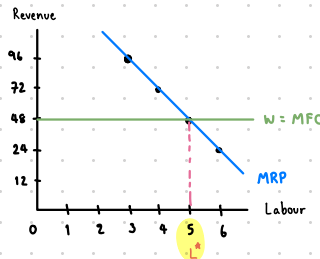


1. Assumed both a product market and a labor market are perfectly competitive, a table of marginal product is given below.

Unit of labor	Marginal product of labor
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.

1.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.



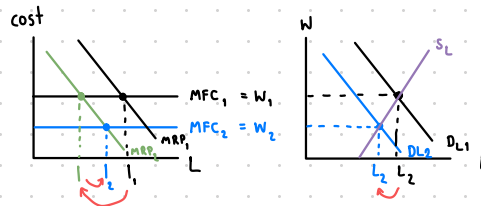
Product Market :  $P = MR$   
 $MRP = MP \times MR = MP \times P$

Ans: Optimal units labour to maximise profit is when  $MRP = MFC \rightarrow L^* = 5$

1.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.

Consumer's purchasing power downward  $\rightarrow$  MRP  $\downarrow$ . (D & P  $\downarrow$ ) at product mkt.

Labour demand  $\downarrow \rightarrow D_L$  shifts left and  $w \downarrow$



The firm hired less.  
 $L_1 \rightarrow L_2$

2. In a telecommunication sector where there are 3 companies namely A, D and T, at first, these companies can capture 50%, 20% and 30% of market share respectively. All of them share the same marginal cost of \$0.2 on average for a unit of service per minute. Answer the following questions

2.a) If company A can charge users for \$1 on average for a unit of service, figure out the Lerner's index for company A.

$$L_A = \frac{P - MC}{P} = \frac{1 - 0.2}{1} = 0.8 \quad \text{Ans :}$$

2.b) Figure out the HHI index for this industry at the current state.

$$H = \sum_{i=1}^3 S_i^2 = 0.5^2 + 0.2^2 + 0.3^2 = 0.38 \quad \text{Ans :}$$

2.c) If D and T decide to merge their companies, figure out the new HHI index.

$$H = 0.5^2 + 0.5^2 = 0.5 \quad \text{Ans :}$$

3. 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

3.a) People feel that price level is hiking.

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

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

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

3.e) Starbucks coffee is more expensive than Amazon coffee.

- ③
- a) Market failure : The price increasing may contribute increase in external cost.
  - b) Not a market failure : Not related to the lesson.
  - c) Moral Hazard : Before they signed a contract, they should have agreement that should follow.
  - d) Public goods : It's a thing that the government should provide to their citizens because it's a non-excludable and non-rivalrous.
  - e) Market power : Starbucks have a luxury brand image and large international market than Amazon.