电信管理所甲组

填充題（每格5分，共20格）

1.
Under current U.S. tax law some individuals can save up to $2,000 a year in an Individual Retirement Account (I.R.A.), a saving vehicle that has an especially favourable tax treatment. Consider an individual at a specific point of time who has income Y, which he or she wants to spend on consumption C, I.R.A. savings S_1, or ordinary savings S_2. Suppose that the utility function is taken to be:

$$U(C, S_1, S_2) = S_1^{\alpha} S_2^{\beta} C^{\gamma}.$$

The budget constraint of the consumer is given by:

$$C + S_1 + S_2 = Y$$

and the limit that he or she can contribute to the I.R.A. is denoted by L.

(a) Derive the demand functions for S_1 and S_2 for a consumer for whom the limit L is *not* binding $S_1=$_____, $S_2=$_____.

(b) Derive the demand functions for S_1 and S_2 for a consumer for whom the limit L is binding $S_1=$_____, $S_2=$_____. (i.e., His/Her saving in I.R.A is L).

2.
Suppose there are 100 identical firms in a perfectly competitive industry. Each firm has a short-run cost curve of the form

$$C = \frac{1}{300} q^3 + 0.2q^2 + 4q + 10.$$

(a) Calculate the firm's short-run supply curve with q as a function of market price P _____.

(b) On the assumption that there are no interaction effects among costs of the firms in the industry, calculate the short-run industry supply curve _____.

(c) (5%) Suppose market demand is given by $Q = -200P + 8,000$. What will be the short-run equilibrium price-quantity combination ($P=$_____, $Q=$_____)?

3.
A monopolist can produce at constant average and marginal costs of $AC = MC = 5$. The firm faces a market demand curve given by $Q = 53 - P$.

(背面仍有題目,請繼續作答)

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(a) (10%) Calculate the profit-maximizing price-quantity combination for the monopolist ($P^M =$ _____, $Q^M =$ _____). Also, calculate the monopolist's profit $\pi^M =$ _____.

(b) What output level would be produced by this industry under perfect competition $Q^C =$ _____? Calculate the consumer surplus obtained by the consumers $CS^C =$ _____.

(c) What is the value of the deadweight loss from monopolization $DWL^M =$ _____?

4.

Suppose firms A and B operate under conditions of constant average and marginal cost, but that $MC_A = 10$, $MC_B = 8$. The demand for the firms' output is given by

$$Q_D = 500 - 20P.$$

(a) If the firms practice Bertrand price competition, what will be the market price under a Nash equilibrium $P_A =$ _____, $P_B =$ _____?

(b) (5%) What will the profit for each firm ($\pi_A =$ _____, $\pi_B =$ _____)?

5.

Consider an increase in the real demand for money in country i.

(a) Under a fixed exchange rate, what happens to the country i's price level, P^i (rise, unaffected, fall), and the quantity of money, M^i (rise, unaffected, fall)? What happens to the country's quantity of international currency, H^i (rise, unaffected, fall) if the monetary authority does not increase its purchases of domestic interest-bearing assets?

(b) Under a flexible exchange rate — with a fixed quantity of domestic money, M^i — What happens to the country's price level, P^i (rise, unaffected, fall), and exchange rate, ϵ^i (appreciate, unaffected, depreciate)?