

Instructions

- (1) Please read the instruction carefully. Also take this habit with you into the exam room.
- (2) Please read each question carefully and answer the questions straightforwardly. Always provide economic reasons at least a paragraph for your analysis, or a graph when necessary, even when the question does not indicate so.
- (3) Handing and submitting assignments are only available via BE Moodle.

Answering the questions and preparing answer sheets

- (1) Answers are to be handwritten, in either digital or analog form, in a blank canvas or any clean paper. Make sure that your handwriting is clearly visible and readable.
- (2) There is no need to rewrite the question. Just indicate the question number clearly for each of the answer, such as 1.a).
- (3) When done, for the digital case, collage all the pages into a single PDF file. For those who write on sheets of paper, take photo of all pages then convert all of them into a single PDF file as well.
- (4) Name your PDF file as **StudentID_YourNickname**, such as 640123456_Bo.

Submitting your answers

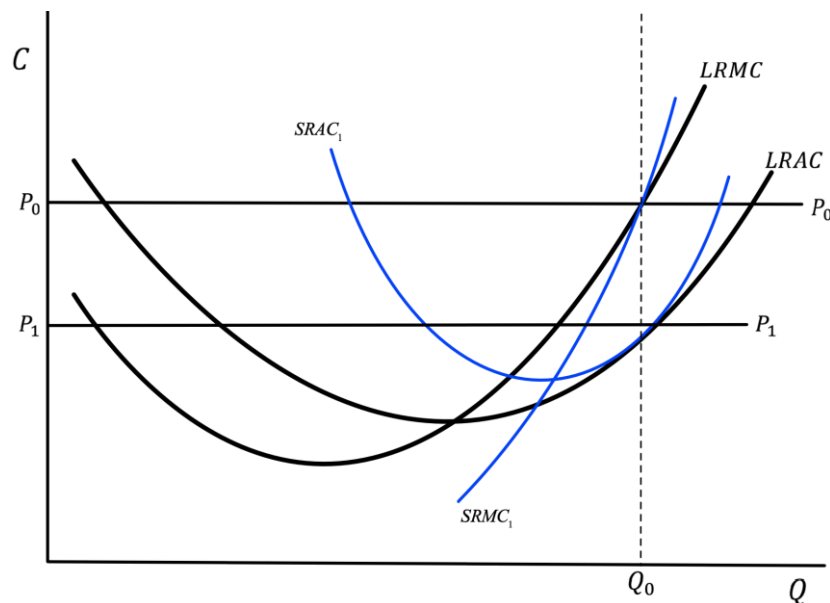
- (1) Make sure your file does not exceed 10MB. This is the maximum file size for BE Moodle upload.
- (2) Login to BE Moodle, head into the course, then the assignment topic.
- (3) Choose your file to submit. Done. There will be timestamp for your upload date and time, so please make sure to not submit later than that.

1. Two COVID-19 vaccines are available in Thailand, Sinovac and Pfizer priced at \$20 and \$40 respectively. Assumed that both vaccines are substitutes, answer the following questions clearly.

1.a) Draw a budget line for these two when a consumer has \$40 and indicate all the essential information on the graph, given that Sinovac is displayed on the horizontal axis while Pfizer is on the vertical axis.

1.b) If a consumer sees that Sinovac is an inferior good while Pfizer is a normal good and Sinovac price is slashed by a half, analyze how consumer's equilibrium changes disaggregating price effect into substitution effect and income effect and explain.

2. In a perfectly competitive market, suppose that every firm is in a long-run equilibrium where each firm receives an excess profit at a market equilibrium price P_0 and produces Q_0 as shown in the graph below.



2.a) If the market equilibrium price decreases to P_1 , in the short run according to the given Short-Run cost curves $SRAC_1$ and $SRMC_1$, find the new Short-Run equilibrium quantity Q_1 and profit of the firm. State the equilibrium conditions.

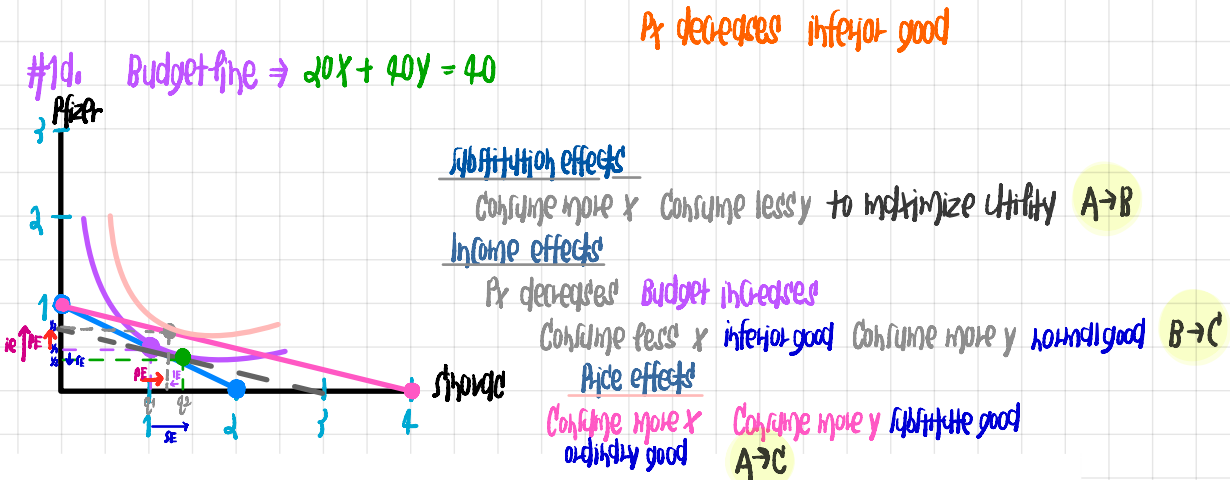
2.b) Show that at the new Short-Run equilibrium quantity Q_1 , the profit earned according to the Long-Run cost curves $LRAC$ at Q_1 and price P_1 is higher than the profit in Short-Run found in 2.a).

2.c) According to the Long-Run cost curves $LRAC$ and $LRMC$, find the equilibrium quantity the firm wants to produce at the new lower price P_1 , when there is no new seller entering the market. State the equilibrium conditions.

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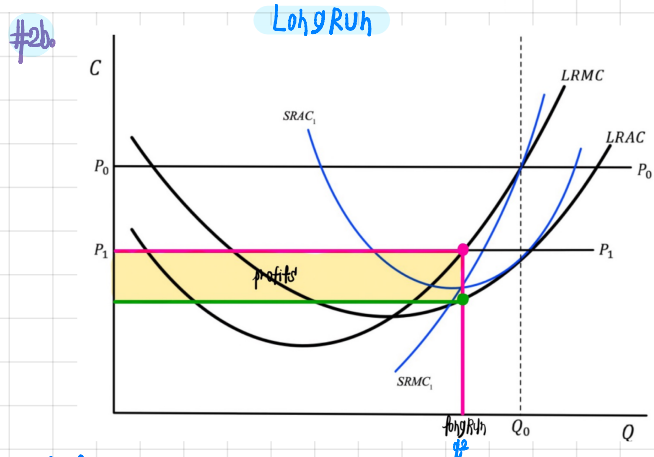
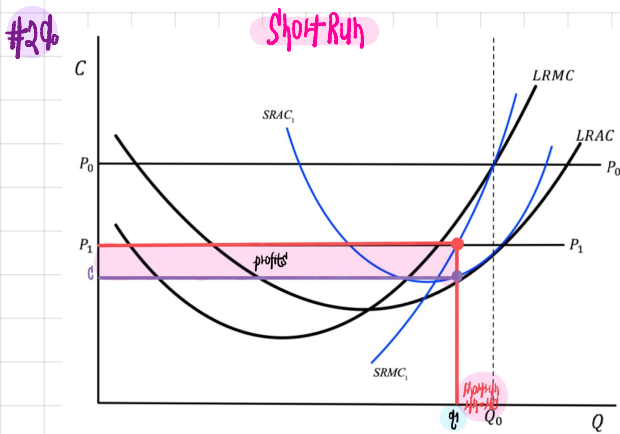
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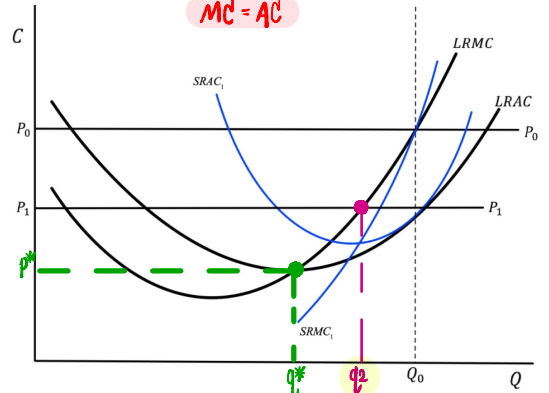
2.b) Show that at the new Short-Run equilibrium quantity Q_1 , the profit earned according to the Long-Run cost curves $LRAC$ at Q_1 and price P_1 is higher than the profit in Short-Run found in 2.a). Long-run profits is higher than short-run profits

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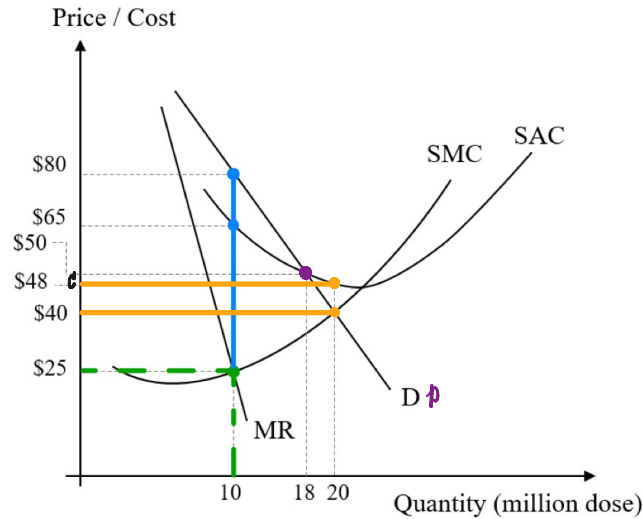


#2c. the equilibrium quantity that firms want to produce at lower price P_1
 $MR=MC$ is Q_1

no sellers join this market
 $MC=AC$



3. Thai government decides to import vaccines from J&J through the Government Pharmaceutical Organization (GPO). Supposed that GPO can act as a private monopoly firm, demand, revenue and cost of importing are displayed in the following graph in USD. Note that a single dose of J&J vaccine is sufficient to immunize COVID-19. Answer the following questions clearly.



- 3.a) If GPO wants to maximize profit, how many million doses should they import and at which price can be sold for each dose? $MR=MC$
- 3.b) According to 3.a), how much is the total profit that GPO receives in million USD? $TR \rightarrow$
- 3.c) If the government decides to intervene and set a fair price, how many million doses GPO needs to import and how much the price to be set?
- 3.d) To achieve herd immunity with a new strategy, the target number of people privately vaccinated is 20 million people. How much for a dose that each person pays for the vaccine and how much does the government should subsidize in total?

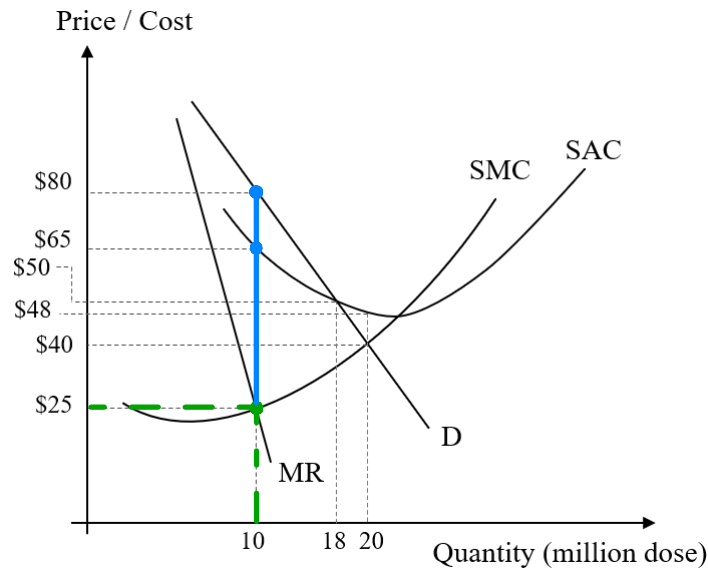
#1a. Maximize profits $MR=MC$
Monopolist should import 10 million doses and sell at 80 \$

#1b. Total Revenue $\rightarrow 80 \cdot 10 \rightarrow 800$ million
Total Cost $\rightarrow 65 \cdot 10 \rightarrow 650$ million
Profits $\rightarrow 150$ million USD

#1c. The government decides to intervene at fair price, they import 18 million doses and selling at 50 \$.

#1d. GPO facing with first loss because the price that they can sell is 40 \$ but the cost is 48 \$.
Therefore, the government should pay subsidize for 160 million \$.
Loss $\rightarrow (48-40)(20) \rightarrow 160$ million
Person pays 40 \$ for 20 doses

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