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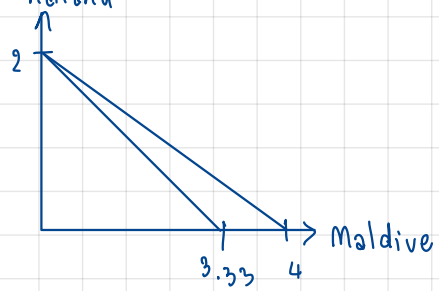
1. Neo loves traveling. Supposed he has two choices of destination, Thailand and Maldives which costs him 3,000 baht and 5,000 baht respectively. His utility received from traveling to Maldives is twice compared to traveling to Thailand. Answer the following questions.

a) If Neo has 10,000 baht of budget, how many times of each destination he will choose to travel and why? Draw his indifferent curve and budget line to analyze his decision and indicate details on the graph.

b) If his budget increases to 20,000 baht, draw his income-consumption curve. Also plot his income demand of traveling in Thailand, find its slope and explain.

a.) Thailand



$$\frac{MU_y}{P_y} = \frac{MU_x}{P_x}$$

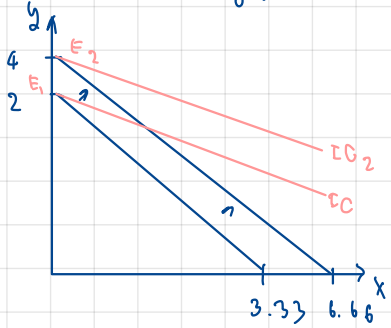
$$\frac{MU_{TH}}{P_{TH}} < \frac{MU_{mal}}{P_{mal}}$$

$$\frac{1}{3,000} < \frac{2}{5,000}$$

$$0.0003 < 0.0004$$

Maldives gain more utility than Thailand. Spending all 10,000 bath to go to maldives give his most utility

b.)



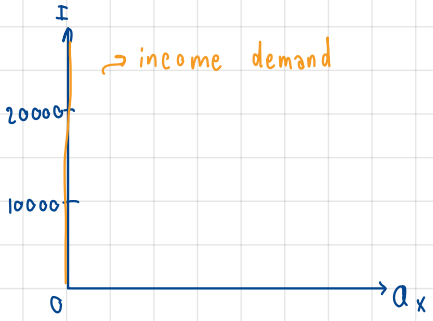
$$20000 = 3000X + 5000Y$$

intercept y: $X = 0$

$$20000 = 5000Y$$
$$4 = Y$$

intercept x: $y = 0$

$$20000 = 3000X$$
$$6.66 = X$$



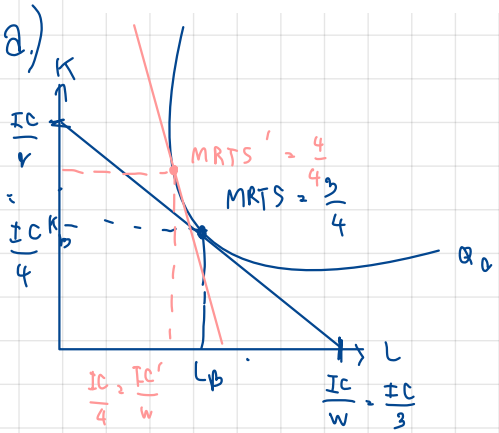
Income increase. He consume all of his budget with maldives. The demand for Thailand equal to 0 when budget is at 10,000 and 20,000

2. Consider a long-run production in which there are only two inputs labor and capital, and the input prices for labor and capital are wage (w) and interest rate (r), respectively. Suppose that at the equilibrium levels of labor and capital (L*, K*), the marginal product of labor (MP_L) and marginal product of capital (MP_K) are 6 and 8, respectively.

a) (5 points) Calculate the marginal rate of technical substitution (MRTS) and state the cost-minimization conditions of this firm, given that the required output is fixed at Q_0. If the market wage rate (w) is \$3, what is the interest rate at the equilibrium?

b) (5 points) Suppose now that the wage rate (w) increases to \$4, ceteris paribus. Draw a diagram to illustrate the changes in the cost-minimizing combination of inputs.

a.)



Isocost $IC = wL + rK$

$w = 3$ find r

$IC = 3L + rK$

K intercept: $L = 0$

$IC = rK$

$\frac{IC}{4} = \frac{IC}{r} = K$

L intercept: $K = 0$

$IC = 3L$

$\frac{IC}{3} = L$

Slope of Isocost

$= \frac{\Delta K}{\Delta L}$

$= \frac{IC}{r} \div \frac{IC}{w}$

$\frac{IC}{r} \times \frac{w}{IC}$

equilibrium level

isoquant = isocost

$\frac{MP_L}{MP_K} = \frac{w}{r}$

$\frac{6}{8} = \frac{3}{r}$

$6r = 24$

$r = 4$ ∴ interest rate at equilibrium equal to 4

∴ $MRTS = \frac{\Delta K}{\Delta L} = \frac{3}{4}$. In minimizing cost, capital is 3 and labor is 4

b.) $W = 4$

Intercept of Isocost

$TC = wL + rK$

intercept K: $L = 0$

$TC = rK$

$\frac{TC}{4} = K$

intercept L: $K = 0$

$TC = wL$

$\frac{TC}{4} = L$

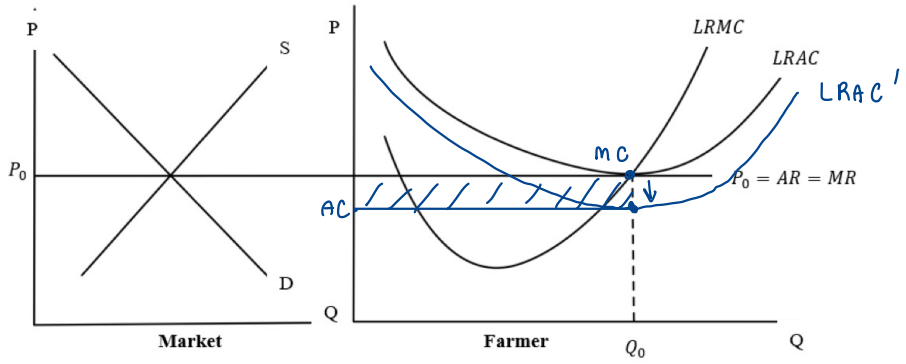
$MRTS = \frac{\Delta K}{\Delta L}$

$= \frac{TC}{4} \div \frac{TC}{4}$

$= \frac{TC}{4} \times \frac{4}{TC}$

$= \frac{4}{4}$

3. A Thai rice farmer is in a long run equilibrium in a perfect competition and produces at the quantity Q_0 as shown in the graph below.



a) The government grants a lump sum subsidy to every farmer. How will this change the LRAC? Explain why LRMC does not change.

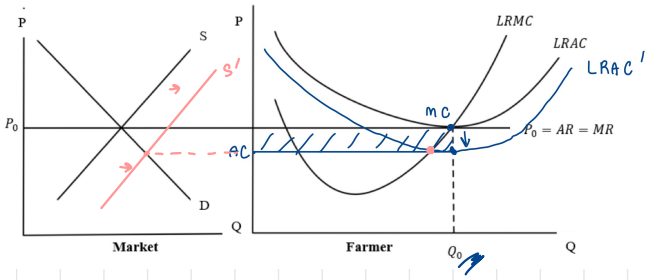
b) Will the lump sum subsidy change the quantity the farmer wants to produce to maximize his profit? Show in the graph that the farmer now earns an Excess Profit. Explain.

c) Demonstrate how this Excess Profit will affect the market price in the Long Run that allows new entry to the market.

a) LRAC
LRMC doesn't change because government give lump sum subsidy that doesn't related to producing process

LRAC shift downward due to producer pay less total cost.

b) Price that this farmer can gain are higher than Long run average cost
So, the highlighted area is the excess profit



c.) New entry enter the market to gain excess profit. So, the supply shift to the right hand side. The price decreass and reach to average cost. Firms only gain normal profit

4. An inverse demand function in a monopoly market is given by

$$P = 100 - 5Q$$

Supposed that the monopolist is very efficient, which gives a constant marginal cost of $20, answer the following questions.

a) How many units of this product will be produced that maximizes monopolist's profit in the short-run? Also, how much does this product cost? Show your argument clearly.

b) How much is the total variable cost when the monopolist's profit is maximized?

c) If this monopolist has a fixed cost of $160, how much is the monopolist's profit?

a.) $MC = 20\$$

Maximize profit

$MR = MC < P$

$TR = P \cdot Q = (100 - 5Q)Q$

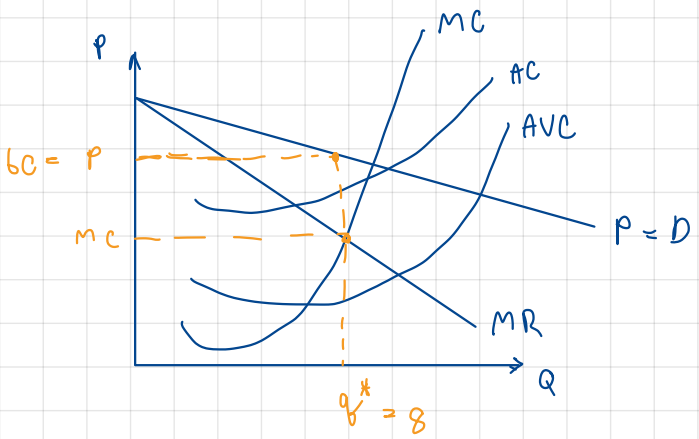
$= 100Q - 5Q^2$

$MR = \frac{dTR}{dQ} = 100 - 10Q$

$100 - 10Q = 20\$$

$-10Q = -80$

$Q = 8$



Put Q into the equation (product price)

$P = 100 - 5(8)$

$= 100 - 40$

$= 60$

8 units of product is maximize monopolist's profit in short run. This product cost 60 $

b.) $MC = \frac{\Delta TVC}{\Delta Q}$

$20 = \frac{\Delta TVC}{8}$

$160 = TVC$

c.) $Profit = TR - TC$

$= (P \cdot Q) - (TFC + TVC)$

$480 - (160 + 160)$

$= 480 - 320$

$= 160$

5. Assumed both a product market and a labor market are perfectly competitive, a table of marginal product is given below.

Unit of labor	Marginal product of labor (MP)
2	12
3	8
4	6
5	4
6	2

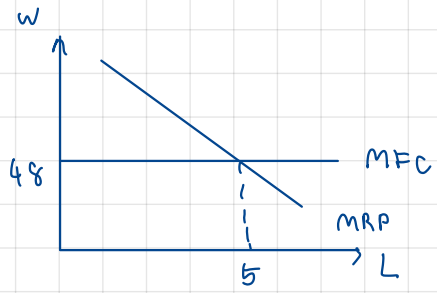
This product can be sold in the market for $12 each while labor wage is $48, answer the following questions clearly.

a) Figure out how many units of labor this firm will choose as input for its production to maximize profit. Illustrate a graph to support your answer and explain.

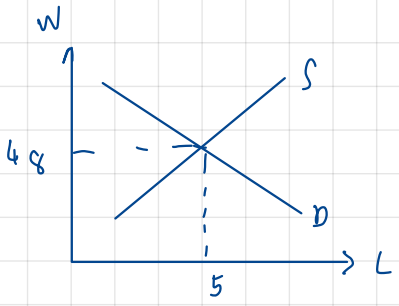
b) Supposed that there is a sudden economic recession driving consumers' purchasing power downward, what would happen to the units of labor hired by this firm? Support your answer with illustrations that also show a connection between product market and labor market.

MFC	MRP (MR × MP)
48	144
48	96
48	72
48	48
48	24

a.)



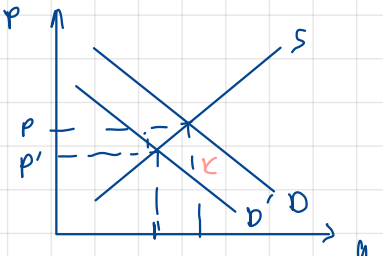
firm



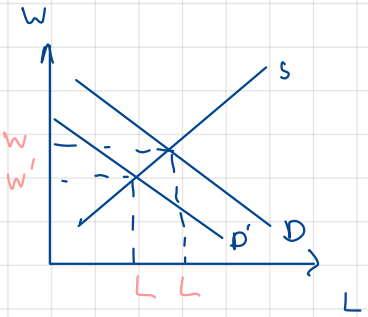
labor Market

5 unit of labor is maximize profit. Maximize profit MRP equal to MFC

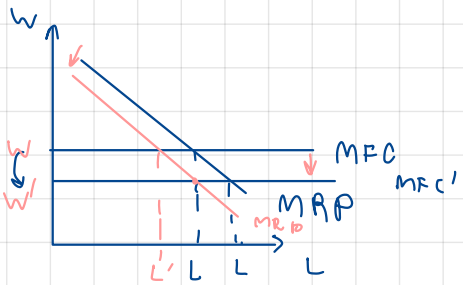
b.)



good market



labor market



firm market

Purchasing power of consumer is decrease . The demand in product market is decrease to q' . Due to lower demand in purchasing product, the demand in labor also decrease. when price drop, MRP shift to the left and the wage is decrease MFC is decrease after that.

In conclusion, recessing wage increase than marginal revenue product decrease. Price and labor are decrease

6. Consider these statements and indicate which one of the choices fits with each statement and roughly explain why.

Choices:

1. Not a market failure
2. Market power
3. Externalities
4. Public goods
5. Moral hazard
6. Adverse selection

a) People feel that price level is hiking.

b) Morpheus always hears a loud fight coming from a room next to his.

c) Trinity does not receive her full-benefit until her first 3-month of her work position.

d) In Chiang Mai, there is no earthquake alarming system.

e) Starbucks coffee is more expensive than Amazon coffee.

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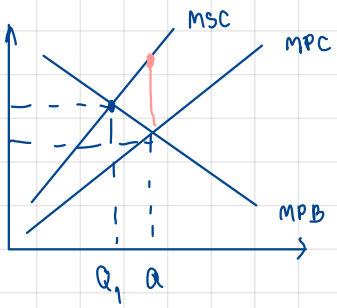
A. not a market failure

B. Next room doesn't care about other it produce MPC equal to MPB which is at Q is overproduction

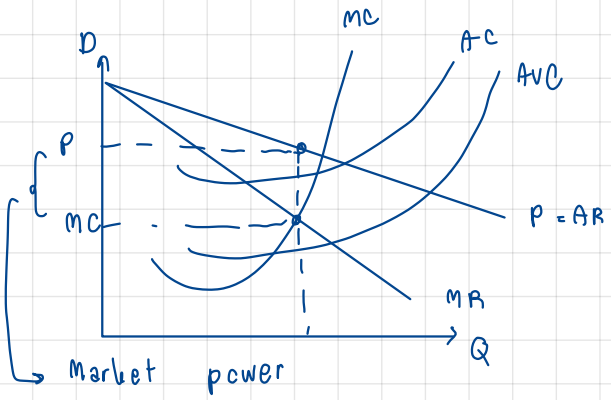


but if he think about external MSC equal to MPC + MEC ,and reduce production which it located at Q_1. However if He still produce at Q, it will has DWL

C Is a moral hazard bc it related to contract. And after signed the behavior had change

D. earthquake alarming system is belong to public goods. because it is non excludable and non rivalrous. People can use it freely even they not paid it is call free rider. and the alarming system isn't lower in quantity.

C → is market power



Starbuck can set a hisher price bc it has more market power to set the price. The price of product is higher than the cost of product.