**Business Economics I (Managerial Economics)**

**Spring 2021**

**Report**

**2021/06/09**

**Attention:**

1. Please read carefully again the instruction about the report in the syllabus circulated on Week 1(pp. 7).
2. Submission deadline is strict: **Through Keio.jp, by 18:00, Thursday 8 July**
3. Please write down your answers on this Word file (hand writing is not allowed).
4. You are required to show your solution process in details, including mathematical calculation and logical explanation.
5. I will not answer any questions about the content of the report.

**ID:**

**Name:**

Currently , where MPs and MPa are the marginal products of steel and aluminum for a company whose production function is

Q = s0.5 a0.5. s: units of steel, a: units of aluminum, Ps = Pa = $1, are the prices of steel and aluminum, and the company has a total budget of $4 to spend on these inputs, and if the market price of the output is $3 per unit. (1)How many units of s and a should the firm hire? (2)What will be its output, revenues, costs and profits? (3) What will be its marginal cost?

**Solution process:**

**Answer:**

1. **s= unit(s), a= unit(s)**
2. **Output= , Total Revenue=$ , Total Costs= $ , Profits=$**
3. **Marginal Costs=$**

The short-run marginal cost of the Ohio Bag Company is 5Q. Price is $100. The company operates in a competitive industry. Currently, the company is producing 30 units per period. (1)What is the optimal short-run output? (2)Calculate the profits that Ohio Bag is **“losing”** through suboptimal output.

**Solution process:**

**Answer:**

1. **Q\*=**
2. **Profits that Ohio Bag is losing through suboptimal output= $**

3.

The Perch is a pub that has two types of potential customers: legal and underage drinkers. It is illegal to allow entry to underage drinkers, but there is no way to perfectly identify underage drinkers (fake IDs, etc.). Assume that Perch ’s marginal cost is $2.00 per drink. The drink demand for a representative customer in each of the two groups is given by:

PL= 6- QL (legal drinkers)

PU= 4 -QU (underage drinkers)

1. If the price per drink is $2, how many drinks does each type of drinkers have?
2. What is a pricing policy that will extract all of the profit from the legal drinkers?
3. How many drinks do legal drinkers have under this pricing policy?
4. Do underage drinkers have incentives to go to the bar under this pricing policy? Why?

**Solution process:**

**Answer:**

**(1) Legal drinkers: drinks, Underage drinkers: drinks**

**(2)**

**(3) drinks**

**(4) Yes/No, Reason:**

4.

You are a pricing manager for a cell phone company. You have two types of customers with different demand curves for your service. The demand curves for an individual customer from each group for hours of talk time per month are:

Type A customer: P =20－2Q

Type B customer: P =20－Q

Your marginal cost for providing hours of phone service is zero (all your costs are fixed). There are 1,000 customers of each type. You know the demand curves for the two types of customers. However, it is impossible for you to identify when a person purchases a plan whether the customer is from one group or the other.

1. If you use the simple pricing policy of charging a single price for each hour of talk time for both type of customers, what are the optimal price, the total number of hours of talk of all customers and the total profits?
2. Design a menu plan that extracts all of the consumer surplus from the Type A customers (Plan 1) and one (=Plan2) as much as possible from the Type B customers given that they have the option to purchase Plan 1.Each of the plans on the menu must offer a maximum number of hours of talk time per month for a fixed monthly fee. Please show the combination of a fixed number of hours and a fixed monthly fees for each plan. What are the total profits from offering the two plans?

**Solution process:**

**Answer:**

**(1) Optimal price: $ , total number of hours of tall of all customers: hours, total profits:$**

**(2)**

**Plan 1: a fixed number of hours: , a fixed monthly fees: $**

**Plan 2: a fixed number of hours: , a fixed monthly fees: $**

**The total profits of the two plans (Plan 1 and Plan 2): $**

5.

In order to spur consumer spending in 2022 (this is a fiction!), after the covid-19 shock, the Japanese government considers ￥10 trillion voucher system whereby every Japanese consumer would receive a shopping voucher that could be used to purchase Japanese products. For simplicity, assume the following: each consumer has wealth of 1 million yen, consumers must allocate this wealth between consumption now (c1), and consumption later (c2), the interest rate is zero, the voucher is worth 100,000 yen, and it can be spent only in the current period. If it is not spent, it is lost. Plot a budget line for a representative consumer both before and after the voucher program (c1: horizontal axis (million yen) and c2: vertical axis (million yen)).

Solution process:

Answer:

C1 (million)

C2 (million)

6.　Answer the following questions **based on the content of the textbook that we have covered.**

(1) Explain, by focusing the case of common stocks (=publicly traded equities), why it is not always easy to estimate demand curve.

Answer:

(2) Explain, by using a concrete example, why the marginal product of an input can be negative.

Answer:

7. Answer the following questions **based on the content of the textbook that we have covered.**

(1) Explain why globalization can be likely to reduce entry barrier.

Answer:

(2) Explain why the long-run industry supply curves of fast-food restaurants can be likely to be flat.

Answer: