1. Suppose a person must accept one of three bets:
   Bet 1: Win $1,000 with probability 1/2; lose $100 with probability 1/2.
   Bet 2: Win $500 with probability 3/4; lose $300 with probability 1/4.
   Bet 3: Win $100 with probability 9/10; lose $900 with probability 1/10.
   a. Which of these are fair bets? (4 points)
   b. Assume the initial income is $1000, what is the utility of each bet? Please graph the utility of each bet on the utility of income diagram. (4 points)
   c. Explain carefully which bet will be preferred and why? (4 points)

2. What would happen if the labor market was dominated by a monopsonist and the government set a wage at the level of competitive wage? Please graph and explain it. (10 points)

3. In the short run the demand for cigarettes is perfectly inelastic. In the long run the demand for cigarettes is perfectly elastic. What are the impacts of a cigarette tax on the price that consumers pay in the short run and in the long run? Please graph and explain it. (10 points)

4. If Robinson's marginal rate of substitution between coconuts and fish is -2 and the marginal rate of transformation between the two goods is -1, what should he do if he wants to increase his utility? (8 points)

5. Suppose that a firm faces demand curve that has a constant elasticity of -2. This demand curve is given by

$$q = \frac{256}{p^2}$$

   Suppose also that the firm has a marginal cost curve of the form

$$MC = 0.001q$$

   a) Calculate the marginal revenue curve associated with the demand curve. Graph these demand, marginal revenue and marginal cost curve. (6 points)
   b) At what output level does marginal revenue equal marginal cost. (4 points)

見背面

(8 分) 6. 張三在過去三年消費行為所呈現的價格與數量的資料為

	P_x	P_y	X	Y
第一年	3	3	7	4
第二年	4	2	6	6
第三年	5	1	7	3

請問張三的行為有滿足強式的顯示性偏好（strong axiom of revealed preference）嗎？

(12 分)7. 如果阿妹對財貨 x 與 y 的效用函數為 $U(x,y)=x+y$，而他有所得 600 元，如果財貨 y 的價格 $p_y=1$，請求出當財貨 x 的價格 p_x 由 0.25 至 0.5、0.75、1、1.25、1.5、1.75 及 2 時的需求並畫出需求曲線圖。

(12 分)8. 如果一個市場上共有 n 個人，且每人對於財貨 Q 的需求函數為線型如下

$$Q_i = a_i + b_i P + c_i I + d_i P' \qquad i=1,2,\ldots\ldots,n$$

其中 a_i、b_i、c_i 及 d_i 為常數項、該財貨之價格、所得及其他財貨價格等變數之係數，由此可知，對於此一線上的任一點而言，該財貨的市場價格彈性與 P' 及所得分配無關？請解釋說明。
又如果需求函數變成自然對數型，形式如下：

$$\ln Q_i = a_i + b_i \ln P + c_i \ln I + d_i \ln P' \qquad i=1,2,\ldots\ldots,n$$

所有變數及係數的定義同上，請問此時對於此一線上的任一點而言，該財貨的市場價格彈性與 P' 及所得分配也是無關的？請解釋說明。

(10 分) 9. 假設網球鞋的供給曲線是水平的，而需求曲線是線型且斜率為負的曲線，原來政府對每賣出一雙網球鞋即課予 t 的稅，然沒有課其他財貨的稅。現在政府打算對每賣出一雙網球鞋要課加倍的稅，其他財貨同樣沒有課稅，則在政府對網球鞋加倍課稅的情況下，此時所造成的無謂損失（deadweight loss）正好是原來每雙只課 t 的稅所造成之無謂損失的兩倍。請說明對錯並解釋。

(8 分) 10. 阿干消費財貨 X 與 Y，而其效用函數為 $U(x,y)=\max\{x,y\}$，所得為 600 元，其中 x 與 y 分別為消費財貨 X 與 Y 的單位數，如果 Y 的價格為每單位 1 元，而 X 為每單位 1/2 元，現在假如 X 財貨每單位漲為 2 元，請問此一價格變化對阿干所造成的對等剩餘（equivalent variation）為多少？

試題隨卷繳回