

國立中山大學100學年度碩士班招生考試試題

科目：經濟學【財管系碩士班】

2011 財管碩經濟學，總體經濟部分，單選，第 1，2 題每題四分，其餘每題三分

1. 設美國降低利率，同時台灣央行干預匯市維持匯率不動，假定台灣資本移動自由，依 IS-LM-BP 模型分析對台灣的影響 A)貨幣供給下降 B)BP 線上移 C)利率上升 D)貿易餘額下降
2. 希臘屬歐元區，過去幾年希臘面臨嚴重經濟衰退及財政赤字，希臘政府如何處理？A)貶值 B)降低利率 C)尋求歐元區國家購買其公債 D)增加貨幣發行
3. 中國目前的經濟狀況 A)經濟持續擴張，進口增加導致貿易出現逆差 B)經濟衰退，出現通貨緊縮威脅 C)經濟衰退，貨幣政策趨於擴張 D)經濟持續擴張，通膨壓力浮現，貨幣政策趨於緊縮
4. 辛巴威 2008 年物價上漲率曾高達 5000 億%，2009 年物價上漲率大幅下跌，主因是 A)改用美元為該國官方貨幣 B)發行新辛巴威幣取代舊辛巴威幣 C)物價管制 D)取銷進口關稅
5. 設在年底時， $P=1$ ，貨幣供給量為 1000 億，央行宣佈次年貨幣供給量增加 100 億，以 IS-LM-AS-AD 架構分析，依新興古典學派理論，民間預期次年 A)LM 線以 100 億幅度向右平移 B)AD 線以 100 億幅度向右平移 C)AS 線以 100 億幅度向左平移 D)AS 以 0.1 幅度向上移
6. 依一般 IS-LM-BP 模型，假定資本移動自由，匯率浮動，設一國增稅與擴張貨幣併用，結果均衡所得不變，則新均衡與原均衡相較 A)民間消費減少 B)貿易餘額減少 C)投資支出減少 D)國際收支逆差
7. 下列古典學派模型，當貨幣供給增加後，何者會變動？A)實質貨幣供給 B)名目工資 C)就業 D)利率

$$Y = f(L, K), \partial Y / \partial L > 0, \partial^2 Y / \partial L^2 < 0$$

$$L^s = L(W/P), dL^s / d(W/P) > 0$$

$$L^d = L^d(W/P), dL^d / d(W/P) < 0$$

$$M = kPY$$

$$I(r) = S(r, Y), \partial I / \partial r < 0, \partial S / \partial r > 0,$$

8. 若央行將外匯存底均分給每位國民，下列何者錯誤？A)央行將沒有外匯存底孳息繳給國庫 B)當台灣人民欲將外匯換取台幣消費時，在外匯市場出售美元，使台幣有升值壓力 C)當台灣外匯市場出現異常台幣賣壓時，央行無法以干預維持匯率穩定 D)民間進口將無外匯可用
9. 一國 NNP 與人民可支配所得不同，下列何者不是其原因？A)政府移轉性支出 B)間接稅 C)直接稅 D)儲蓄 E)企業未分配盈餘
10. 總需求線是負斜率，下列何者不是其原因？A)較高物價水準使實質貨幣供給降低，利率上升，投資支出減少 B)較高物價水準導致實質餘額效果(Pigou effect)，使投資減少 C)較高物價水準使貿易餘額下降 D)較高物價水準使名目貨幣需求增加，使利率上升，投資支出減少
11. 若某國利率上升，實質所得下降，物價上漲率提高，則該國經濟最可能由下列何部門導致？A)總供給 B)總需求 C)貨幣市場 D)財政支出

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12. 若一美國公司在中國設有子公司生產電腦，去年出口零件至中國廠 20 億美元，成品回銷美國 30 億美元，去年中國子公司盈餘為 1 億美元，則該中國廠如何影響美國去年的國際收支平衡表 A) 貿易逆差 30 億 B) 貿易逆差 11 億 C) 經常帳逆差 9 億 D) 貿易逆差 10 億，金融帳順差 1 億 E) 貿易逆差 10 億，金融帳逆差 1 億
13. 何謂雙赤字？ A) 經常帳赤字與金融帳赤字 B) 貿易赤字與經常帳赤字 C) 貿易赤字與財政赤字 D) 國際收支赤字與財政赤字 E) 財政赤字與央行赤字
14. 一般 IS-LM 模型構成總需求線，  
 $Y = C + I + G$ ,  $C = C_0 + \beta Y$ ,  $I = I_0 - \rho r$ ,  $M/P = L_0 + \phi Y - \mu r$ ,  $\beta, \rho, \phi, \mu > 0$ ,  
在正斜率的總供給線之下，下列何者會提高政府支出對擴張所得的效果？ A)  $\rho$  較大 B)  $\beta$  較小 C)  $\phi$  較大 D)  $\mu$  較大
15. 在一般 AS-AD 模型中，假設工資僵固但物價可變動，勞動需求為  $P \cdot MPL$ ，AS 為正斜率，當石油價格上漲時，A) 物價上漲致總需求線左移 B) 物價上漲致總供給線右移 C) 工資上揚致勞動供給線右移 D) 勞動生產力降低與物價上漲的綜合作用使勞動需求線左移
16. 若某公司生產一產品，進口原料 500 萬，產值 1000 萬，製程中污染導致人民數人罹癌，醫療費用 200 萬，該人等控告該公司，雙方支出律師費用共 100 萬，法院判決公司應賠償醫療費用及精神損失共 800 萬，則該公司直接或間接對 GDP 的貢獻共為 A) 500 萬 B) 700 萬 C) 800 萬 D) 多於 800 萬

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第二部分—經濟學(個體經濟部分)，填空題共 10 小格，每一個空格 5 分，共 50 分。個體經濟均為填空題，空格答案必須全對才給分。只需填入最後的答案，要寫清楚題號，但“請勿”寫出計算過程。例如：第一個空格的答案若為“e+h”，請寫 (1) e+h。

填空題：

1. As the wage rate rises, the quantity of labor supply will reduce rather than increase. This phenomenon is resulted from the (1) \_\_\_\_\_ effect.
2. Assume that a consumer has an utility function of the form  $u(w) = -e^{-2w}$ , where  $w$  is the wealth. Please answer the following sub-questions:
  - i. Please find the Arrow-Pratt coefficient of absolute risk aversion  $R_a(w) =$  (2) \_\_\_\_\_ and the Arrow-Pratt coefficient of relative risk aversion  $R_r(w) =$  (3) \_\_\_\_\_.
  - ii. As his wealth increases, the  $R_a(w)$  will (4) \_\_\_\_\_. (increase, decrease or be unchanged)
3. Assume that there are two persons A and B in economy, and their utilities are  $U^A = X^{1/2}Y^{1/2}$  and  $U^B = X^{1/2}Y^{1/2}$ , respectively. In the beginning, A only has 10 units of X and B only has 20 units of Y. Please answer the following sub-questions:
  - i. Under the market equilibrium, the equilibrium relative price  $\left(\frac{P_X}{P_Y}\right)^* =$  (5) \_\_\_\_\_.
  - ii. If the endowment of A is changed into 20 units of X, then A will consumer (6) \_\_\_\_\_ units of Y in the equilibrium. And, B will consumer (7) \_\_\_\_\_ units of Y in the equilibrium. Then, please decide whether the welfares of both A and B will increase or not. (Yes or No) (8) \_\_\_\_\_.
4. Consider the following game:

		Player B	
		B1	B2
Player A	A1	A: 5, B: 10	A: 3, B: 5
	A2	A: 2, B: 5	A: 1, B: 2
	A3	A: 1, B: 8	A: 0, B: 6
	A4	A: 5, B: 9	A: 3, B: 8

Please find the dominant strategy equilibrium (9) \_\_\_\_\_ and Nash equilibrium (10) \_\_\_\_\_.

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Part One: (10 題單選題，每題 5 分，此部份共 50 分)

1. Which of the following investors would be happy to see the stock price to rise sharply ? (I) Investor who owns the stock and a put option (II) Investor who has sold a put option and bought a call option (III) Investor who owns the stock and has sold a call option (IV) Investor who has sold a call option . (1) I only (2) II only (3) III only (4) IV only (5) I and II only (6) III and IV only. (7) None of the above.

2. Which of the following are (is) inconsistent with the MMI theory or assumptions ? (I) If the operating cash flow does not change. (II) If the issue of debt increases the probability of bankruptcy. (III) If the firm issues debt for the first time. (IV) If the beta of equity is positive. (V) If an issue of new stock affects the market value of existing stock. (1) I only (2) II only (3) III only (4) IV only (5) V only (6) None of the above.

3. The following table gives the available projects for a firm.

A	B	C	D	E	F	G	
90	20	60	50	150	40	20	Initial investment
140	70	65	-10	30	32	10	NPV

If the firm has a limit of 210 million to invest, what is the maximum NPV the company can obtain? (1) 100~200 (2) 201~300 (3) 301~400 (4) None of the above.

4. Stock A: Expected return: 10%. Standard deviation: 20%. Stock B: Expected return: 15%. Standard deviation: 30%. Correlation between A and B: -1. Which of the following is (are) on the efficient frontier ? (1) A (2) B (3) If you are conservative, choose A. If you are aggressive, choose B. (4) None of the above.

5. Companies A and B are valued as follows:

	A	B
# of shares	2000	1000
Earnings per share	\$10	\$10
Share price	\$100	\$50

Company A now acquires B by offering one (new) share of A for every two shares of B (that is, after the merger, there are 2500 shares of A outstanding). If investors are aware that there are no economic gains from the merger, what is the price-earnings ratio of A's stock after the merger? (1) 5~7.00 (2) 7.01~8.00 (3) 8.01~9.00 (4) 9.01~10.00 (5) None of the above.

6. Company XY is financed entirely by common stock that is priced to offer a 20% expected rate of return. The stock price is \$60 and the earnings per share are \$12. The company wishes to repurchase 50% of the stock and substitutes an equal value of debt yielding 8%. Suppose that before refinancing, an investor owned 100 shares of XY common stock. What should he do if he wishes to ensure that risk and expected return on his investment are unaffected by

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- refinancing? (1) Sell 50 shares and purchase \$3,000 debt (bonds) (2) Continue to hold 100 shares (3) Borrow \$3,000 and buy 50 more shares (4) None of the above
7. The futures price is : (I) The price you pay (or receive) when you transact a futures. (II) The price at which the parties in a futures contract agree to transact in the future. (III) The value that ensures that no profit can be earned in the futures-versus-underlying-asset arbitrage trading in theory. (IV) The present value of the expected future payoff. (1)I (2)II (3)III (4)IV (5)I and II (6)III and IV (7)I and IV (8)II and III (9) None of the above.
8. Which of the following is (are) subject to pension fund crisis ? (1) Defined contribution plan (2) Defined benefit plan. (3) Both (1) and (2). (4) None of the above.
9. Which of the following describes the difference between the value of a US Treasury bond and a risky corporate bond: (1) The value of a call option on the firm's assets with an exercise price equal to the face value of the bonds. (2)The value of a put option on the firm's assets with an exercise price equal to the face value of the bonds. (3) The value of the firm's assets minus the value of a put option on the assets with an exercise price equal to the face value of the bonds. (4) The value of the firm's assets minus the value of a call option on the assets with an exercise price equal to the face value of the bonds. (5) None of the above.
10. If the momentum effect exists in the stock market, this is consistent with the view that: (1) The stock market is efficient in the weak form. (2) The stock market is efficient in the semi-strong form. (3) The stock market is efficient in the strong form. (4) None of the above.

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Part two: (10 single-answered questions, totally 50 points, 5 points for each question)

1. Which of the following statements correctly reflect the effects of granting credit to customers?

- I. Total revenues may increase if both the quantity sold and the price per unit increase when credit is granted.
  - II. A firm's cash cycle generally increases if credit is granted, all else equal.
  - III. Both the cost of default and the cost of discounts must be considered before granting credit.
  - IV. A firm may have to increase its borrowing if it decides to grant credit to its customers.
- A. I, II, and IV only    B. I, II, and III only    C. II, III, and IV only    D. I, III, and IV only    E. I, II, III, and IV

2. Which one of the following statements concerning dilution is correct?

- A. Market value dilution increases as the net present value of a project increases.
- B. An individual investor has less control over a firm if he or she experiences percentage ownership dilution.
- C. Investors are entitled to immediate tax refunds whenever they are injured by any type of dilution.
- D. Dilution of percentage ownership occurs whenever an investor participates in a rights offering.
- E. Book value dilution reduces the resale value of an investor's holdings.

3. Which of the following statements is correct?

- I. As the standard deviation of the returns on a stock increase, the value of a put option decreases.
  - II. The value of a call option decreases as the standard deviation of the returns on the underlying stock increase.
  - III. The sensitivity of an option's value to the volatility of the underlying asset is referred to as an option's vega.
  - IV. Increasing the standard deviation of the underlying asset has similar effects on the both the stock's call and put options.
- A. I and III only    B. III and IV only    C. II and IV only    D. I and II only    E. I, II, and III only

4. Which of the following statements concerning financial risk are correct?

- I. Financial risk is the risk associated with the use of debt financing.
  - II. As financial risk increases so too does the cost of equity.
  - III. Financial risk is wholly dependent upon the financial policy of a firm.
  - IV. Financial risk is the risk that is inherent in a firm's operations.
- A. I, II, and III only    B. II and III only    C. II and IV only    D. I and III only    E. I, II, III, and IV

5. Which of the following have been suggested as reasons why the stockholders in acquiring firms may not benefit to any significant degree from an acquisition?

- I. the price paid for the target firm might equal the target firm's total value
  - II. management may have priorities other than the interest of the stockholders
  - III. the takeover market may not be competitive
  - IV. anticipated merger gains may not be fully achieved
- A. I, III, and IV only    B. I, II, and IV only    C. II and IV only    D. I, II, III, and IV    E. I and III only

6. Which of the following account changes occur as a result of a large stock dividend?

- I. increase in common stock
  - II. decrease in cash
  - III. increase in capital in excess of par
  - IV. decrease in retained earnings
- A. II and III only    B. I and IV only    C. I, III, and IV only    D. II and IV only    E. I and III only

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7. Which of the following statements is correct concerning the BAT model?

- I. This model is used to determine the target cash balance for a firm.
  - II. One advantage of the BAT model is that it assumes a firm has a constant level of trading costs given any size of cash balance.
  - III. The BAT model is a complex model designed to estimate the cash flows of a firm.
  - IV. One disadvantage of the BAT model is the fact that it assumes all cash outflows are known with certainty.
- A. II and III only    B. I and IV only    C. III and IV only    D. I and III only    E. I and II only

8. Your boss would like you to evaluate a project which requires \$164,000 in external financing. The flotation cost of equity is 12 percent and the flotation cost of debt is 5 percent. You wish to maintain a debt-equity ratio of .55. What is the initial cost of the project including the flotation costs?

- A. \$181,248    B. \$180,337    C. \$179,606    D. \$178,552    E. \$177,226

9. Which of the following statements are correct?

- I. The usage of forward rates can help reduce the short-run exposure to exchange rate risk.
  - II. Accounting translation gains and losses are recorded in the equity section of the balance sheet.
  - III. The long-run exchange rate risk faced by an international firm can be reduced if a firm borrows money in the foreign country where the firm has operations.
  - IV. Unexpected changes in economic conditions are classified as short-run exposure to exchange rate risk.
- A. I, III, and IV only    B. I and III only    C. I, II, and III only    D. II and IV only    E. II, III, and IV only

10. You are considering a project which has been assigned a discount rate of 12 percent. If you start the project today, you will incur an initial cost of \$2,500 and will receive cash inflows of \$1,550 a year for two years. If you wait one year to start the project, the initial cost will rise to \$2,725 and the cash flows will increase to \$1,700 a year for two years. What is the value of the option to wait?

- A. \$28.51    B. \$12.64    C. \$30.49    D. \$19.46    E. \$34.68

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『統計學』注意事項：

※全部均為填充題，共 20 小格，每小格 5 分，共計 100 分。

1. 每一個空格 5 分，空格答案須全對才給分。
2. 只需填入最後的答案，要寫清楚題號，但”請勿”寫出計算過程。

例如：第一個空格的答案為“m+k”，請寫答案：(1) m+k。

3. 最後答案只需取到小數點後 3 位。

填充題：

1. 兩顆公正的骰子，令  $X$  為 2 出現的次數，而  $Y$  為 4 出現的次數。請計算條件機率  $f_{X|Y}(2|Y=2) = \underline{(1)}$ 、條件期望值  $E(Y|X=1) = \underline{(2)}$  與條件變異數  $Var(X|Y=0) = \underline{(3)}$ 。
2. 假設某大學的經濟系與財管系的學生身高服從常態分配，自經濟系抽取 25 位學生，其身高的標準差為 4，而自財管系抽取 20 位學生，其身高的標準差為 5，若信賴度為 90%，請問兩系身高的離散狀況是否相同？(填入：是或否) (4)。
3. 假設有 A、B 兩類因子，A 類因子有四種處方，而 B 類因子有五種處方。依據下表的資料，請回答以下的 2 個小題：

		A 因子			
		甲	乙	丙	丁
B 因子	I	1	3	2.5	1.5
	II	2.5	2	4	1
	III	1.5	3.5	2	3
	IV	3	4	2	1.5
	V	2	2.5	3	2

- i. 請計算 A 因子的 F 統計量  $\phi_A = \underline{(5)}$ 。
  - ii. 在 5% 的顯著水準之下，請問 B 類因子的處方是否有效？(填入：是或否) (6)
4. 某一學校的統計老師採用一個新的方套來教學，並宣稱在他的教學之下，學生的統計考試平均成績至少為 80 分以上，假設他有 25 位學生，而學生的統計成績的母體平均為 75 分，母體標準差為 2。請回答以下的 2 個小題：
    - i. 在這種情形下，型 I 誤差是什麼？ (7)
    - ii. 在 5% 顯著水準下，此套新的方法是否有效？(填入：是或否) (8)
  5. Consider the linear regression model:  $Y = \alpha + \beta X + \varepsilon$ , where  $\varepsilon$  is the error term. Furthermore, the data is showed as follows:

Y	2	4	6	3	5
X	-1	3	2	0	4

- i. If the Ordinary Least Squares (OLS) method is used, then the estimators  $\hat{\alpha}_n = \underline{(9)}$  and  $\hat{\beta}_n = \underline{(10)}$ .



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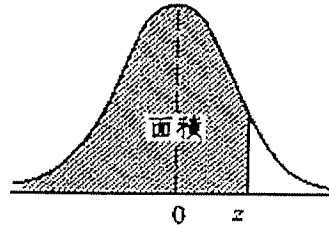
- ii. When  $X$  is equal to 6, then the predict  $\hat{Y} =$  (11) \_\_\_\_\_.
- iii. Please find the sample coefficient of correlation. (12) \_\_\_\_\_
- iv. Under a 5% significance level, please test whether the regression coefficient  $\beta$  is different from 0. ("Yes" or "No") (13) \_\_\_\_\_
6. Please answer "True" or "False" in the following questions:
- i. Assume that the estimated sample is constant. For the hypothesis tests, if the Type I error becomes larger, then the Type II error will be smaller. (14) \_\_\_\_\_
- ii. If the correlation coefficient of two variables is zero, then they must be independent. (15) \_\_\_\_\_
- iii. If  $\hat{\beta}_n$  is the unbiased estimator of  $\beta_0$ , then  $\hat{\beta}_n^3$  is also the unbiased estimator of  $\beta_0^3$ . (16) \_\_\_\_\_
- iv. In the analysis of regression, the coefficient of determination  $R^2$  means that how much of the variability of a dependent variable can be caused or explained by its relationship to an independent variable. (17) \_\_\_\_\_
7. The random variable  $Z$  follows a standard normal distribution. Please find the probability  $P(-2.98 < Z < -1.54)$ . (18) \_\_\_\_\_
8. Bank of America is curious about the grade level of people who use their ATM at the Student Union. Freshmen and sophomores are classified as type A, juniors and seniors as type B. Data are presented below for 48 people who used the ATM during one Friday afternoon.
- ABAAABBABBAABABAABBBBABB  
AAABABAABBABBAABBAABAAA
- Test this sequence for randomness at the 5% significance level. What is the statistic for this test? (19) \_\_\_\_\_ Please decides whether this sequence is random or not? (Yes or No) (20) \_\_\_\_\_

[後續有兩張可查詢的表格]

國立中山大學100學年度碩士班招生考試試題

科目：統計學【財管系碩士班】

常態曲線下之面積

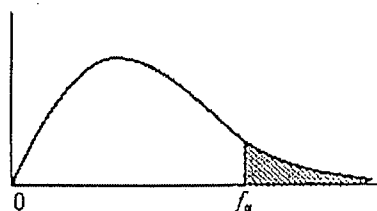


z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
-3.4	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0003	0.0002
-3.3	0.0005	0.0005	0.0005	0.0004	0.0004	0.0004	0.0004	0.0004	0.0004	0.0003
-3.2	0.0007	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0005	0.0005	0.0005
-3.1	0.0010	0.0009	0.0009	0.0009	0.0008	0.0008	0.0008	0.0008	0.0007	0.0007
-3.0	0.0013	0.0013	0.0013	0.0012	0.0012	0.0011	0.0011	0.0011	0.0010	0.0010
-2.9	0.0019	0.0018	0.0017	0.0017	0.0016	0.0016	0.0015	0.0015	0.0014	0.0014
-2.8	0.0026	0.0025	0.0024	0.0023	0.0023	0.0022	0.0021	0.0021	0.0020	0.0019
-2.7	0.0035	0.0034	0.0033	0.0032	0.0031	0.0030	0.0029	0.0028	0.0027	0.0026
-2.6	0.0047	0.0045	0.0044	0.0043	0.0041	0.0040	0.0039	0.0038	0.0037	0.0036
-2.5	0.0062	0.0060	0.0059	0.0057	0.0055	0.0054	0.0052	0.0051	0.0049	0.0048
-2.4	0.0082	0.0080	0.0078	0.0075	0.0073	0.0071	0.0069	0.0068	0.0066	0.0064
-2.3	0.0107	0.0104	0.0102	0.0099	0.0096	0.0094	0.0091	0.0089	0.0087	0.0084
-2.2	0.0139	0.0136	0.0132	0.0129	0.0125	0.0122	0.0119	0.0116	0.0113	0.0110
-2.1	0.0197	0.0174	0.0170	0.0166	0.0162	0.0158	0.0154	0.0150	0.0146	0.0143
-2.0	0.0228	0.0222	0.0217	0.0212	0.0207	0.0202	0.0197	0.0192	0.0188	0.0183
-1.9	0.0287	0.0281	0.0274	0.0268	0.0262	0.0256	0.0250	0.0244	0.0239	0.0233
-1.8	0.0359	0.0352	0.0344	0.0336	0.0329	0.0322	0.0314	0.0307	0.0301	0.0294
-1.7	0.0446	0.0436	0.0427	0.0418	0.0409	0.0401	0.0392	0.0384	0.0375	0.0367
-1.6	0.0548	0.0537	0.0526	0.0516	0.0505	0.0495	0.0485	0.0475	0.0465	0.0455
-1.5	0.0668	0.0655	0.0643	0.0630	0.0618	0.0606	0.0594	0.0582	0.0571	0.0559
-1.4	0.0808	0.0793	0.0778	0.0764	0.0749	0.0735	0.0722	0.0708	0.0694	0.0681
-1.3	0.0968	0.0951	0.0934	0.0918	0.0901	0.0885	0.0869	0.0853	0.0838	0.0823
-1.2	0.1151	0.1131	0.1112	0.1093	0.1075	0.1056	0.1038	0.1020	0.1003	0.0985
-1.1	0.1357	0.1335	0.1314	0.1292	0.1271	0.1251	0.1230	0.1210	0.1190	0.1170
-1.0	0.1587	0.1562	0.1539	0.1515	0.1492	0.1469	0.1446	0.1423	0.1401	0.1379
-0.9	0.1841	0.1814	0.1788	0.1762	0.1736	0.1711	0.1685	0.1660	0.1635	0.1611
-0.8	0.2119	0.2090	0.2061	0.2033	0.2005	0.1977	0.1949	0.1922	0.1894	0.1867
-0.7	0.2420	0.2389	0.2358	0.2327	0.2296	0.2266	0.2236	0.2206	0.2177	0.2148
-0.6	0.2743	0.2709	0.2676	0.2643	0.2611	0.2578	0.2546	0.2514	0.2483	0.2451
-0.5	0.3085	0.3050	0.3015	0.2981	0.2946	0.2912	0.2877	0.2843	0.2810	0.2776
-0.4	0.3446	0.3409	0.3372	0.3336	0.3300	0.3264	0.3228	0.3192	0.3156	0.3121
-0.3	0.3821	0.3783	0.3745	0.3717	0.3669	0.3632	0.3594	0.3557	0.3520	0.3483
-0.2	0.4207	0.4168	0.4129	0.4090	0.4052	0.4013	0.3974	0.3936	0.3897	0.3859
-0.1	0.4602	0.4562	0.4522	0.4483	0.4443	0.4404	0.4364	0.4325	0.4286	0.4247
-0.0	0.5000	0.4960	0.4920	0.4880	0.4840	0.4801	0.4761	0.4721	0.4681	0.4641

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F 分配之臨界值



$f_{0.05}(v_1, v_2)$

$v_2$	$v_1$								
	1	2	3	4	5	6	7	8	9
1	161.4	199.5	215.7	224.6	230.2	234.0	236.8	238.9	240.5
2	18.51	19.00	19.16	19.25	19.30	19.33	19.35	19.37	19.38
3	10.13	9.55	9.28	9.12	9.01	8.94	8.89	8.85	8.81
4	7.71	6.94	6.59	6.39	6.26	6.16	6.09	6.04	6.00
5	6.61	5.79	5.41	5.19	5.05	4.95	4.88	4.82	4.77
6	5.99	5.14	4.76	4.53	4.39	4.28	4.21	4.15	4.10
7	5.59	4.74	4.35	4.12	3.97	3.87	3.79	3.73	3.68
8	5.32	4.46	4.07	3.84	3.69	3.58	3.50	3.44	3.39
9	5.12	4.26	3.86	3.63	3.48	3.37	3.29	3.23	3.18
10	4.96	4.10	3.71	3.48	3.33	3.22	3.14	3.07	3.02
11	4.84	3.98	3.59	3.36	3.20	3.09	3.01	2.95	2.90
12	4.75	3.89	3.49	3.26	3.11	3.00	2.91	2.85	2.80
13	4.67	3.81	3.41	3.18	3.03	2.92	2.83	2.77	2.71
14	4.60	3.74	3.34	3.11	2.96	2.85	2.76	2.70	2.65
15	4.56	3.68	3.29	3.06	2.90	2.79	2.71	2.64	2.59
16	4.49	3.63	3.24	3.01	2.85	2.74	2.66	2.59	2.54
17	4.45	3.59	3.20	2.96	2.81	2.70	2.61	2.55	2.49
18	4.41	3.55	3.16	2.93	2.77	2.66	2.58	2.51	2.46
19	4.38	3.52	3.13	2.90	2.74	2.63	2.54	2.48	2.42
20	4.35	3.49	3.10	2.87	2.71	2.60	2.51	2.45	2.39
21	4.32	3.47	3.07	2.84	2.68	2.57	2.49	2.42	2.37
22	4.30	3.44	3.05	2.82	2.66	2.55	2.46	2.40	2.34
23	4.28	3.42	3.03	2.80	2.64	2.53	2.44	2.37	2.32
24	4.26	3.40	3.01	2.78	2.62	2.51	2.42	2.36	2.30
25	4.24	3.39	2.99	2.76	2.60	2.49	2.40	2.34	2.28
26	4.23	3.37	2.98	2.74	2.59	2.47	2.39	2.32	2.27
27	4.21	3.35	2.96	2.73	2.57	2.46	2.37	2.31	2.25
28	4.20	3.34	2.95	2.71	2.56	2.45	2.36	2.29	2.24
29	4.18	3.33	2.93	2.70	2.55	2.43	2.35	2.28	2.22
30	4.17	3.32	2.92	2.69	2.53	2.42	2.33	2.27	2.21
40	4.08	3.23	2.94	2.61	2.45	2.34	2.25	2.18	2.12
60	4.00	3.15	2.76	2.53	2.37	2.25	2.17	2.10	2.04
120	3.92	3.07	2.68	2.45	2.29	2.17	2.09	2.02	1.96
$\infty$	3.84	3.00	2.60	2.37	2.21	2.10	2.01	1.94	1.88