

1. 設鄭老師的偏好可以以效用函數 $U=XY$ 表示，並設原先狀況下 $P_x=10$, $P_y=10$, $I=100$ 。現在 X 的價格由 $P_x=10$ 漲至 $P_x=20$ 。求(1)補償變量(C.V.) (2)X 財 Hicks 的受補償需求函數 (10 分)
2. 設陳老師的偏好可以以效用函數 $U=XY$ 表示， $P_y=5$ ， $I=100$ ，試求 $P_x=10$ 降為 $P_x=2$ 之替代效果和所得效果(請以 Slutsky 定義實質所得不變)。(16 分)
3. 楊老師的效用函數為 $U = M^{\frac{1}{2}}$ ，他可獲得的獎金取決於一對骰子所擲出點數的大小，如果他擲出的點數為 3、4、6 或 8 點，可得到獎金\$900；若擲出其他點數，則可得到獎金\$225，試問：
 - (1) 楊老師的期望報酬為何？(6 分)
 - (2) 楊老師的期望效用為何？(6 分)
 - (3) 如果楊老師可以選擇將擲骰子的權利換取一確定所得\$196，你認楊老師是否會放棄擲骰子的權利來換取確定所得？(6 分)
 - (4) 使楊老師放棄擲骰子權利的最低確定所得水準為何？(6 分)
4. (25 points) Assume that the grape industry in Taiwan is a perfectly competitive industry with typical market demand and supply curves. Assume a “closed grape country” meaning Taiwan does not import OR export grapes out of country. Consider Lee’s Kyoho Grapes of Taichung. Suppose Lee’s Kyoho Grapes has typical “text book curvy” short run cost curves and is currently maximizing short run profits by selling $a^* = 5,000$ bushels of grapes. The current market price for grapes is P^* . Suppose Lee’s Kyoho Grapes is experiencing positive economic profit at the current equilibrium.
 - (1) Using “THE GRAPH” illustrate the current situation for Lee’s Kyoho Grapes.
 Now suppose that Taiwan President Ma and the Legislative Yuan pass a bill requiring that each grape farm in Taiwan immediately pay \$500 for a license to sell grapes.
 - (2) Show, carefully, how the grape license law will impact the cost curves you just drew for Lee’s Kyoho Grapes.
 - (3) In the short run, do you predict any change in the equilibrium quantity and/or price of grapes in Taiwan? Why or why not?
 - (4) How would your answers above change, if, instead, the grape law was written to be a per bushel tax on grapes collected from grape farmers?
5. (25 points) Suppose you own a monopoly store for NCHU souvenirs and are faced by the demand curve $P_1=90-Q_1$ on campus (i.e., selling to NCHU students). The firm’s total cost is given by $TC(Q)=10Q$.
 - (1) Calculate the monopoly price and quantity.
 Suppose now the monopolist also sells off campus (i.e., selling to non-students). Demand off campus is given by $P_2=90-2Q_2$. Souvenirs for on and off campus are all produced at the same factory according to the cost function above. Suppose the markets are segmented, such that no one off campus can buy on campus and vice-versa.
 - (2) What are the optimal price-quantity pairs on and off campus?
 - (3) Does the firm price discriminate across these markets? Explain the intuition behind your answer in terms of demand elasticities.
 - (4) Comparing to part (1), how is the consumers’ surplus on-campus affected by the introduction of the off campus market?