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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 · 12 144
3	8 · 12 96
4	6 · 12 72
5	4 · 12 48
6	2 · 12 24

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.

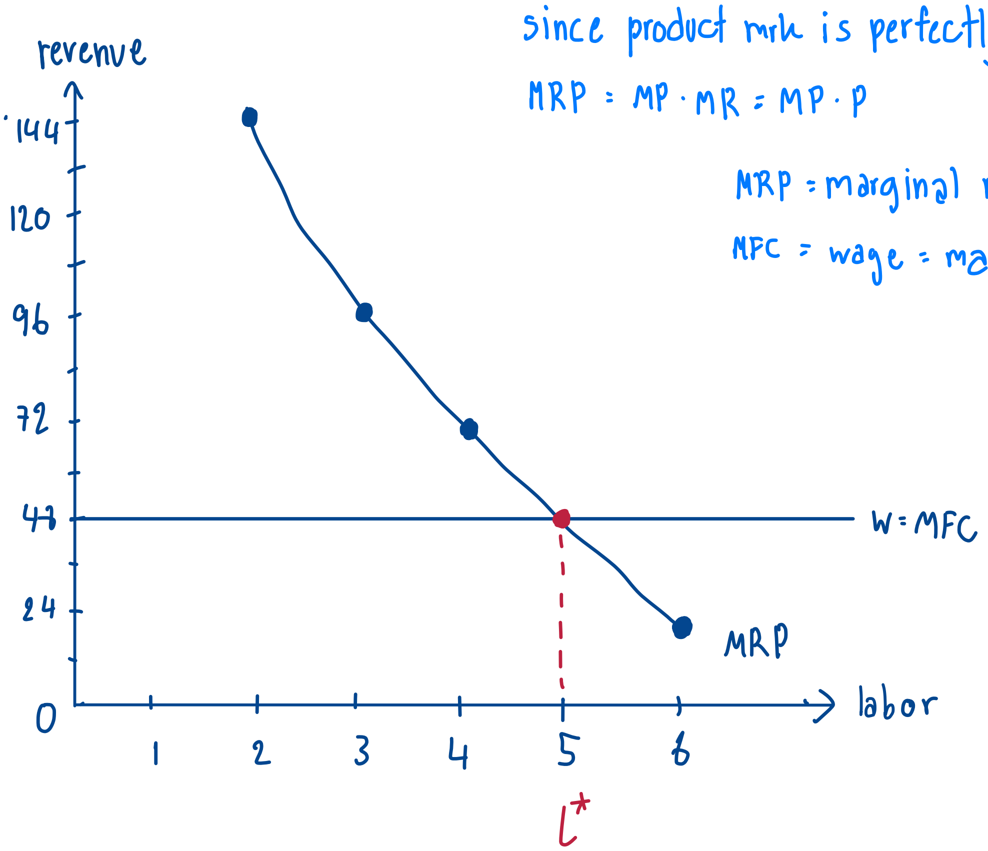
since product mrk is perfectly competitive (P = MR)

MRP = MP · MR = MP · P

MRP = marginal revenue product

MFC = wage = marginal factor cost.

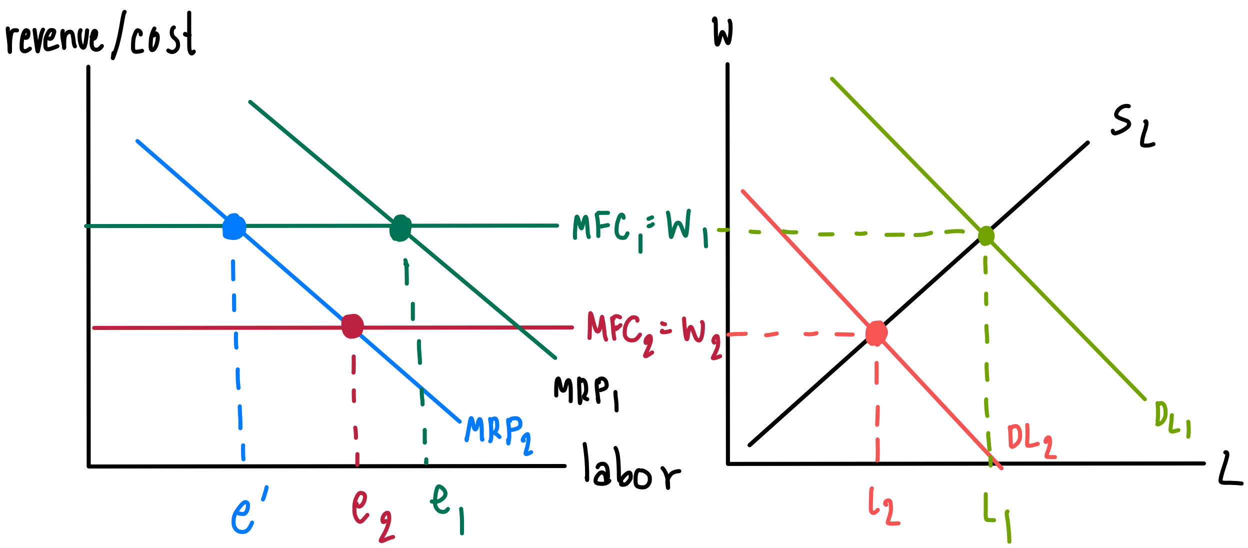
1. a).



Optimal units of labor to maximize profit is when MRP = MFC, marginal benefit = marginal cost.

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.

→ lower consumer's purchasing power shifts MRP curve downwards as demand and price drop in the product market. Firm demands less labor so D_L shifts left and wage drops.



This revenue in less unit of labor hired by this firm ($L_1 \rightarrow L_2$)

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.

$$L_A = \frac{P - MC}{P} = \frac{1 - 0.2}{1} = 0.8 \ \#$$

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

$$HHI = 0.5^2 + 0.2^2 + 0.3^2 = 0.38 \ \#$$

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

$$HHI = 0.5^2 + 0.5^2 = 0.5 \ \#$$

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.

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3.a) Market failure - The price of goods may add the cost of externalities too.

3.b) Not a market failure - not related to what we have studied.

3.c) Moral hazard - full benefit was something both parties mutual agree but after contract were signed, employer doesn't follow the agreement

3.d) Public goods - It's something that should be provided by the government as it is non-excludable + non rivalry.

3.e) Market power - As Starbucks reputation + brand Image is a luxury goods has a larger market share internationally.