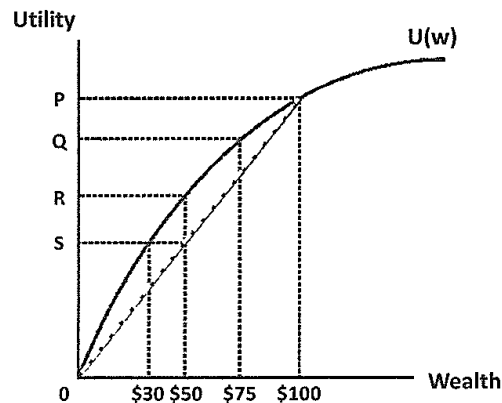


[題組一 25%] (第1題—第4題，每題 4 分；第5題—第7題，每題 3 分) ※ 本大題請用 2B 鉛筆作答於答案卡。

In economics, utility is a measure of pleasure or satisfaction that consumers receive from using, owning or doing something. It is what allows researchers to model how consumers choose between options. Following examples describe Alice's utility for owning some wealth and consuming some goods. Questions 1-7 are multiple-choice questions. Choose the best possible answer out of the choices from the list.

Questions 1-4 (16 %)

Alice's utility function of wealth is shown as follows:



Specifically, when Alice has \$100, her utility level is "P". Similarly, when Alice has \$75, \$50, and \$30, her utility levels are "Q", "R", and "S", respectively.

- Suppose Alice's utility function is $U = W^{0.5}$, where U is the utility level from owning wealth W . Alice decides to invest in a business which can yield \$6,400 with probability $1/5$, and \$3600 with probability $4/5$. What is Alice's expected utility of this investment?
 - 80
 - 76
 - 64
 - 60
 - None of the above.
- Alice currently has \$50 and is considering investing all of it in an investment that has a 50% chance of being worth \$100 and a 50% chance of being worth \$0. Alice will?
 - definitely make the investment because the expected utility of the investment exceeds the utility of her \$50.
 - definitely not make the investment because the expected utility of the investment is less than the utility of her \$50.
 - definitely make the investment because she is indifferent between having \$50 and having an investment with an expected value of \$50.
 - definitely not make the investment because she is indifferent between having \$50 and having an investment with an expected value of \$50.
 - None of the above.

見背面

3. Alice currently has \$100 of wealth, but there is a 50% chance that it could all be stolen. In this situation, Alice's expected utility of receiving \$0 50% of the time and receiving \$100 50% of the time is _____.
- A) P
 B) Q
 C) R
 D) S
 E) None of the above.
4. Alice currently has \$100 of wealth, but there is a 50% chance that it could all be stolen. An insurance company offers to reimburse Alice for all of her loss if the money is stolen. What is the most that Alice would pay for such a policy?
- A) \$30
 B) \$50
 C) \$70
 D) \$75
 E) None of the above.

Questions 5-7 (9 %)

Alice's utility from consuming Soda and Chocolate is shown as follows:

Quantity of Soda	Utility
1	60
2	102
3	132
4	144
5	144
6	138
7	128

Quantity of Chocolate	Utility
1	40
2	70
3	91
4	106
5	112
6	115
7	115

For example, when Alice consumes 2 units of Soda, she receives 102 units of utility. Similarly, when Alice consumes 5 units of Chocolate, she receives 112 units of utility.

5. If Alice can drink all the soda she wants for free, how many units will she consume?
- A) She would consume an infinite amount of soda if it is free.
 B) 3 units
 C) 5 units
 D) 7 units
 E) None of the above.
6. Suppose the price of Soda is \$6 per unit and the price of Chocolate is \$3 per unit, and Alice has \$30 to spend on these two goods. If Alice maximizes her utility, she should buy X units of Soda and Y units of Chocolate. X equals?
- A) 2
 B) 3
 C) 4
 D) 5
 E) None of the above.

7. Suppose the price of Soda is \$6 per unit and the price of Chocolate is \$3 per unit, and Alice has \$30 to spend on these two goods. If Alice maximizes her utility, she should buy X units of Soda and Y units of Chocolate. Y equals?
- A) 3
B) 4
C) 5
D) 6
E) None of the above.

[題組二 25%] ※ 本大題請於試卷內之「非選擇題作答區」標明題號依序作答。

Each vendor in a city has a marginal cost of \$1.5 per burger sold and bears a fixed cost at \$50. Suppose the maximum number of burgers any one vendor can produce in a day is 100.

1. Suppose that the demand is $Q=4500-600P$ and the food industry is a perfectly competitive one, what will the price be in equilibrium? How many vendors will stay in this market?
2. If the price of a burger is set at \$3.0 by law, how many burgers does each of the existing vendors from the above question choose to sell? How many burgers can each vendor sell out of symmetry solution? Will there be a pressure for new entry? Can you explain this lobbying phenomenon?
3. Suppose the city government decides to regulate vendors by issuing permits. If the city issues only 30 permits under a bidding process, how much will a permit cost to a vendor? How will a burger be priced accordingly?

[題組三 25%] (每題 5 分) ※ 本大題請於試卷內之「非選擇題作答區」標明題號依序作答。

A rare earth metals drilling company in North America must decide whether or not to engage in a new drilling activity before regulators pass a law that bans drilling at that site. The cost of drilling is \$1,000,000. After drilling is completed and the drilling costs are incurred, the company will learn whether or not there are rare earth metals. If there are rare earth metals, operating profits generated are estimated at \$4,000,000. If there are no rare earth metals, there will be no future profits.

1. Using p to denote the likelihood that drilling results in rare earth metals, draw the decision tree of this problem.
2. The company estimates that $p = 0.6$. What is the expected value of drilling? Should the company go ahead and drill?
3. To be on the safe side, the company hires a specialist to come up with a more accurate estimate of p . What is the minimum value of p for which it would be the company's best response to go ahead and drill?

A new supermarket moves to a community. Other supermarkets don't know if this supermarket is tough or weak. The leading supermarket likes to beat up weak supermarkets, but doesn't like to fight tough supermarkets. The leading supermarket gets to see how the new supermarket decorates its store. The new supermarket can choose either high-class decoration or mediocre decoration. Tough supermarkets get utility of 1 from high-class decoration and 0 from mediocre decoration. Weak supermarkets get utility of 1 from mediocre decoration and 0 from high-class decoration. The leading supermarket gets payoff of 1 from fighting a weak supermarket, -1 from fighting a tough supermarket, and 0 from not fighting. The new supermarket's total utility is its utility from decoration minus w if the leading supermarket fights it and it is weak, and utility from decoration plus s if it is strong and the leading supermarket fights it.

4. What are possible strategies are for the leading supermarket? What are possible strategies for the new supermarket?
5. Suppose $w < 1$ and $s < 1$, what is the Nash equilibrium?

見背面

[題組四 25%] ※ 本大題請於試卷內之「非選擇題作答區」標明題號依序作答。

Fill out the blank fields and provide your explanations on the answer book

Sir Pelleas, the prime minister of Neverland, states that Neverland saw exactly the same number of births and deaths in the past five years and will log zero population growth rate over ten consecutive years.

Sir Ector said that the central bank target the interest rate of Neverland based on $i = \pi$ (inflation rate) + 2% + 0.5 ($\pi - 2$) - 0.5 (percentage gap between actual & full-employment *GDP*).

Sir Lucan states that Neverland's consumption function is C (consumption) = 0.1 + 0.6 x *GDP*

Sir Dagonet says that the country's production factor of labor is 100 total work hours.

Sir Gawain reports that the country's production factor of capital is 400 total capital hours and that about 10% of *GDP* is used to replace depreciating capital.

Duke Rez said that the country of Neverland has been a closed economy since the Medieval Period and its production function $Y = 0.24 L^{0.5} K^{0.5}$.

Sir Dinadan teaches the cabinet members that the marginal product of capital (*MPK*) is the incremental increase in total production that results from one unit increase in capital while keeping all other inputs constant. When an economy has constant returns to scale, any increase in capital while keeping labor constant results in diminishing marginal product of capital

Sir Lamorak teaches the cabinet members that Tobin's Q equals the market value of a company divided by its assets' replacement cost. Thus, equilibrium is when market value equals replacement cost. At its most basic level, the Q Ratio expresses the relationship between stock market value of the economy's capital and the actual cost to replace capital that were purchased when the stock was issued.

Based on the above information,

1. Neverland's total *GDP* = _____. Show your calculation. (2.5%)
2. Neverland's total consumption C = _____. Show your calculation. (2.5%)
3. Neverland's output per labor hour = _____. Show your calculation. (2.5%)
4. Neverland's marginal product of capital = _____. Show your calculation. (2.5%)
5. The capital income share, or the portion of output distributed to capital = _____. Show your calculation. (2.5%)
6. Neverland's total capital stock = $z Y$. $z =$ _____. Marquis Bors de Ganis states that the capital stock is about 6.33 times of this year's *GDP*. Marquis de Sade states that the capital stock is about 8.33 times of this year's *GDP*.

One of the only two Marquises in Neverland, Marquis de Sade and Marquis Bors de Ganis, is a true expert in economics. Which one of these two Marquises is the true expert in economics? Show your work. (2.5%)

接次頁

題號： 374

國立臺灣大學 110 學年度碩士班招生考試試題

科目： 經濟學(F)

題號： 374

節次： 6

共 5 頁之第 5 頁

7. The rate of capital depreciation $\delta =$ ____%. Show your calculation. (2.5%)
8. If the real *GDP* average annual increase is 3.5%. Should Sir Pelleas encourage or discourage the Neverland households to increase their savings? Explain. (2.5%)
9. The relative price of capital = 1. the real interest rate $r = 1\%$. The real total cost of capital = ____%. Show your calculation. (2.5%)
10. Would Neverland 's Tobin's Q be greater than or less than one? _____ (Fill in greater or less.) Explain. (2.5%)

試題隨卷繳回