximize market share

2. Which one of the following methods can improve a company's liquidity?
 - a. Shorten the account payable period
 - b. Shorten the account receivable period
 - c. Provide higher credit line to customers
 - d. Concentrate the business transactions to a smaller group of customers

3. Please rank the following investment choices (from the highest priority to the lowest) for a customer who is about to retire: I. Pharmaceutical Stock; II. Utility Stock; III. Government Bond; IV. BBB Corporate Bond.
 - a. I, II, III, IV
 - b. II, III, IV, I
 - c. III, II, IV, I
 - d. III, II, I, IV

Please use the following information for questions 4 to 6.

The average risk premium for a capital market is 6.5%. The yield to maturity of 10-year government bond is 2.5%. The yield-to-maturity of 1-year government treasury is 1.5%. The average annual market return in the past 12 months is 2.5%.

The systematic risk (beta) of company H is 1.5, and beta of company L is 0.8. Market beta is 1.

4. Please estimate the require rate of return for investors of companies H and L.
 - a. 8.5%; 5.7%
 - b. 3.0%; 2.3%
 - c. 12.25%; 7.7%
 - d. 2.5%; 2.5%

5. Please estimate the cost of equity for companies H and L.
 - a. 8.5%; 5.7%
 - b. 3.0%; 2.3%
 - c. 12.25%; 7.7%
 - d. 11.25%; 6.7%

考試科目	財務管理 41711	所別	財務管理研究所	考試時間	2月27日(六) 第二節
------	------------	----	---------	------	--------------

6. Following Q5, both companies H and L just paid dividend (D_0) \$1. The expected growth rates are 8% and 3% for companies H and L, respectively. What should be the intrinsic value of stocks H and L?
- \$216; \$38.2
 - \$25.4; \$21.9
 - \$33.2; \$27.8
7. Which of the following statements is false?
- The NPV and IRR methods would always lead to the same conclusion for a capital budgeting decision.
 - For mutually exclusive project evaluation, the NPV method tends to choose the larger project than the smaller project.
 - For mutually exclusive project evaluation, the IRR method tends to choose the smaller project than the larger project.
 - It is likely that IRR method cannot conclude for a capital budgeting decision.
8. Which of the following statements is false?
- The higher the firm's leverage, the more the firm exploits the tax advantage of debt, and the lower its WACC.
 - Corporate taxes lower the effective cost of debt financing, which translates into a reduction in the weighted average cost of capital.
 - Because the firm's free cash flow is computed without considering the firm's leverage, we account for the benefit of the interest tax shield by calculating the WACC using the before tax cost of debt.
 - The reduction in the WACC increases with the amount of debt financing.
9. Which of the following statements is false?
- One way to see why you sometimes choose not to invest in a positive-NPV project is to think about the decision of when to invest as a choice between two mutually exclusive projects: (1) invest today or (2) wait.
 - You invest today only when the NPV of investing today exceeds the value of the option of waiting, which from option pricing theory we know to be always positive.
 - When you do not have the option to wait, it is optimal to invest in any positive-NPV project.
 - When you have the option of deciding when to invest, it is usually optimal to invest only when the NPV is positive but close to zero.
10. Which of the following statements is false?
- All else being equal, larger firms, because they are more diversified, have an increased probability of bankruptcy.
 - To justify a takeover based on operating losses, management would have to argue that the tax savings are over and above what the firm would save using carryback and carryforward provisions.

考 試 科 目	財務管理 41711	所 別	財務管理研究所	考 試 時 間	2 月 27 日(六) 第二節
---------	------------	-----	---------	---------	-----------------

- c. It is possible to combine two companies with the result that the earnings per share of the merged company exceed the premerger earnings per share of either company, even when the merger itself creates no economic value.
- d. When an acquirer buys a private target, it provides the target's owners with a way to reduce their risk exposure by cashing out their investment in the private target and reinvesting in a diversified portfolio.

II. Calculations and Essays (60%; 15% each)

1. LT&T, a telecommunications firm, reported earnings before interest and taxes of \$ 2 billion and interest expenses of \$ 400 million. The book value of debt at the end of the year was \$ 6 billion, and the average maturity of the debt is 4 years. The firm has 250 million shares outstanding, trading at \$ 40 a share. The table below summarizes the relationship between interest coverage ratios and ratings for large U.S. firms.

<i>Interest Coverage Ratio</i>	<i>Rating</i>	<i>Default Spread</i>
> 12.5	AAA	0.20%
9.50 - 12.50	AA	0.50%
7.50 - 9.50	A+	0.80%
6.00 - 7.50	A	1.00%
4.50 - 6.00	A-	1.25%
3.50 - 4.50	BBB	1.50%
3.00 - 3.50	BB	2.50%
2.50 - 3.00	B+	3.00%
2.00 - 2.50	B	3.75%
1.50 - 2.00	B-	4.75%
1.25 - 1.50	CCC	6.00%
0.80 - 1.25	CC	7.50%
0.50 - 0.80	C	9.00%
< 0.65	D	11.00%

- a. Estimate a synthetic rating for LT&T, based upon the interest coverage ratio.
 - b. Estimate the market value of LT&T debt.
 - c. The unlevered beta is 0.70. The firm faces a tax rate of 40%. The risk-free rate is 4% and the market risk premium is 8%. Please estimate the cost of capital for LT&T.
2. Increasing dividends can send a positive signal to financial markets, leading to an increase in stock prices.
- a. For what types of firms are dividends most likely to operate as positive signals?
 - b. How would you empirically test this proposition?

考 試 科 目	財務管理 41711	所 別	財務管理研究所	考 試 時 間	2 月 27 日(六) 第二節
---------	------------	-----	---------	---------	-----------------

3. Unitrode Inc. is a firm that manufactures telecommunications equipment. The firm has 500 million shares outstanding, trading at \$ 8 a share, and \$ 2 billion in debt outstanding. You have regressed debt ratios against firm characteristics at comparable firms in the sector:

$$(Debt/Capital) = 0.15 + 0.80 (EBITDA/Firm Value) - 0.10 (StdDev in Operating Income)$$

Unitrode had earnings before interest and taxes of \$ 800 million, and depreciation and amortization of \$ 200 million. In addition, the standard deviation in the firm's operating income is 20%.

- Is Unitrode under or over levered, relative to other firms in the sector?
 - What would Unitrode need to do (in terms of recapitalizing itself) to make its debt ratio comparable to those other firms in the sector?
4. Please read the following article summary of "Outback Steakhouse Parent Sets IPO" by Drew Fitzgerald and answer the questions.

Outback Steakhouse parent Bloomin' Brands Inc. filed plans for an initial public offering of up to \$300 million in common stock to help pay down debt taken on from its 2007 private-equity buyout. The casual-dining company, which also owns Carrabba's Italian Grill, Bonefish Grill, Fleming's Prime Steakhouse and Wine Bar, and Roy's, has carried a heavy debt load since its predecessor accepted a roughly \$3 billion bid from a group led by private-equity firms Bain Capital Partners LLC and Catterton Management Co. Bloomin's private-equity backers are now preparing to take the company public during a challenging time for the casual-dining sector, which has struggled in recent years under pressure from cost-conscious consumers and high commodity prices.

- Why do you think Bloomin' Brands is undertaking an initial public offering to pay down its debt rather than refinancing that debt at current low interest rates?
- Why do you think Bloomin' Brands is undertaking an initial public offering now rather than waiting for a less challenging time for the industry?

備

註

- 作答於試題上者, 不予計分。
- 試題請隨卷繳交。

考試科目	統計學 4/7/2	所別	財務管理學系	考試時間	2 月 27 日(六) 第三節
------	--------------	----	--------	------	-----------------

I. Single choice questions (3 points each)

選擇題請在答案卡上作答，否則不予計分。

Some upper quantiles for $N(0,1)$: $z_{0.01} = 2.33$, $z_{0.025} = 1.96$, $z_{0.05} = 1.65$, $z_{0.1} = 1.28$

1. The table below shows the result of a survey regarding the rating of 180 hedge fund managers.

poor	fair	excellent
80	60	40

Which of the following measure is meaningful for this data?

- (a) Mean.
 - (b) Range.
 - (c) Median.
 - (d) None of the above.
2. Let X_1, X_2 be a random sample of 2 measurements selected from a population with probability distribution $P(X = 0) = 0.2$, $P(X = 1) = 0.3$, and $P(X = 2) = 0.5$. Find the variance of the sample mean \bar{X}_2 .
- (a) 1.22
 - (b) 0.61
 - (c) 0.305
 - (d) None of the above.
3. A financial company has recruited 50 employees over the past two years. Each employee is classified according to gender and major. The result is given in the following table.

	female	male
science	2	4
engineering	6	8
business	16	14

What is the probability that a randomly selected female will major in business?

- (a) $2/3$
 - (b) $3/5$
 - (c) $12/25$
 - (d) None of the above.
4. Which of the following plots can *not* be used to check normality?
- (a) QQ-plot.
 - (b) Histogram.
 - (c) Stemplot.
 - (d) None of the above.

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 41712	所別	財務管理學系	考試時間	2月27日(六)第三節
------	--------------	----	--------	------	-------------

5. The return on investment earned by Company A for three successive years was: 14 percent, -6 percent, and 5 percent, where the total return each year is reinvested for the next year. Find the annual rate of return on investment.
- (a) 1 percent
(b) 2 percent
(c) 4 percent
(d) None of the above.
6. Which of the following statements is true?
- (a) $\text{Poisson}(\lambda)$, $\lambda > 0$, can be approximated by $\text{Binomial}(n, \lambda/n)$ when n is large enough.
(b) The variance of a $\text{Poisson}(\lambda)$ random variable is 2λ .
(c) The hypergeometric distribution describes the probability of x successes in n draws with replacement, where each draw is either a success or a failure.
(d) None of the above.
7. Let X be the number of heads in 100 tosses of a fair coin. What can we say about the probability of the event $\{X > 40\}$?
- (a) Greater than 0.95.
(b) Between 0.95 and 0.75.
(c) Between 0.75 and 0.5.
(d) Less than 0.5.
8. A box contains 5000 balls with 3000 red and 2000 black. Two hundred balls are randomly selected from the box without replacement. Let X denote the number of red balls among the 200 selected balls. What can we say about the probability of the event $\{X > 100\}$?
- (a) Greater than 0.95.
(b) Between 0.95 and 0.75.
(c) Between 0.75 and 0.5.
(d) Less than 0.5.
9. Which of the following statements is true?
- (a) In stratified random sampling strata are more homogeneous.
(b) In cluster random sampling, clusters are internally homogeneous.
(c) Systematic sampling is also called snowball sampling.
(d) None of the above.
10. Determining an appropriate sample size requires an estimate about standard deviation, which may be obtained via a *pilot study*. What does a *pilot study* mean?
- (a) It is a study involving aircraft engineering.
(b) It is a preliminary analysis.
(c) It is about aviation training.
(d) None of the above.

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 41712	所別	財務管理學系	考試時間	2月27日(六)第三節
------	-----------	----	--------	------	-------------

11. A manufacturer would like to purchase silver rods with a diameter of 12mm. A random sample of silver rods are selected from the incoming shipments to test whether the diameter is 12mm. What are the null and alternate hypotheses?
- (a) $H_0 : \mu = 12\text{mm}$ vs $H_1 : \mu > 12\text{mm}$
 (b) $H_0 : \mu = 12\text{mm}$ vs $H_1 : \mu \neq 12\text{mm}$
 (c) $H_0 : \mu \neq 12\text{mm}$ vs $H_1 : \mu = 12\text{mm}$
 (d) $H_0 : \mu = 12\text{mm}$ vs $H_1 : \mu < 12\text{mm}$
12. (continued) Suppose that the sample standard deviation based on 100 randomly selected rods is 0.5mm, and that the manufacturer decides to accept the shipments if the sample mean lies between 11.936mm and 12.064mm. What is the probability of rejecting the H_0 when it is true?
- (a) 0.05
 (b) 0.1
 (c) 0.2
 (d) None of the above.
13. We are to estimate the percentage of college students who shop online. At 98% confidence, about what sample size would be necessary in order for the margin of error to be about 0.04?
- (a) 426
 (b) 602
 (c) 848
 (d) None of the above.
14. We are interested in the amount of time per week spending on Internet among college students. Let μ denote the population mean. Based on a randomly selected sample, the sample mean is 31 hours and the 95% confidence interval is (28,34). Which of the following statements is true?
- (a) The probability that μ lies in (28,34) is 0.95.
 (b) The probability that the sample mean lies in (28,34) is 0.95.
 (c) About 95% of similarly constructed confidence interval will cover the sample mean.
 (d) None of the above.
15. (continued) Consider the hypothesis testing $H_0 : \mu = 30$ vs $H_1 : \mu \neq 30$. Which of the following statements is true?
- (a) The p -value is less than 0.01.
 (b) H_0 is rejected.
 (c) H_0 is not rejected.
 (d) There is not enough information to draw a conclusion.

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 41712	所別	財務管理學系	考試時間	2月27日(六)第三節
------	-----------	----	--------	------	-------------

16. Two candidates (Alice and Bob) are ranked by 5 recruiting committee members (A,B,C,D,E). The result is below. Compare the Pearson's correlation coefficient r and the Spearman's rank correlation coefficient r_s for this dataset.

member	A	B	C	D	E
Alice	3	2	1	5	4
Bob	2	1	3	4	5

- (a) $0 < r < r_s$.
 (b) $0 < r_s < r$.
 (c) $r = r_s$.
 (d) None of the above.
17. Which of the following statements is correct?
 (a) Goodness-of-fit tests only apply to categorical data.
 (b) Non-parametric methods make more assumptions on the model distribution.
 (c) Spearman's rank correlation coefficient is less sensitive to outliers when compared to Pearson's correlation coefficient.
 (d) None of the above.
18. Consider the analogy question: *two independent samples t-test* is to *paired samples t-test* as
 (a) *Kruskal-Wallis test* is to *Analysis of variance*.
 (b) *The sign test* is to *Wilcoxon signed-rank test*.
 (c) *Wilcoxon rank-sum test* is to *Wilcoxon signed-rank test*.
 (d) None of the above.
19. Which of the following is for testing serial independence?
 (a) Shapiro-Wilk test.
 (b) Durbin-Watson test.
 (c) Phillips-Perron test.
 (d) None of the above.
20. Which of the following measures multicollinearity?
 (a) Variance inflation factor.
 (b) Multiple standard error of estimate.
 (c) Coefficient of determination.
 (d) None of the above.

備

註

一、作答於試題上者，不予計分。
 二、試題請隨卷繳交。

4112, 41212, 4122A, 41713, 41822, 41922, 4194C, 42112, 42122.

考試科目	經濟學	所別	商院共同科	考試時間	2 月 27 日 (六) 第 / 節
------	-----	----	-------	------	--------------------

Multiple Choice (1 point each)

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

1. Assume that the price elasticity of demand for good X is constant and equal to -0.5 , and the price elasticity of demand for good Y is constant and equal to -2 . Assume that goods X and Y have identical upward-sloping elastic supply curves. If a per-unit excise tax of the same amount is levied on good X and on good Y , which of the following would be true?

A. The percentage decrease in the quantity of good X demanded would be greater than the percentage decrease in the quantity of good Y demanded.

B. The tax share paid by consumers of good X would be relatively higher than that paid by consumers of good Y .

C. The tax share paid by consumers of good Y would be relatively higher than that paid by consumers of good X .

D. The tax share paid by sellers of good Y would be relatively lower than that paid by sellers of good X .

2. If the income elasticity of demand for good X is negative and the cross-price elasticity of demand between good X and good Y is negative, which of the following must be true of good X ?

A. X is a normal good and is a substitute for Y .

B. X is a normal good and is a complement to Y .

C. X is an inferior good and is a substitute for Y .

D. X is an inferior good and is a complement to Y .

3. If an industry ignores the external costs it generates in its production, which of the following will be true at the competitive market equilibrium output?

A. Price will be greater than the marginal social cost.

B. Price will be less than the marginal social cost.

C. Price will be equal to the marginal social cost.

D. Marginal private cost will be greater than the marginal social cost.

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	經濟學	所別	高院共同科	考試時間	2 月 27 日 (六) 第 / 節
------	-----	----	-------	------	--------------------

4. Karen works part-time at a local convenience store and earns \$10 per hour. She wants to spend next Saturday afternoon attending a music concert. The full price of a concert ticket is \$75, but Karen was able to get a discounted price of \$50 from a friend who purchased the ticket but has become unable to attend. If Karen took 4 hours off from her job to attend the concert, what was her opportunity cost of attending the concert?

- A. \$40
- B. \$50
- C. \$90
- D. \$125

5. Which of the following is true of the substitution effect of an increase in the price of a normal good?

- A. It works to offset the income effect.
- B. It works to reinforce the income effect.
- C. It is less than the income effect.
- D. It causes an increase in the quantity demanded of the good.

6. A firm employs unskilled and skilled labor in a cost-minimizing mix at its manufacturing plant. The marginal product of unskilled labor is considerably lower than skilled labor. The equilibrium wage of the unskilled labor is only NT\$90 per hour. The government passes a law that mandates a minimum wage of NT\$120 per hour. Equilibrium wages for skilled workers exceed this minimum wage and therefore are not affected by the new law. The firm will most likely respond to the imposition of the minimum wage law by:

- A. employing fewer skilled workers and allocate their salaries to unskilled workers.
- B. keeping the mix of unskilled and skilled workers the same.
- C. employing more unskilled workers at its plant.
- D. employing fewer unskilled workers at its plant.

7. The short-term shutdown point of production for a firm operating under perfect competition will most likely occur when:

- A. price is equal to average total cost.
- B. marginal revenue is equal to marginal cost.
- C. marginal revenue is less than average variable costs.
- D. price is less than the marginal cost.

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	經濟學	所別	商院共同科	考試時間	二月七日(六)第/節
------	-----	----	-------	------	------------

8. Which of the following might cause a monopoly to exist?

- I. Economies of scale
 - II. A single firm owning a key resource
 - III. A firm owning a patent on a product
 - IV. A firm being a price taker
 - V. Price discrimination
- A. I, II, and III only.
 - B. II, III, and V only.
 - C. I, II and IV only.
 - D. II, III and V only.

9. Which of the following events could cause an increase in the production of labor?

- I. Office workers receive faster computers.
 - II. Wages for textile workers rise.
 - III. More useful tools are given to a construction crew working on a house.
 - IV. The minimum wage law is enforced.
 - V. Bank clerks take a training course.
- A. I and III only.
 - B. I, III and V only.
 - C. I, II, and IV only.
 - D. II, IV, and V only.

10. Companies most likely have a well-defined supply function when the market structure is

- A. oligopoly.
- B. monopoly.
- C. perfect competition.
- D. monopolistic competition.

11. Suppose that a country produces only two goods, x and y . In year 2012, the price of x is $P_x = 5$ and the production level is $Q_x = 5$. The price and production level of y are $P_y = 5$ and $Q_y = 5$. In year 2015, they are $P_x = 10$, $Q_x = 2.5$, $P_y = 10$, and $Q_y = 2.5$. If the base year is 2012, how the nominal and real GDP change between 2012 and 2015.

- A. The nominal GDP does not change. The real GDP decreases.
- B. The nominal GDP increases. The real GDP increases.

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	經濟學	所別	商院共同科	考試時間	2月27日(六)第/節
------	-----	----	-------	------	-------------

- C. The nominal GDP decreases. The real GDP decreases.
 D. The nominal GDP does not change. The real GDP increases.
12. In the Keynesian model, the output is more sensitive to the change of money supply if
 A. investment is more elastic to changes in interest rate.
 B. the unemployment is high.
 C. the country trades more with rest of the world.
 D. the country has been operating on the production possibility frontier.
13. If the central bank purchases government bonds from the public,
 A. supply of money increases.
 B. interest rate increases.
 C. the discount rate increases.
 D. the price of bond decreases.
14. The natural rate of unemployment is the unemployment rate when the country
 A. has zero growth rate.
 B. has no inflation.
 C. has only cyclical and structural unemployment.
 D. operates on the production possibility frontier.
15. When the central bank increases the money supply, according to the short-run Philips curve, which of the following is true?
 A. Both the unemployment rate and the inflation rate will decrease.
 B. Both the unemployment rate and the inflation rate will not change.
 C. The unemployment rate will decrease but the inflation rate will increase.
 D. Both the unemployment rate and the inflation rate will increase.
16. Which of the following will decrease U.S. net capital outflow?
 A. capital flight from the United States
 B. the government budget deficit increases
 C. the U.S. imposes import quotas
 D. None of the above is correct.

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	經濟學	所別	商院共同科	考試時間	2月7日(六)第/節
------	-----	----	-------	------	------------

17. An economic contraction caused by a shift in aggregate demand remedies itself over time as the expected price level

- A. rises, shifting aggregate demand right.
- B. rises, shifting aggregate demand left.
- C. falls, shifting aggregate supply right.
- D. falls, shifting aggregate supply left.

18. The term *crowding-out effect* refers to

A. the reduction in aggregate supply that results when a monetary expansion causes the interest rate to decrease.

B. the reduction in aggregate demand that results when a monetary expansion causes the interest rate to decrease.

C. the reduction in aggregate demand that results when a fiscal expansion causes the interest rate to increase.

D. the reduction in aggregate demand that results when a decrease in government spending or an increase in taxes causes the interest rate to increase.

19. Given a nominal interest rate of 20 percent, in which case would you earn the highest after-tax real interest rate?

- A. Inflation is 5 percent; the tax rate on interest income is 20 percent.
- B. Inflation is 4 percent; the tax rate on interest income is 30 percent.
- C. Inflation is 3 percent; the tax rate on interest income is 40 percent.
- D. The after-tax real interest rate is the same for all of the above.

20. If output is above its natural rate, then according to sticky-wage theory

A. workers and firms will strike bargains for higher wages. This increase in wages shifts the short-run aggregate supply curve right.

B. workers and firms will strike bargains for higher wages. This increase in wages shifts the short-run aggregate supply curve left.

C. workers and firms will strike bargains for lower wages. This decrease in wages shifts the short-run aggregate supply curve right.

D. workers and firms will strike bargains for lower wages. This decrease in wages shifts the short-run aggregate supply curve left.

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	經濟學	所別	商院共同科	考試時間	2 月 7 日 (六) 第 / 節
------	-----	----	-------	------	-------------------

Problems and Short-essay Questions

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

1. Assume that sugar production in the U.S.A. was 15.6 billion pounds, and sugar consumption in the U.S.A. was 21.1 billion pounds in 1995. In the same year, price of sugar in the U.S.A. was 21.9 cents per pound, while the world price was 11.1 cents per pound.

a. (5 points) With a -0.3 price elasticity of demand, derive the demand function of the sugar in the U.S.A. in 1995. (Assume that the demand function of sugar is linear.)

b. (5 points) With a 1.5 price elasticity of supply, derive the supply function of the sugar in the U.S.A. in 1995. (Assume that the supply function of sugar is linear.)

c. (5 points) Compute the loss of consumer's surplus caused by the higher sugar price in the U.S.A.

d. (5 points) Compute the changes in producer's surplus caused by the higher sugar price in the U.S.A.

2. The processing of payroll for the workers of a major corporation can be done to varying degrees by clerks and computers. Suppose that we can represent the trade-offs between labor and capital by the following production function $Q = K^{3/4}L^{1/4}$. Q is measured in thousands of payment processed, K is measured in hours of processing time and L is measured in man-hours.

a. (5 points) Does the production function exhibit constant, increasing, or decreasing returns to scale? Please show your result with a simple demonstration or proof.

For the remainder of the question you may assume that the wage rate is NT\$160 per man-hour and the rental rate of capital is NT\$30 per hour.

b. (5 points) Given the prices of the inputs and the production function, find the compensated factor demands for labor and capital.

c. (5 points) What is the variable cost curve of the firm? If fixed costs are 100, then what is the total cost curve of the firm.

d. (5 points) Without calculating the derivative, are marginal costs constant, upward sloping, or downward sloping? Briefly explain your answer.

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	經濟學	所別	商院共同科	考試時間	2 月 27 日 (六) 第 / 節
------	-----	----	-------	------	--------------------

3. Suppose in an economy, the autonomous consumption equals 100, the marginal propensity to consume equals 0.8, the net taxes are fixed at 100, the planned private-sector investment is fixed at 100, the government purchases are fixed at 100, and the net exports are fixed at 100. Answer the following questions.

- (10 points) What is the equilibrium output in this economy?
- (10 points) Suppose the government increases its expenditure to 200, which is financed by the fixed taxes. What is the equilibrium output in this economy?

4. In the summer of 1986 the *Economist* magazine conducted an extensive survey on the prices of Big Mac hamburgers at McDonald's restaurants throughout the world. Since then it has periodically updated its calculations. The following table reproduces the results of the *Economist's* January 2015 survey report with slight modification to make the calculation easier.

Country	Price of a Big Mac	Predicted Exchange Rate	Actual Exchange Rate
Taiwan	80 NTD	_____ NTD/USD	32 NTD/USD
Japan	360 JPY	_____ JPY/USD	120 JPY/USD
USA	4.8 USD	1 USD/USD	1 USD/USD

- (6 points) Suppose that purchasing power parity (PPP) holds. For Taiwan and Japan, compute the predicted exchange rate of local currency per U.S. dollar.
- (4 points) According to PPP, what is the predicted exchange rate between the Japanese Yen and the New Taiwan Dollar? What is the actual exchange rate?
- (4 points) Given the actual nominal exchange rate, what is the real exchange rate between Japan and Taiwan?
- (6 points) Suppose that the actual exchange rate between Japan and Taiwan will converge to the PPP predicted exchange rate over the next ten years. Which of these two countries will experience a higher rate of inflation over this period? Which country will likely have a higher nominal interest rate? Why?

備註	一、作答於試題上者，不予計分。 二、試題請隨卷繳交。
----	-------------------------------