注意：請考生答題前，務必閱讀以下注意事項。

1. 請<u>不要</u>使用「**選擇題作答區**」作答。
2. 本試卷分為二部分(Part I and Part II)：請標示清楚，並將所有過程、步驟交代清楚。沒有說明過程者，不給分。每大題之下的小題分數，如括號內所示。
3. 如果沒有特別指示，請將答案約分至<u>**最簡分數**</u>表示。

Part I of Master Program Entrance Examination (50 points)

1. Suppose Mr. Wu receives utility from leisure consumed during a day, h, and from a daily consumption of his income, I, according to the preferences $U(h, I) = h^3 I$. Mr. Wu attempts to maximize his utility subject to constraints $\ell + h = 24$ and $I = w\ell + Y$, where ℓ is the number of hours worked during a day, w is the hourly wage and Y is income from non-labor sources.

(1) Set up the optimization problem and explain the meaning of the two constraints. (5 points)

(2) Solve the optimization problem to derive Mr. Wu's labor supply curve. (10 points)

(3) Is Mr. Wu's labor supply curve backward-bending? Explain. (5 points)

(4) If $Y = 0$ and $w = \$3$, how many hours a day will Mr. Wu work? (5 points)

（請翻次頁，繼續作答）

2. We observe the consumption behaviors of Mr. Oh, Mr. Pi, Ms. Qu and Ms. Ru in November and December. Suppose they only consume two goods, coffee and tea. Their tastes are unchanged in these two months. The prices of coffee and tea differ over time. The observed data are shown in the following table.

Month	Prices	Consumption quantities			
		Mr. Oh	Mr. Pi	Ms. Qu	Ms. Ru
November	(10, 4)	(2, 12)	(2, 12)	(2, 12)	(2, 12)
December	(12, 3)	(3, 8)	(3, 9)	(3, 10)	(3, 11)

Note: # of the first cell in the parentheses is for coffee and the second for tea.

(1) What is the definition of the Weak Axiom of Revealed Preference (WARP)? (5 points)

(2) Is Mr. Oh's behavior consistent with the WARP, why? (5 points)

(3) Is Mr. Pi's behavior consistent with the WARP, why? (5 points)

(4) Is Ms. Qu's behavior consistent with the WARP, why? (5 points)

(5) Is Ms. Ru's behavior consistent with the WARP, why? (5 points)

（請翻次頁，繼續作答）

Part II: account for 50 percent of the examination

1 Consider a local monopoly construction company AT, which produces houses. The potential clients of the company can be categorized as the rich (R) and the poor (P). R has small demand for housing because most of the group already have houses but they can afford very high prices. On the contrary, P has large demand for housing but can afford only low prices. Ironically, because R has strong bargaining power backed by their wealth and social status, AT is willing to gives them significantly discounted price while P has to pay a much higher price owing to lack of bargaining power.
(1) Draw the market demand curve facing AT from the respective demand curves of R and P as well the equilibrium of this local housing market. (10 points)
(2) Indicate in your diagram the respective consumer surpluses of R and P under AT's price discrimination against P. (10 points)

2 Suppose that the land in an economy is distributed equally between all its n citizen. Moreover, assume that a group of k people who pool their land together produce $(k/n)f(n)$ units of output. The benefit distribution actions among a k-member production coalition are the set of all allocations of the output$(k/n)f(n)$ among the members. Find the equilibrium allocation of any production coalition. (10 points)

3 Due to artificially imposed price ceiling and heavy government subsidy of tuition, our Education Ministry has created an enormous amount of college diploma whose social value are far below their corresponding social costs.
(1) Draw a supply-and-demand diagram to illustrate the deadweight loss caused by the tuition ceiling. (10 points)
(2) Similarly, use supply and demand curves to demonstrate the deadweight loss caused by government tuition subsidy for every and each student. (10 points)