

# 東吳大學 111 學年度暑假轉學生招生考試試題

第 1 頁，共 2 頁

學系	經濟學系 二年級	考試時間	100 分鐘
科目	經濟學	本科總分	100 分

※一律作答於答案卷上(題上作答不予計分)；並務必標明題號，依序作答。

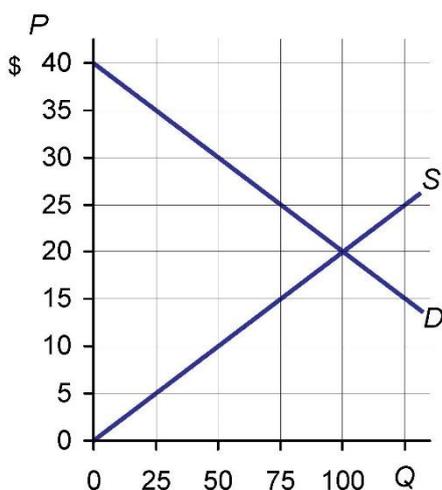
1. Greed Island produces two goods,  $X$  and  $Y$ , by using labor as input, and the production functions are given as follows:

$$X = 2\sqrt{L} ;$$

$$Y = 0.5L,$$

where  $L$  is the input of labor, and  $X$  and  $Y$  are the output of each good.

- (a) Given the total labor in the island is 100. Plot the production possibilities frontier (PPF). (5 points)
- (b) Find the function of the PPF. (10 points)
2. The following figure includes the demand and supply curves of pineapples. Please answer the following questions based on this figure.



- (a) Find the equilibrium price and quantity, and calculate the price elasticity of demand at the equilibrium. (5 points)
- (b) Calculate the consumer surplus (CS), producer surplus (PS), government surplus (GS), total surplus (TS), and deadweight loss (DWL) if the government set a price support at \$25. (10 points)
- (c) If the government wants an equilibrium price of \$25, what is the amount of subsidy per unit to consumers? (5 points)
- (d) Refer to (c). Calculate the consumer surplus (CS), producer surplus (PS), government surplus (GS), total surplus (TS), and deadweight loss (DWL) based on the subsidy. (10 points)

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第 2 頁，共 2 頁

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3. A duopoly faces a market demand function of  $Q = 140 - 2P$ . Each firm has a constant marginal cost of 10 and no fixed costs. Please answer the following questions.
- (a) Calculate the collusive market output, price, and the profits of each firm if they share the market equally. (5 points)
  - (b) Suppose that each firm can cheat on the collusion agreement and 65 quantities are planned to be sold. Derive the payoff matrix in this collusion/cheat game and find the pure Nash equilibrium. (10 points)
  - (c) Calculate the market output, price, and the profits of each firm under Cournot competition. (10 points)

4. The following table shows the price of Big Mac in each country measured by each local currency in January 2022. Please fill the number of (a) and (b) by purchasing power parity (PPP). (10 points)

Country	Price of Big Mac (Local Currency)	Exchange Rate by PPP (Per US Dollar)
United States	5.81	1
Taiwan	75	(a)
Japan	390	(b)

5. The following table pertains to Greed Island, an economy in which the typical consumer's basket consists of 15 bushels of apples and 8 bushels of almond.

Year	Price of Apples (Dollars per Bushel)	Price of Almond (Dollars per Bushel)
2020	12	5
2021	10	10

- (a) If 2020 is the base year, what was the CPI for 2021? (10 points)
- (b) Greed Island produced 20 bushels of apples and 10 bushels of almond in 2021, while only 15 bushels of apples and 8 bushels of almond in 2020. What was the GDP deflator for 2021? (10 points)