

考試科目	個體經濟學	系所別	經濟學系	考試時間	2 月 18 日(一) 第一節
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Please show all your work because (i) partial credit will sometimes be awarded and (ii) full credit may not be awarded for answers that appear without accompanying work.

1. (10 points each, Total 20 points) True or False. Please explain.
- (a) Since collusion yields higher profits for firms a one-time simultaneous quantity game, to collude and split the joint monopolist's payoff is the best strategy.
- (b) The compensated demand of a Giffen good is positively sloped.

2. (Total 30 points) Robin the Rueppell's fox (R) and Sarah the sand cat (S) live in an oasis in the Sahara Desert. Each is endowed with meat (x) and water (y). Robin has 5 kg of meat and 6 liters of water; Sarah has 3 kg of meat and 10 liters of water. Their preferences are

$$u_R(x_R, y_R) = x_R^{1/3} y_R^{2/3} \quad \text{and} \quad u_S(x_S, y_S) = \sqrt{x_S y_S}.$$

There is no other living creature in this oasis.

- (a) (2 points) What are their respective utilities of consuming their endowments?
- (b) (3 points) Can there be Pareto improvement? Why?
- (c) (15 points) If yes, how can they reach Pareto optimal through trade? [HINT: Let a liter of water be the numeraire and P be the price of meat per kg.]
- (d) (5 points) What is the equilibrium after the trade called? Who has the larger bargaining power?
- (e) (5 points) Draw an Edgeworth box to illustrate part (a) and part (b). Be sure to label everything clearly, including the origins, the endowment point, both Robin's and Sarah's indifference curves, etc..
3. (Total 30 points) The inverse demand for love potion is $P(Q) = \alpha - \beta Q$. Cupid is the monopolist of love potion and his cost function is $Q^2 + \gamma Q$. $\alpha > \gamma > 0$, and $\beta > 2$. Suppose he decides to use two-block pricing. Let Q_1 be the quantity sold in the first block and Q_2 be the total quantity sold.
- (a) (10 points) What are his optimal quantities sold in each block?
- (b) (15 points) Please draw a graph that depicts your answer in part (a) and the corresponding prices (P_1, P_2). Also include the optimal uniform pricing (P^*) and quantity Q^* on your graph as well. Your graph should include the demand, marginal revenue, cost, etc.. There is no need to calculate the uniform pricing, doing redundant calculation earn NO credit.
- (c) (5 points) From your graph, what is the relationship between (P_1, P_2) and P^* , and the relationship between (Q_1, Q_2) and Q^* ? What does this imply about the inefficiency of market power? [HINT: deadweight loss.]

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4. (Total 20 points) Barney has a continuous increasing and concave Bernoulli utility function $u(\bullet)$ and initial wealth, w . There is a money tree that will grow \$100 with probability π and grow \$20 with probability $1-\pi$.
- (a) (5 points) If Barney owns the money tree, what is the minimum price he would sell it for?
- (b) (5 points) If Barney does not own the money tree, what is the maximum price he would buy it for?
- (c) (10 points) Are buying and selling prices equal? Please use ONE graph with money on the x-axis and utility on the y-axis to explain your answer. Given an economic intuition for your answer. [HINT: Certainty equivalent and risk premium.]



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- 一、作答於試題上者，不予計分。
- 二、試題請隨卷繳交。