



(I) 金融市場 (50%)

一、選擇題(15%)

1. 某國內知名電子廠商欲前往歐洲籌資擴廠，請問您是該公司的財務經理，此時應注意華爾街日報的
(1)LIBOR(2)TIBOR(3)Fed. Fund(4)SIBOR
2. 台灣的資本市場有跛足之譏，以下何者較適合描述此一譏諷？(1)股市較吸引大眾(2)債券較發達(3)國庫券成交量高(4)商業本票發行金額大
3. 為了刺激景氣，我國中央銀行最常調整的利率是(1)存款準備率(2)基本放款利率(3)貼現率(4)銀行拆放款利率
4. 當您負責某上市公司的財務時，以下何種情況最適合發行ECB？(1)國內股價低迷(2)國內股價高檔(3)國內利率較低(4)國內利率較高
5. 台灣的共同基金主要分為股票與債券兩種，總市值將近新台幣一兆，請問其如何組成？(1)股票五成債券五成(2)股票兩成債券八成(3)股票八成債券兩成(4)股票四成債券六成

二、閱讀題(20%)

以下是一篇有關公債投標與殖利率走勢之圖形，請於詳閱後，回答以下諸問題。

6. 一般百姓係採取競標或非競標？在那登記？此例之非競標利率為何？
7. 解釋殖利率走勢之三種學說為何？
8. 依據此圖形，台灣有無發生通貨緊縮之可能？請解釋
9. 依據此圖形，台灣有無發生流動性陷阱之可能？請解釋

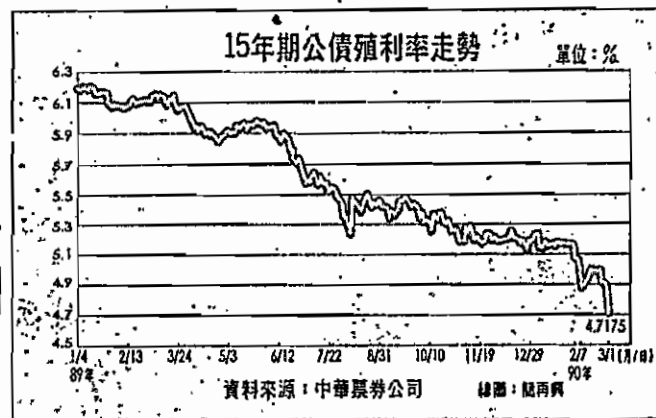


【記者傅沁怡、李淑慧／台北報導】中央銀行昨(1)日代財政部標售 15 年期公債 500 億元，得標加權平均利率 4.705%，創下央行標售公債以來最低利率水準，除行庫因資金過於寬鬆而低價搶標，也顯示市場預期長期利率走勢看跌。

此外，昨日債券次級市場 10 年券與 15 年券殖利率都創下歷史新低記錄。10 年期央債 90-1 期收盤時成交在 4.6925%，15 年期央債 90-3 期盤後交易收在 4.7175%。至於 20 年券則未打破 4.855% 的歷史低點，昨日收盤時成交在 4.873%。

央行昨天代財政部標售公債，除得標加權平均利率創下歷史新低，公債競標部分投標倍數 2.45，以及非競標部分

投標倍數 54.76，也均為歷來最高，顯示市場資金寬鬆，行庫欠缺適合的資金運用管道，因而採取買入公債、國庫券和央行存單等安全性較高的票、債券消化資金。



三、簡答題(15%)

本投顧一向以信譽著稱，成立十年來，顧客對本公司之投資績效讚不絕口。今為擴大營業規模，擬高薪禮聘一位金融投資高手。筆試題目為以新台幣五千萬，組成一個報酬與風險兼顧之投資組合。假如您前來應徵，請問該組合之內容？



(II) 金融機構之考題(共兩題，共 50%)

四、亞洲金融風暴開始發生於 1997 年 7 月，以下八個圖表(charts)顯示金融風暴發生前後年間，幾個主要受害國家其重要相關經濟指標之變化，試參考這些圖表，說明亞洲金融風暴發生之原因及過程。(25%)

Chart 1
Fixed Investment to GDP
(Percent)

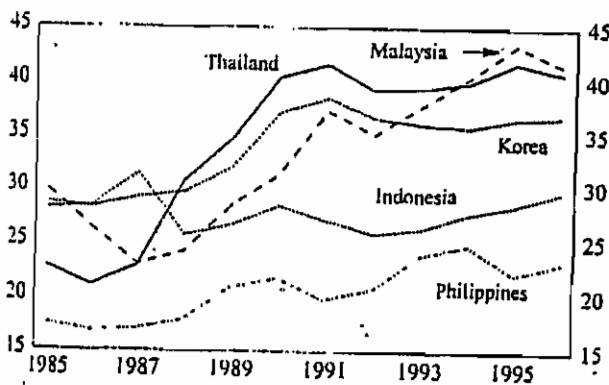


Chart 2
Bank Credit To The Private Sector to GDP Ratio
(Percent)

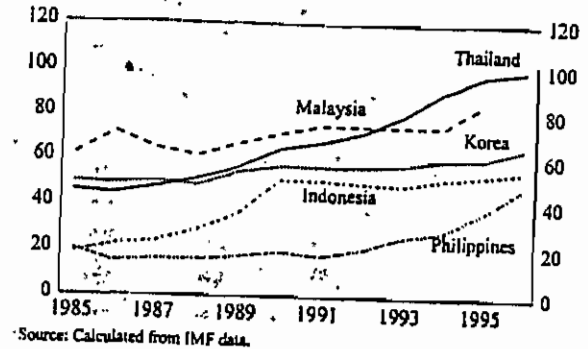
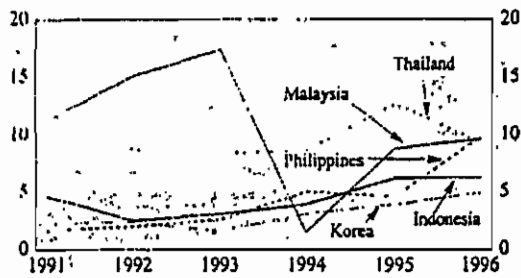
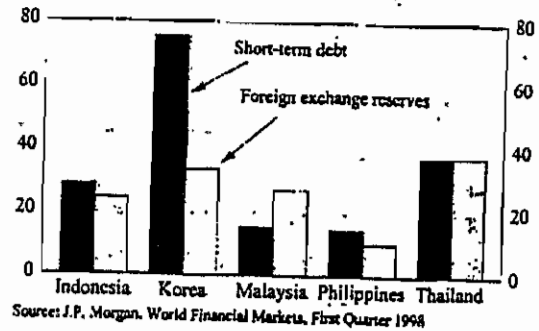


Chart 3
Net Private Capital Inflows
(As percent of GDP)



Note: Including direct, portfolio, short- and long-term investments.
Source: IMF, World Economic Outlook - Interim Assessment, December 1997.

Chart 4
Short-Term Debt & Foreign Exchange Reserves
(End of 1996; Billions of US\$)



Source: J.P. Morgan, World Financial Markets, First Quarter 1998

Chart 5

Stock Price Index

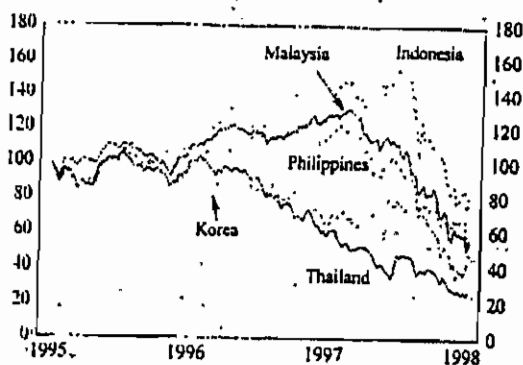


Chart 6

Merchandise Export Growth
(Percent change from year ago)

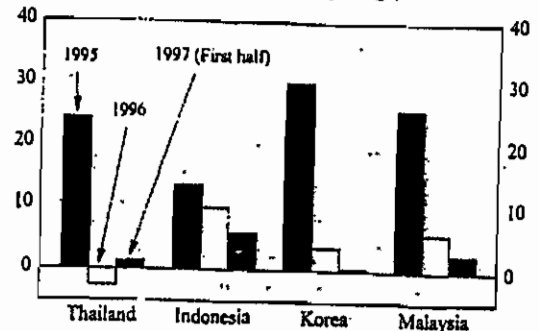




Chart 7

Current Account Balance to GDP in 1996
(Percent)

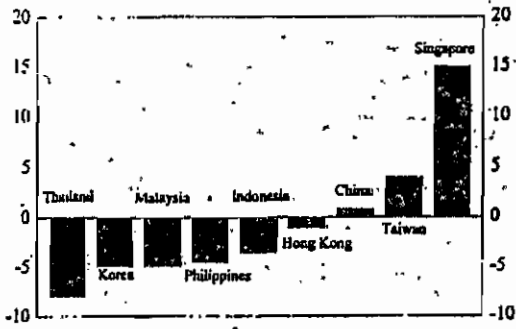
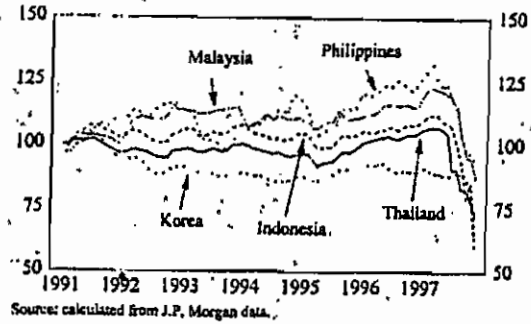


Chart 8

Real Trade-Weighted Exchange Rate
(Jan 1991=100)



五、因應近年臺灣金融環境之變遷，立法院最近立法通過以下三個有關金融機構之重大法案，試說明各法案立法之原因及其對未來金融機構之影響。(25%)

- (一) 成立資產管理公司(assets management company)
- (二) 允許金融機構合併(financial institutions consolidation)
- (三) 成立金融控股公司(financial holding company)



本試卷共有七大題，每一大題各有數小題填充題，每一小題為 5 至 7 分不等，總分 100 分，請依題序列出題號及答案，否則不予計分（計算過程可略）。

1. (A) (5%) Find the value of $\frac{1}{1 \times 2} + \frac{1}{3 \times 4} + \frac{1}{5 \times 6} + \dots$
- (B) (5%) If a is a constant, $\lim_{x \rightarrow \infty} (1 + ax)^{1/x} = ?$
2. (A) (5%) What is the average value of the function $f(x) = 4 \cos^3 \pi x$ on the interval $\left[0, \frac{1}{2}\right]$?
- (B) (5%) $\int \sqrt{\frac{1+x}{1-x}} dx = ?$
- (C) (5%) $\int \sin(7x) \cos(3x) dx = ?$
- (D) (5%) $\int \frac{x}{\sqrt{4-x^2}} dx = ?$
3. (A) (5%) Suppose the demand curve for orange is $Q(P) = \frac{100}{(\ln P + 2)^2}$, what is the elasticity of demand at price level $P = \$10$? (Hint: Elasticity of demand = relative change in $Q(P)$ / relative change in P .)
- (B) (5%) Suppose monthly costs of producing Q unit of ice-cream is $C(Q) = 2 + Q + e^{0.2Q}$. The selling price of the ice-cream is \$2 per unit. What is the producing level that maximizes profit?
4. (A) (7%) Find the area of region bounded by $f(x) = \frac{1}{9-x^2}$, $g(x) = \frac{1}{x^2-9}$, for $-1 < x < 1$.
- (B) (7%) Find the volume between $z = 4 - x^2 - y^2$ and $z = 4 - 2x$.
- (C) (6%) Find the area of the surface generated when the lemniscate $r^2 = 2a^2 \cos 2\theta$ is revolved about the x -axis.



5. (A) (6%) Approximate $\int_0^{0.5} \cos(\sqrt{x}) dx$ to four significant digits.
- (B) (7%) Find $u(W, t)$ and $v(W, t)$ such that $dW(t) = udt + v dX(t)$, where $W(t) = f(t)X(t)$.

(C) (7%) Find $\lim_{n \rightarrow \infty} e^{-n} \sum_{k=0}^n \frac{n^k}{k!} = ?$

6. (A) (5%) Suppose a and b are such that $\int_0^1 (ax+b-f(x))^2 dx$ reaches its minimum. Find the value of $a+2b$.

(B) (5%) Find the maximum of $\sum_{k=1}^{\infty} \left(\frac{1}{3}\right)^k x_k$ under the constraint

$$\sum_{k=1}^{\infty} x_k^2 = 1.$$

7. Suppose there are only two stocks, L and H , in John's portfolio. The portfolio weights(組合權重) that he will invest in L and H are x_L and x_H ,

respectively. Let $x = \begin{bmatrix} x_L \\ x_H \end{bmatrix}$, then it satisfies that $x_L + x_H = 1$. The expected

returns are μ_L and μ_H respectively, i.e., $\mu = \begin{bmatrix} \mu_L \\ \mu_H \end{bmatrix}$. The investor's objective

is to select x to maximize $x' \mu - \frac{1}{2} x' \Omega x$, where $\Omega = \begin{bmatrix} \sigma_L^2 & \sigma_{LH} \\ \sigma_{LH} & \sigma_H^2 \end{bmatrix}$. What is

the optimal portfolio weight (x_L, x_H) ?

(A) (5%) $x_L = ?$

(B) (5%) $x_H = ?$



Part I. Microeconomics(each question 2 points): choose the best answer. (答錯不例扣)

1. Suppose that two book stores are located at $a=1/4$ and $b=5/8$. What is the point of market segmentation according to Harold Hotelling's model?
 - (A) $1/3$.
 - (B) $7/16$.
 - (C) $1/2$.
 - (D) Cannot be determined with the information given.
2. Non-satiation implies that consumption bundles:
 - (A) Which contain fewer of all goods are preferred.
 - (B) Which contain more of one good and less of another are preferred.
 - (C) Which contain more of all goods are preferred.
 - (D) Which are nearer the origin are preferred.
3. Which of the following assumptions is not generally applied to an indifference curve?
 - (A) Convex.
 - (B) Diminishing MRS.
 - (C) Smooth.
 - (D) Transitive.
4. Beth consumes two goods, x_1 and x_2 , and her income is \$120. The price of x_1 is \$10, and the price of x_2 is \$5. If her utility function is $U(x_1, x_2) = x_1 + x_2$, her utility maximizing bundle is:
 - (A) (7, 10).
 - (B) (12, 0)
 - (C) (0, 24)
 - (D) (8, 8)
5. If two linear demand functions intersect the quantity axis at the same point, then:
 - (A) When quantities are equal, so are the price elasticities.
 - (B) When prices are equal, so are the elasticities.
 - (C) At the point of intersection the two elasticities are equal to one.
 - (D) None of the above.
6. Tom currently has 100 units of x_1 and 50 units of x_2 , and Jan has 50 units of x_1 and 100 units of x_2 . Tom's marginal rate of substitution is 10, and Jan's is 1.
 - (A) Pareto-improving trades involve Tom giving up x_1 for x_2 .
 - (B) Pareto-improving trades between Jan and Tom do not exist.
 - (C) Pareto-improving trades involve Jan giving up x_2 for x_1 .
 - (D) None of the above.



7. The Paasche and the Laspeyres indexes;
 - (A) Always agree with each other.
 - (B) Give the same numerical value
 - (C) Give the same qualitative values.
 - (D) May contradict each other.
8. If a good is neither normal nor inferior, then:
 - (A) The income effect is larger than the substitution effect.
 - (B) The income effect is smaller than the substitution effect.
 - (C) There are no income effects.
 - (D) There are no substitution effects.
9. According to the separation theorem, individuals choose consumption expenditures by choosing the one that maximizes utility while making the present value of income:
 - (A) Not smaller than the present value of consumption expenditures.
 - (B) Equal to the present value of consumption expenditures.
 - (C) Independent of the present value of consumption expenditures,
 - (D) Not larger than the present value of consumption expenditures.
10. The life cycle model hypothesizes that:
 - (A) Older people spend more than they earn.
 - (B) Younger people earn more than they spend.
 - (C) Younger people spend more than they earn.
 - (D) Older people are less risk averse.
11. Suppose that a firm uses a technology for which the MP of a variable factor is initially rising. Then:
 - (A) Total And AP are maximized when MP is zero.
 - (B) MP is maximized before AP.
 - (C) MP is maximized before AP is falling.
 - (D) The firm will never reach diminishing marginal productivity.
12. Variable cost may be defined as:
 - (A) The least expenditure on variable inputs to produce a level of output.
 - (B) The vertical distance between the APC and SRAC at level of output.
 - (C) The change in TC as more of the variable factor is employed.
 - (D) None of the above.
13. The demand for inputs is conditional on the :
 - (A) Supply of inputs.
 - (B) Marginal rate of technical substitution.
 - (C) Level of output.
 - (D) Consumer's choice problem.



14. A competitive firm's short run supply curve is its:
- (A) SAC curve to the right of its SMC curve.
 - (B) Owner's preference function.
 - (C) SMC curve above its SAVC curve.
 - (D) SMC curve above its SAC curve.
15. Import tariffs have the effect of:
- (A) Reducing producer surplus.
 - (B) Increasing consumer surplus.
 - (C) Increasing producer surplus.
 - (D) Lowering the market price in the domestic economy.
16. If everyone thought that the world will end tomorrow:
- (A) The interest rate would fall to zero.
 - (B) The interest rate would rise to infinity.
 - (C) No one would want to borrow anything.
 - (D) The effect would be the same as if only 10% of people thought the world will end tomorrow.
17. The profit-maximizing monopolist that faces a horizontal TC curve will:
- (A) Shut down and move to his best alternative employment.
 - (B) Charge a price equal to MC and satisfy total market demand.
 - (C) Produce that level of output at which MR is equal to zero.
 - (D) None of the above.
18. Donna's firm uses one input, z , and she sells her output at \$10 per unit. The marginal product of z is $10-z$ and the price of z is \$20 per unit. The profit maximizing quantity of z is:
- (A) 5
 - (B) 10
 - (C) 5.5
 - (D) 8
19. Which of the following assumptions does not apply to Edgeworth Box discussions of general equilibrium:
- (A) All Edgeworth Box allocations are Pareto optimal.
 - (B) Both goods are essential for all consumers.
 - (C) Economic well being is determined only by the quantities consumed.
 - (D) Indifference curves are smooth and convex to the appropriate origin.



20. A profit maximizing monopsonist chooses aggregate quantity of input so that:
- (A) Price equals marginal factor cost.
 - (B) Marginal revenue product equals aggregate marginal factor cost.
 - (C) Marginal factor cost equals aggregate input quantity.
 - (D) None of the above.
21. The level of output per firm under Nash and Cournot equilibriums are:
- (A) Always the same.
 - (B) Never the same.
 - (C) Often the same.
 - (D) Seldom the same.
22. The equilibrium price in the Chamberlin model of monopolistic competition is:
- (A) Both individually and collectively irrational.
 - (B) Collectively rational but individually irrational.
 - (C) Both collectively and individually rational.
 - (D) Individually rational but collectively irrational.
23. The expected utility hypothesis requires information about all of the following except:
- (A) Outcomes.
 - (B) Preferences.
 - (C) Probabilities.
 - (D) Prospects.
24. Transactions costs are costs that violate:
- (A) The rules of the game.
 - (B) The Coase theorem.
 - (C) The rules of market allocation.
 - (D) Economic property rights.
25. The term adverse selection refers to a situation where:
- (A) Most people are poor insurance risks.
 - (B) People who buy insurance need it.
 - (C) Most people don't need insurance.
 - (D) People are over-insured.



Part II. Macroeconomics (each question 2 points): choose the best answer. (答錯不倒拉)

1. The central macroeconomic concept that is most clearly related to changes in the well-being of the average member of the economy is the
 - A. Inflation rate.
 - B. Interest rate.
 - C. Foreign trade deficit.
 - D. Productivity growth rate.
2. A foreign trade deficit is financed by a combination of
 - A. Selling securities to foreigners and buying foreign assets.
 - B. Selling securities and assets to foreigners.
 - C. Buying foreign securities and selling assets to foreigners.
 - D. Buying foreign securities and assets.
3. In the simple circular flow model containing just households and business firms, all income is received by households in exchange for
 - A. Consumer expenditures.
 - B. Wages.
 - C. Labor services.
 - D. Product.
4. Which of the following is not a "flow" variable?
 - A. Government debt.
 - B. Consumption expenditure.
 - C. Labor services.
 - D. Income.
5. Which of the following is included in the GDP?
 - A. The current services flowing from the housing stock.
 - B. The estimated value of drugs sold illegally.
 - C. The estimated value of leisure time.
 - D. Transfer payments such as Social Security and veterans' benefits.
6. A change in real GDP sums up changes in
 - A. Prices alone.
 - B. Physical production alone.
 - C. Physical production minus changes in price.
 - D. Physical production and prices.
7. Fluctuations in total output are the reverse image of fluctuations in
 - A. The inflation rate.
 - B. The unemployment rate.
 - C. Gross domestic product.



- D. The GDP deflator.
8. Suppose that equilibrium income is 3200 and the multiplier is 2.38. Equilibrium income would rise to 3400 if planned investment
- A. Rises by 84.03.
 - B. Rise by 476.
 - C. Rises by 105.
 - D. Rises by 256.
9. At every point on the IS curve, the level of income on the horizontal axis equals
- A. Planned autonomous spending.
 - B. Planned autonomous spending times the multiplier.
 - C. Planned autonomous spending divided by the multiplies.
 - D. Planned expenditures times the multiplier.
10. In the IS-LM model, equilibrium income can be affected by
- A. Fiscal policy alone.
 - B. Monetary policy alone.
 - C. Both fiscal and monetary policy.
 - D. Neither monetary nor fiscal policy.
11. In deriving LM curves, holding the real money supply constant while raising real GDP cause us to
- A. Trace up along an LM curve.
 - B. Trace down along an LM curve.
 - C. Shift the LM curve to the right.
 - D. Shift the LM curve to the left.
12. A vertical IS curve comes from the assumption that changes in the interest rate do not affect
- A. The money demand.
 - B. The money supply.
 - C. Autonomous planned spending.
 - D. The LM curve.
13. In the IS-LM model, the fiscal multiplier effect can be increased by
- A. Larger increases in government expenditure.
 - B. Expansions of the money supply.
 - C. Contractions of the money supply.
 - D. Raising the income tax rate.
14. Suppose we have an economy for which $G = 300$, $T = 240$, $S = 80$, $I = 45$, and imports = 40. Exports must be
- A. 25.



- B. 40.
- C. 15.
- D. 65.
15. Actual output exceeds the natural output when
- The actual budget deficit is above the structural deficit.
 - The actual budget deficit is below the structural deficit.
 - The structural deficit is positive.
 - The structural deficit is negative.
16. The Bretton Woods system broke down due to
- The British devaluation of the pound in 1967.
 - Consistent U.S. trade surpluses draining dollar reserves from other nations.
 - Large U.S. trade deficits forcing foreign central banks to buy too many dollars.
 - Nations disallowing shipments of gold at the outbreak of World War II.
17. In moving from a small open to a large open economy model, one policy has its effectiveness in changing equilibrium income enhanced:
- Monetary policy under fixed exchange rates.
 - Fiscal policy under fixed exchange rates.
 - Monetary policy under flexible exchange rates.
 - Fiscal policy under flexible exchange rates.
18. A rise in the price level causes
- The LM curve to shift downward.
 - The LM curve to shift upward.
 - Movement up along an LM curve.
 - Movement down along an LM curve.
19. The "Pigou effect" is the stimulus to aggregate demand when a lower price level causes
- A lower interest rate to increase fixed investment.
 - A lower interest rate to increase inventory investment.
 - A lower interest rate to increase the demand for consumer durables.
 - Holdings of money to increase in purchasing power, thus raising consumption demand.
20. The "New Keynesian" macroeconomics is centered on
- The assumption of continuous market-clearing.
 - The importance of technological shocks.
 - The imperfectness of the information held by economic decision-makers.
 - The rational reasons for slow price and wage adjustment.



21. In the fooling model, real wages
 - A. Are countercyclical.
 - B. Are procyclical.
 - C. Are constant.
 - D. Show no clear cyclical pattern.
22. The New Classical assumption of how quickly markets clear is actually most appropriate in the analysis of
 - A. The labor market.
 - B. The aggregate good market.
 - C. Financial markets.
 - D. The market for consumer durables.
23. If nominal demand falls by 4 percent, real output remains unaffected
 - A. If every firm raises its price by 4 percent.
 - B. If every firm holds its price constant.
 - C. If every firm lowers its price by 4 percent.
 - D. Under no circumstances; it must fall.
24. When the expected inflation rate is 5 percent, we know to draw the short-run Phillips curve through the
 - A. Horizontal axis at $Y = 105$.
 - B. Horizontal axis at $P = 1.05$.
 - C. Long-run Phillips curve at $P = 1.05$.
 - D. Long-run Phillips curve at $P = 5$.
25. Over a year, the money supply in a nation grew by 6 percent, while velocity fell by 1 percent and real GDP rose by 2 percent. This results in an inflation over the year of
 - A. 9 percent.
 - B. 7 percent.
 - C. 5 percent.
 - D. 3 percent.



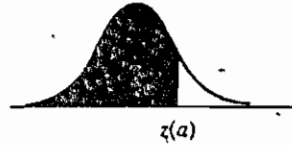
13. What is the probability-density function of $Y = Z^2$ where Z is a standard normal random variable?
14. Let X be a continuous random variable with probability density function $f(x)$. What is the probability density function of X^2 in terms of f ?
15. Suppose the closing price for JDSU stock is normally distributed. We have observed its closing prices for the past eight days:
 210, 242, 250, 220, 205, 200, 185, 190.
 What is the 95% confidence interval for the closing price of JDSU during the sampling period? (round to 2 digits after decimal if necessary).
16. Jack decides to equally split all his savings and invest in stock A and B. He has observed the annual return for each stock over the past five years. Suppose that his portfolio (投資組合) consists of stocks A and B only and he had equally invested in both stocks five years ago, what is his annual expected portfolio return?

期數(年)	A 股票報酬	B 股票報酬
1	0.10	-0.10
2	-0.05	0.05
3	0.15	0.00
4	0.05	-0.10
5	0.00	0.10

17. In problem 16 above, what is the variance (risk) of Jack's portfolio?
18. Let X and Y be independent uniform distribution on $[0,1]$. Find the probability $P(\min(X, Y) = X | Y > 0.5) = ?$
19. Suppose X is a binomial random variable with $n = 100$ and $p = 0.1$. Find the value of $\sum_{k=1}^n P(X \geq k)$.
20. From the sample X and Y , we obtain the following regression functions:
 $\hat{Y} = 30 + 1.2X$ and $\hat{X} = 10 + 0.6Y$
 Let $Z = Y - X$. Find the correlation coefficient between Z and Y . (round to 4 digits after decimal if necessary)



Cumulative probabilities and percentiles of the standard normal distribution



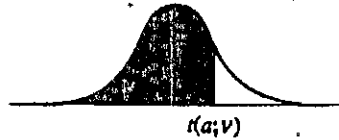
(a) Cumulative probabilities

Entry is area a under the standard normal curve, from $-\infty$ to $z(a)$.

z	0.00	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.0	0.5000	0.5040	0.5080	0.5120	0.5160	0.5199	0.5239	0.5279	0.5319	0.5359
0.1	0.5398	0.5438	0.5478	0.5517	0.5557	0.5596	0.5636	0.5675	0.5714	0.5753
0.2	0.5793	0.5832	0.5871	0.5910	0.5948	0.5987	0.6026	0.6064	0.6103	0.6141
0.3	0.6179	0.6217	0.6255	0.6293	0.6331	0.6368	0.6406	0.6443	0.6480	0.6517
0.4	0.6554	0.6591	0.6628	0.6664	0.6700	0.6736	0.6772	0.6808	0.6844	0.6879
0.5	0.6915	0.6950	0.6985	0.7019	0.7054	0.7088	0.7123	0.7157	0.7190	0.7224
0.6	0.7257	0.7291	0.7324	0.7357	0.7389	0.7422	0.7454	0.7486	0.7517	0.7549
0.7	0.7580	0.7611	0.7642	0.7673	0.7704	0.7734	0.7764	0.7794	0.7823	0.7852
0.8	0.7881	0.7910	0.7939	0.7967	0.7995	0.8023	0.8051	0.8078	0.8106	0.8133
0.9	0.8159	0.8186	0.8212	0.8238	0.8264	0.8289	0.8315	0.8340	0.8365	0.8389
1.0	0.8413	0.8438	0.8461	0.8485	0.8508	0.8531	0.8554	0.8577	0.8599	0.8621
1.1	0.8643	0.8665	0.8686	0.8708	0.8729	0.8749	0.8770	0.8790	0.8810	0.8830
1.2	0.8849	0.8869	0.8888	0.8907	0.8925	0.8944	0.8962	0.8980	0.8997	0.9015
1.3	0.9032	0.9049	0.9066	0.9082	0.9099	0.9115	0.9131	0.9147	0.9162	0.9177
1.4	0.9192	0.9207	0.9222	0.9236	0.9251	0.9265	0.9279	0.9292	0.9306	0.9319
1.5	0.9332	0.9345	0.9357	0.9370	0.9382	0.9394	0.9406	0.9418	0.9429	0.9441
1.6	0.9452	0.9463	0.9474	0.9484	0.9495	0.9505	0.9515	0.9525	0.9535	0.9545
1.7	0.9554	0.9564	0.9573	0.9582	0.9591	0.9599	0.9608	0.9616	0.9625	0.9633
1.8	0.9641	0.9649	0.9656	0.9664	0.9671	0.9678	0.9686	0.9693	0.9699	0.9706
1.9	0.9713	0.9719	0.9726	0.9732	0.9738	0.9744	0.9750	0.9756	0.9761	0.9767
2.0	0.9772	0.9778	0.9783	0.9788	0.9793	0.9798	0.9803	0.9808	0.9812	0.9817
2.1	0.9821	0.9826	0.9830	0.9834	0.9838	0.9842	0.9846	0.9850	0.9854	0.9857
2.2	0.9861	0.9864	0.9868	0.9871	0.9875	0.9878	0.9881	0.9884	0.9887	0.9890
2.3	0.9893	0.9896	0.9898	0.9901	0.9904	0.9906	0.9909	0.9911	0.9913	0.9916
2.4	0.9918	0.9920	0.9922	0.9925	0.9927	0.9929	0.9931	0.9932	0.9934	0.9936
2.5	0.9938	0.9940	0.9941	0.9943	0.9945	0.9946	0.9948	0.9949	0.9951	0.9952
2.6	0.9953	0.9955	0.9956	0.9957	0.9959	0.9960	0.9961	0.9962	0.9963	0.9964
2.7	0.9965	0.9966	0.9967	0.9968	0.9969	0.9970	0.9971	0.9972	0.9973	0.9974
2.8	0.9974	0.9975	0.9976	0.9977	0.9977	0.9978	0.9979	0.9979	0.9980	0.9981
2.9	0.9981	0.9982	0.9982	0.9983	0.9984	0.9984	0.9985	0.9985	0.9986	0.9986
3.0	0.99865	0.99869	0.99874	0.99878	0.99882	0.99886	0.99889	0.99893	0.99896	0.99900
3.1	0.99903	0.99906	0.99910	0.99913	0.99916	0.99918	0.99921	0.99924	0.99926	0.99929
3.2	0.99931	0.99934	0.99936	0.99938	0.99940	0.99942	0.99944	0.99946	0.99948	0.99950
3.3	0.99952	0.99953	0.99955	0.99957	0.99958	0.99960	0.99961	0.99962	0.99964	0.99965
3.4	0.99966	0.99968	0.99969	0.99970	0.99971	0.99972	0.99973	0.99974	0.99975	0.99976
3.5	0.99977	0.99978	0.99978	0.99979	0.99980	0.99981	0.99981	0.99982	0.99983	0.99983
3.6	0.99984	0.99985	0.99985	0.99986	0.99986	0.99987	0.99987	0.99988	0.99988	0.99989
3.7	0.99989	0.99990	0.99990	0.99990	0.99991	0.99991	0.99992	0.99992	0.99992	0.99992
3.8	0.99993	0.99993	0.99993	0.99994	0.99994	0.99994	0.99994	0.99995	0.99995	0.99995
3.9	0.99995	0.99995	0.99996	0.99996	0.99996	0.99996	0.99996	0.99996	0.99997	0.99997



Percentiles of the t distribution Entry is $t(a; \nu)$ where $P(t(\nu) \leq t(a; \nu)) = a$.



df ν	a						
	0.75	0.90	0.95	0.975	0.99	0.995	0.9995
1	1.000	3.078	6.314	12.706	31.821	63.657	636.619
2	0.816	1.886	2.920	4.303	6.965	9.925	31.599
3	0.765	1.638	2.353	3.182	4.541	5.841	12.924
4	0.741	1.533	2.132	2.776	3.747	4.604	8.610
5	0.727	1.476	2.015	2.571	3.365	4.032	6.869
6	0.718	1.440	1.943	2.447	3.143	3.707	5.959
7	0.711	1.415	1.895	2.365	2.998	3.499	5.408
8	0.706	1.397	1.860	2.306	2.896	3.355	5.041
9	0.703	1.383	1.833	2.262	2.821	3.250	4.781
10	0.700	1.372	1.812	2.228	2.764	3.169	4.587
11	0.697	1.363	1.796	2.201	2.718	3.106	4.437
12	0.695	1.356	1.782	2.179	2.681	3.055	4.318
13	0.694	1.350	1.771	2.160	2.650	3.012	4.221
14	0.692	1.345	1.761	2.145	2.624	2.977	4.140
15	0.691	1.341	1.753	2.131	2.602	2.947	4.073
16	0.690	1.337	1.746	2.120	2.583	2.921	4.015
17	0.689	1.333	1.740	2.110	2.567	2.898	3.965
18	0.688	1.330	1.734	2.101	2.552	2.878	3.922
19	0.688	1.328	1.729	2.093	2.539	2.861	3.883
20	0.687	1.325	1.725	2.086	2.528	2.845	3.850
21	0.686	1.323	1.721	2.080	2.518	2.831	3.819
22	0.686	1.321	1.717	2.074	2.508	2.819	3.792
23	0.685	1.319	1.714	2.069	2.500	2.807	3.768
24	0.685	1.318	1.711	2.064	2.492	2.797	3.745
25	0.684	1.316	1.708	2.060	2.485	2.787	3.725
26	0.684	1.315	1.706	2.056	2.479	2.779	3.707
27	0.684	1.314	1.703	2.052	2.473	2.771	3.690
28	0.683	1.313	1.701	2.048	2.467	2.763	3.674
29	0.683	1.311	1.699	2.045	2.462	2.756	3.659
30	0.683	1.310	1.697	2.042	2.457	2.750	3.646
40	0.681	1.303	1.684	2.021	2.423	2.704	3.551
60	0.679	1.296	1.671	2.000	2.390	2.660	3.460
120	0.677	1.289	1.658	1.980	2.358	2.617	3.373
∞	0.674	1.282	1.645	1.960	2.326	2.576	3.291

Example: $t(0.95; 10) = 1.812$ so $P(t(10) \leq 1.812) = 0.95$.

Text Reference: Use of this table is discussed on p. 913.