BACHELOR OF ECONOMICS
THAMMASAT UNIVERSITY

EE 211 Principles of Microeconomics

Homework Assignment #3

Instructions (Please read carefully.)

1. You can either write your answers on papers and take pictures of your answers, or write them using a tablet. In either case, you need to save all pages in ONE single pdf-file and name your file in the following format: Firstname_studentID_HW3.pdf. For instance, Phatta_640464xxxxx_HW3.pdf.
2. Please upload your answers BEFORE 12 pm of November 24, 2021.

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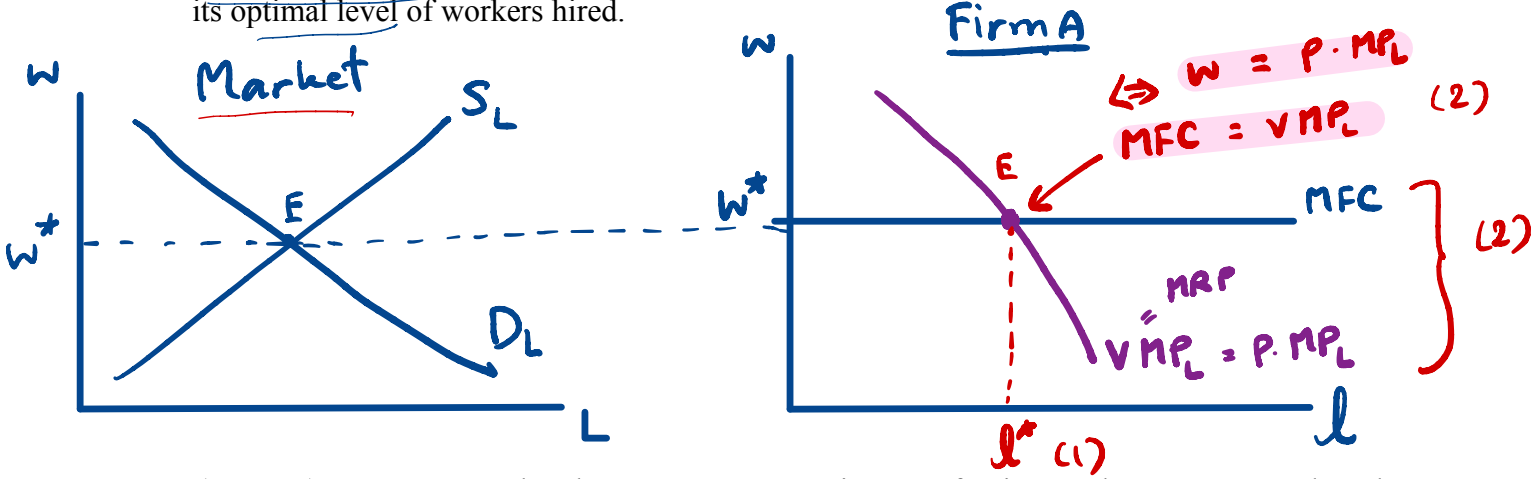
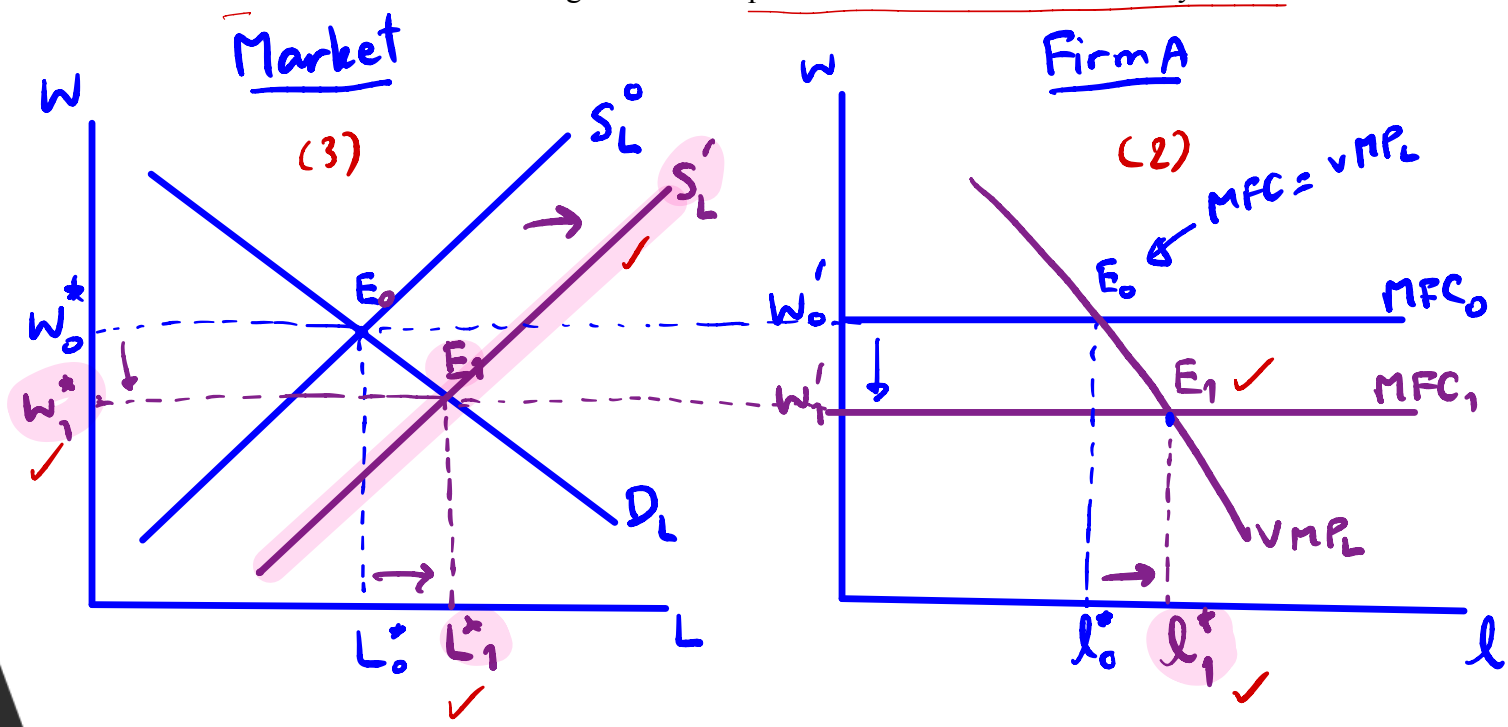
Part 1 (Total 10 points) Factor market

Suppose that the labor market is perfectly competitive, and the current equilibrium wage is w^*.

1. *(5 points)* Suppose that Firm A hires workers from this labor market, and sells its output in a perfectly competitive market. Given that Firm A's goal is to maximize its profit, draw a diagram to illustrate Firm A's decision in hiring workers. State the condition that determines its optimal level of workers hired.

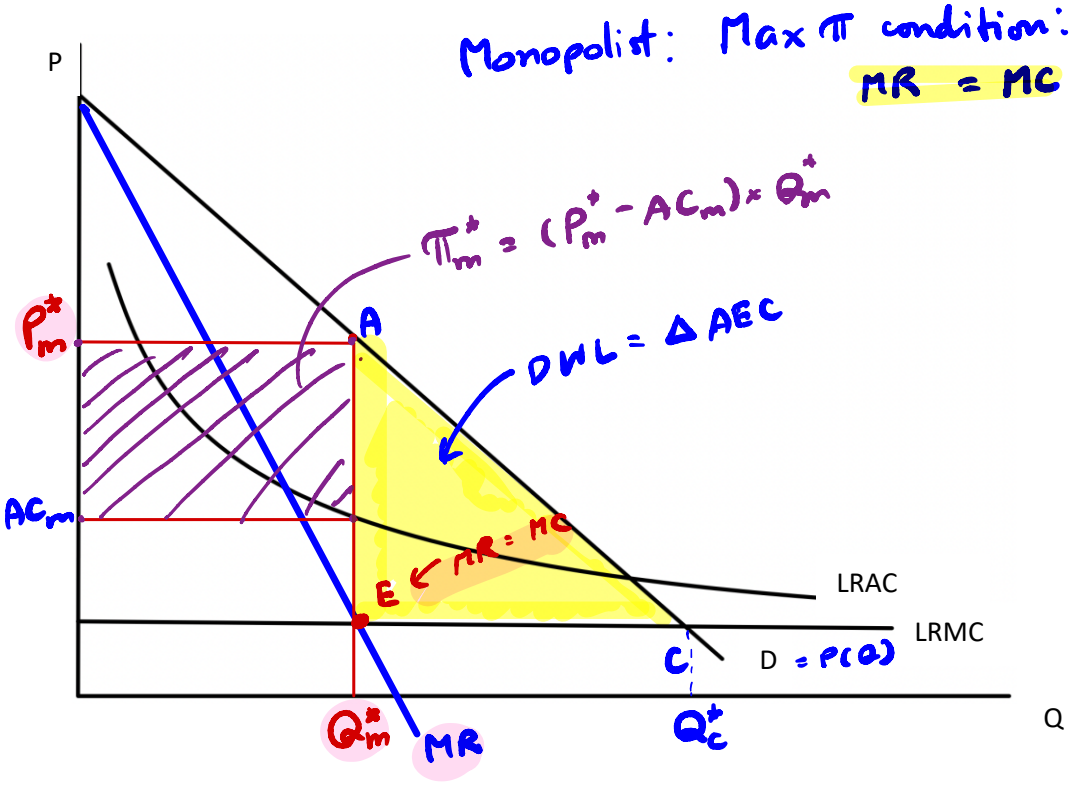


2. *(5 points)* Suppose now that the government permits more foreign workers to come and work in this labor market, everything else constant. Draw a diagram to illustrate the change in the labor market, and discuss the changes in the equilibrium wage and the equilibrium level of labor. How would this change effect the optimal amount of workers hired by Firm A?

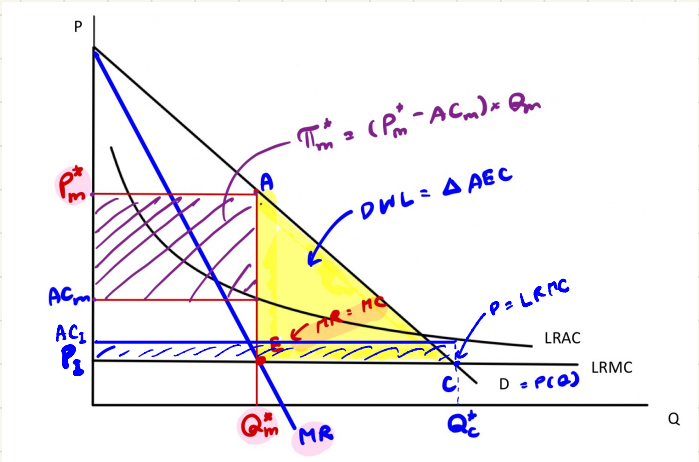


Part 2 (Total 10 points)

The producer of a COVID-19 vaccine, that can prevent all variants of this virus, is a monopolist who wants to price their vaccine to maximize profit. The cost of producing the vaccine is largely the fixed cost involving the research so that the Long Run Average Cost (LRAC) keeps declining the more vaccine is produced. The Long Run Marginal Cost (LRMC) is a small constant cost at all production level. The demand curve and the cost curves can be drawn as shown below.



1. *(4 points)* If the demand of vaccine is downward sloping as usual, show the equilibrium price and quantity that will maximize the profit. State the equilibrium conditions.
2. *(2 points)* Identify the profit and the deadweight loss to the society.
3. *(2 points)* Determine the *ideal price*. Will the monopoly earn any profit at this ideal price? Explain.
4. *(2 points)* Determine the *fair price*. Is there still deadweight loss at this fair price? Explain.

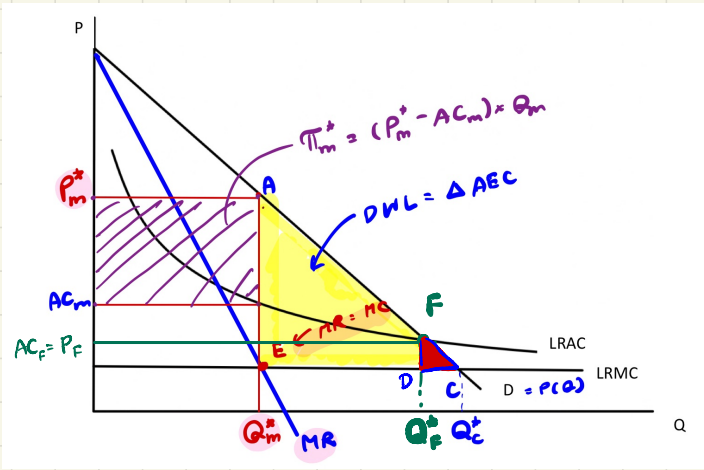


Ideal price:

$P = MC$

$\Rightarrow \pi_m^I < 0 \quad (P < AC)$

$\Rightarrow DWL = 0$



Fair price:

$P = AC$

$\Rightarrow \pi_m^F = 0 \quad (\because P = AC)$

$\therefore DWL_m^F = \Delta FDC < DWL_m^0$