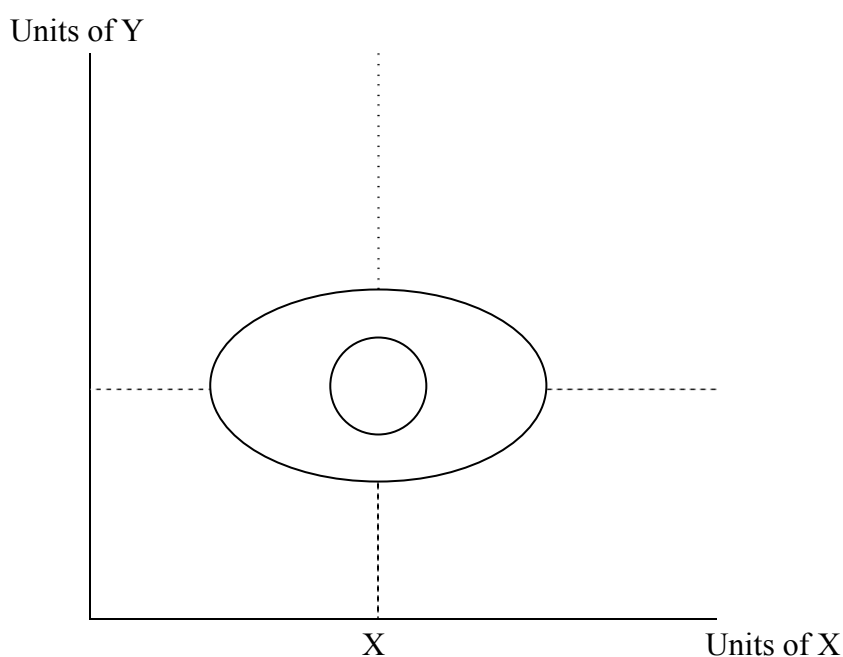


系所別	考試科目
經濟系	個體經濟學

※ 考生請於答案卷內作答

- (15%) The demand function for coffee is given by  $D_c = 100 - 2P_c + 0.5P_t$  and that for tea is given by  $D_t = 120 - P_t + 0.75P_c$ , where  $P_t$  is the price of tea and  $P_c$  is the price of coffee. The respective supply functions are  $S_c = 10 + P_c + 5W_c$  and  $S_t = 5 + 2P_t + 2W_t$ , where  $W_c$  and  $W_t$  are the indexed of weather conditions affecting production of coffee and tea respectively.
  - What are the equilibrium price and quantity of coffee and tea?
  - What is the cross demand elasticity of tea?
  - Give the comparative-statics effects on equilibrium of changes in weather conditions variable.
- (20%) Some indifference curves for a consumer whose preferences are complete and transitive are sketched in the following figure. The figure has been divided into quadrants labeled I-IV relative to the point  $(x_0, y_0)$ . The numbers to the right of each difference curve are the numbers assigned to all bundles on the curve by the consumer's utility function. Notice that the direction of increasing preference is always toward the point  $(x_0, y_0)$ . For each of the quadrants I-IV, answer each of the following questions:
  - Are  $MU_x$  and  $MU_y$  positive, negative, or zero?
  - Do the preferences satisfy the assumption of convexity in the quadrants?



3. (15%) Construct a firm's cost function  $c(y, w, r)$  if its production function is  $y = l^\alpha k^\beta$
4. 一完全競爭市場的需求函數是  $Q(P) = 1000 - 10P$ , 每一個廠商的長期成本函數都是  $TC(Q) = 100 + Q^2$
- (Q1) 此完全競爭市場長期的均衡價格為何? (5 分)
- (Q2) 長期均衡時, 此完全競爭市場有多少廠商? (5 分)

5. 某獨占廠商經市場調查, 發現有兩類型消費者,
- (1) 第一類型消費者共有 25 名, 每一個第一類型消費者的需求函數是:

$$\text{第一型: } Q_1(P) = 20 + 1/2P$$

- (2) 第二類型消費者共有 50 名, 每一個第二類型消費者的需求函數是

$$\text{第二型: } Q_2(P) = 40 - 2P$$

- (3) 此獨占廠商的總成本函數是  $TC(Q) = Q^2/200$ ,  $Q$  是總產量。

- (4) 假設消費量與價格可以是連續的。

(Q1) 如果此獨占廠商不論消費者類型為何都訂一樣的價格, 利潤最大的最適單一價格為何? (10 分)

(Q2) 如果此獨占廠商可以分辨與區隔此兩類型消費者, 請問對這兩類型消費者的最適三級差別定價為何? (10 分)

6. 考慮一同質產品雙占市場(DUOPOLY),

(1) 市場需求是  $Q(P) = 88 - P$

(2) 廠商 1 的總成本函數是  $TC_1(Q) = Q^2$

(3) 廠商 2 的總成本函數是  $TC_2(Q) = Q^2/2$

(Q1) 若兩家廠商進行「數量競爭」, Nash 均衡(Cournot 均衡)產量為何? (10 分)

(Q2) 若兩家廠商進行「價格競爭」(若兩家價格一樣則平分市場), 此兩家廠商 Nash 均衡(Bertrand 均衡)價格為何? (10 分)