

Midterm Solutions

International Economics

Topics

- Midterm Solutions
- Basic Statistics

1. Home has 2,400 units of labor available. It can produce two goods, cheese and wine. The unit labor requirement is cheese production is 12, while in wine production is 6. Foreign has a labor force of 1,600. Foreign's unit labor requirement in cheese production is 10, while in wine production it is 1.

(a) (10 points) Graph Home's production possibility frontier.

- m1a.
- no variable on axis: -1
- Incorrect intercepts: -2~4

이지훈

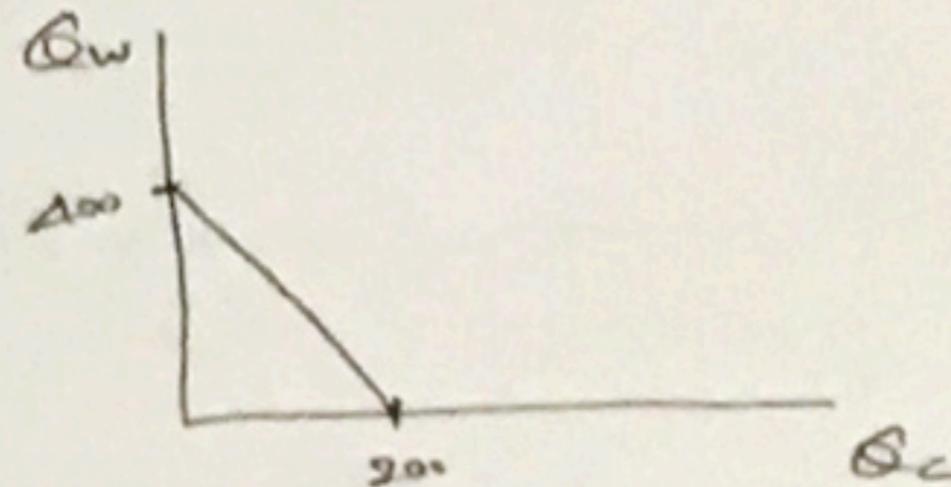
(a) (10 points) Graph Home's production possibility frontier.

$$L = 2400 \quad \alpha_C = 12 \quad \alpha_W = 6, \quad L^* = 1600 \quad \alpha_C^* = 10 \quad \alpha_W^* = 1$$

$$12Q_C + 6Q_W \leq 2400$$

$$2Q_C + Q_W \leq 400$$

$$\therefore Q_W \leq -2Q_C + 400$$



(b) (10 points) What is the opportunity cost of cheeses in terms of wine?

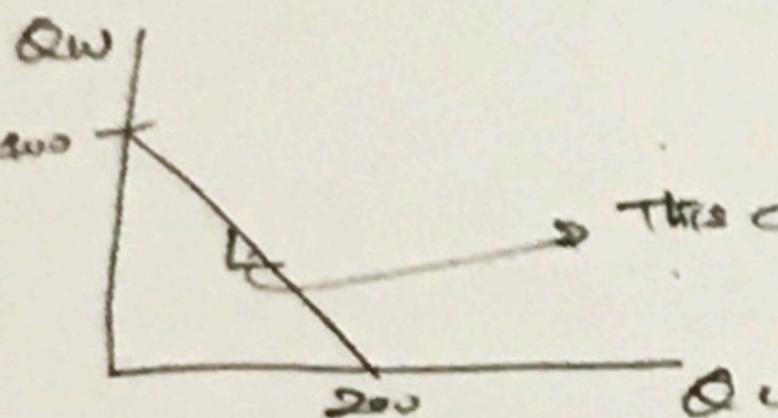
- only "2" is written with no explanation: 5 points
- $1/2$ with explanation: -4

m1b

b) (10 points) What is the opportunity cost of cheeses in terms of wine?

$$\frac{a_{lc}}{a_{lw}} = \frac{12}{6} = \$2.$$

~~0 | 2 | 0~~



→ This corner slope is opportunity cost of cheeses in terms of wine.

m1c

(c) (10 points) In the absence of trade, what would be the price of cheeses in terms of wines? why?

- Just abstractive explanation: -3
- There is no explicit statement about country, so one of the relative price will be enough

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(c) (10 points) In the absence of trade, what would be the price of cheeses in terms of wines? why?

① If trade is absence, supply of goods will equal price of goods.
Thus, the price of cheeses in terms of wines equals \$2 ($= \frac{w}{6} = \frac{\text{cheese}}{\text{wine}}$)

m1d

(d) (10 points) Graph Foreign's production possibility frontier.

- PPF with no numbers: -4

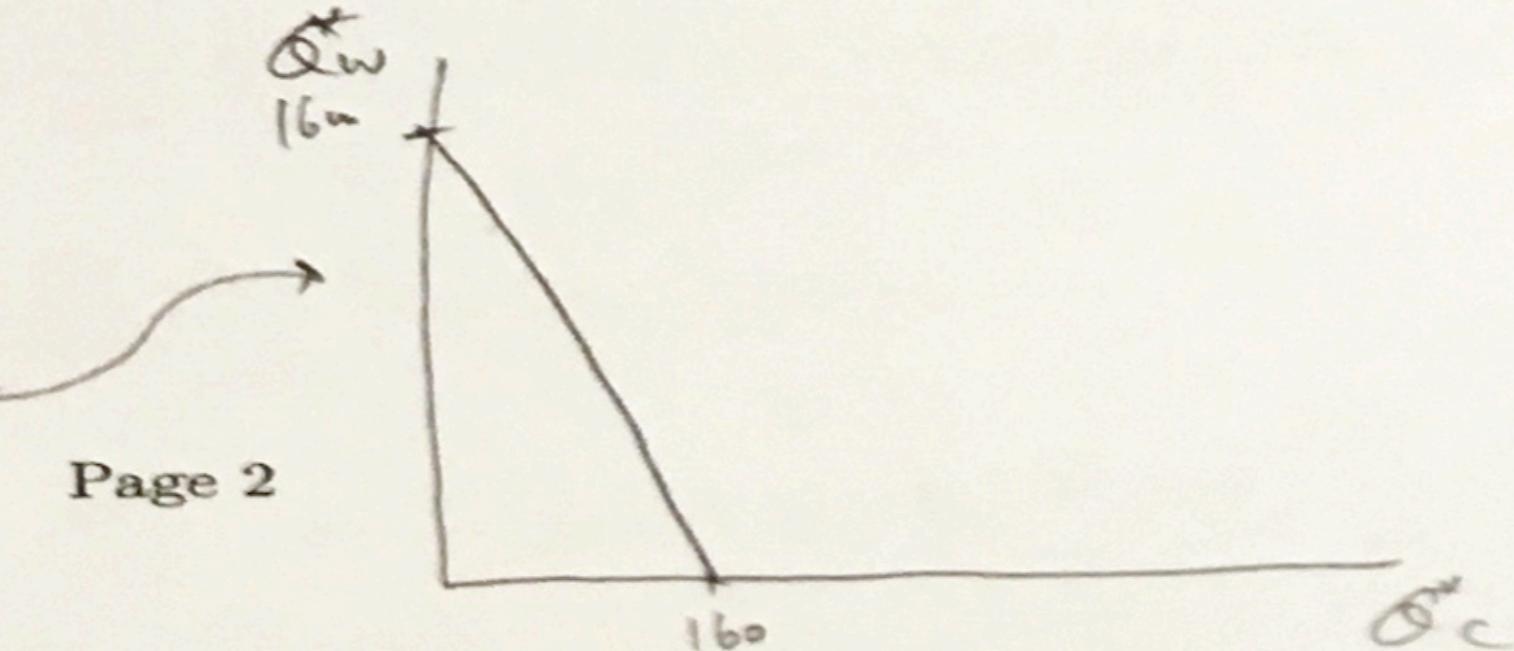
이지훈

(d) (10 points) Graph Foreign's production possibility frontier.

$$L^* < 1600 \quad \alpha^*_{LC} = 10 \quad \alpha^*_{WW} = 1$$

$$10Q^*_{LC} + 1 \times Q^*_{WW} \leq 1600$$

$$Q^*_{WW} \leq -10Q^*_{LC} + 1600$$



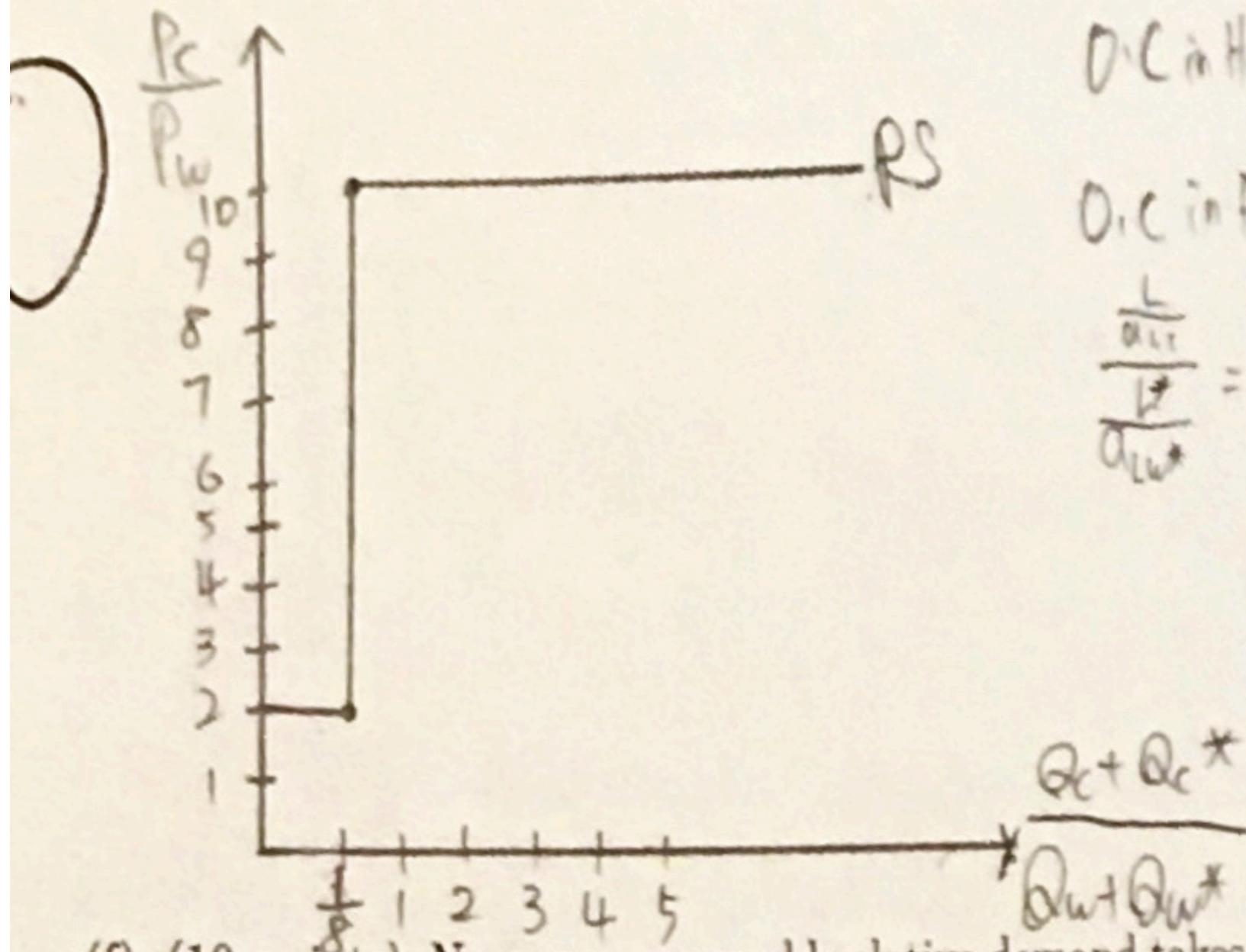
m1e

(e) (10 points) Construct the world relative supply curve.

- No mark on the graph: -2
- Only graph with no numbers: -6
- Graph with equations (not specific number):
-4
- Simple upward RS curve: -7

이시훈

(e) (10 points) Construct the world relative supply curve.



O.C in Home: 2

O.C in Foreign: 10

$$\frac{\frac{L}{a_{LH}}}{\frac{L}{a_{LW}}} = \frac{\frac{200}{10}}{\frac{1600}{1600}} = \frac{200}{1600} = \frac{200}{1600} \div \frac{1}{8}$$

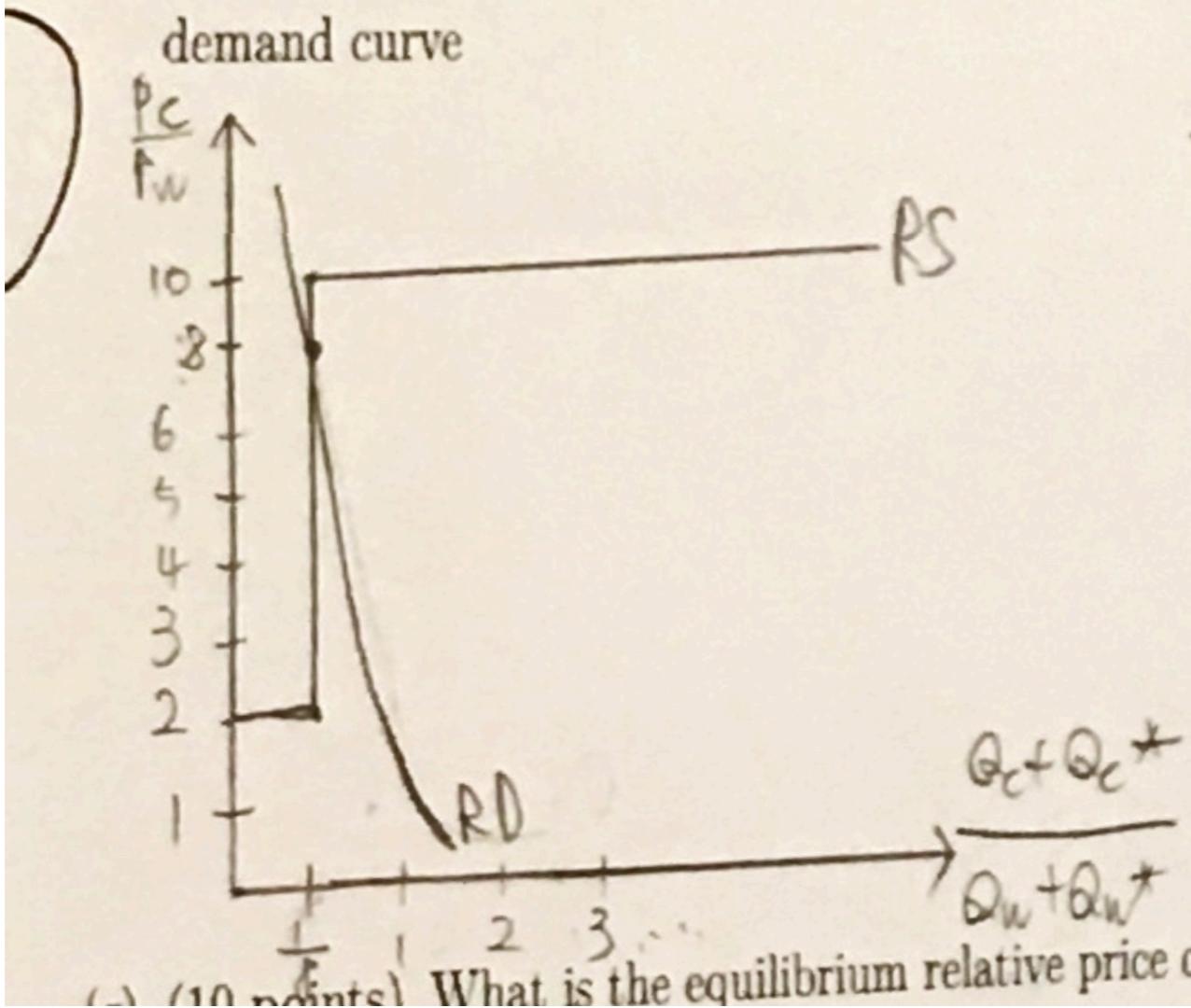
m1f

(f) (10 points) Now suppose world relative demand takes the following form: [Demand for cheese] / [demand for wine] = [price of wine] / [price of cheese]. Graph the relative demand curve

- simple downward curve for RS: -3
- No graph with correct explanation: -3

이시훈

(f) (10 points) Now suppose world relative demand takes the following form: [Demand for cheese] / [demand for wine] = [price of wine] / [price of cheese]. Graph the relative demand curve



$$\frac{D_C}{D_W} = \frac{P_W}{P_C} \Leftrightarrow y = \frac{1}{x}$$

$$(1,1), (\frac{1}{2},2), (\frac{1}{3},3) \dots (\frac{1}{8},8)$$

(g) (10 points) What is the equilibrium relative price of cheeses? Use the graph.

m1g

(g) (10 points) What is the equilibrium relative price of cheeses? Use the graph.

- Incorrect or no numbers: -3
- If you reuse previous incorrect answer, it will not decrease your score even if the answer is incorrect because it is already reflected in previous score
- No mark for equilibrium: -6

이시훈

(g) (10 points) What is the equilibrium relative price of cheese?

The equilibrium realtive price of cheese is found at
intersect of relative demand curve and relative Supply Curve.
Look at the above graph. in (A), the intersect point is $(\frac{1}{2}, 8)$.
So relative price of cheeses is 8.

m1h

(h) (10 points) Describe the pattern of trade.

- The pattern of trade should be stated explicitly: -2 ~ -4

이시훈

(h) (10 points) Describe the pattern of trade.

Home produces only cheese, and Foreign produces only wine.

Each country trade some of its product for the product of the other country.

m1i

(i) (10 points) Show that both Home and Foreign gain from trade.

- Too abstract explanation: -2~-4

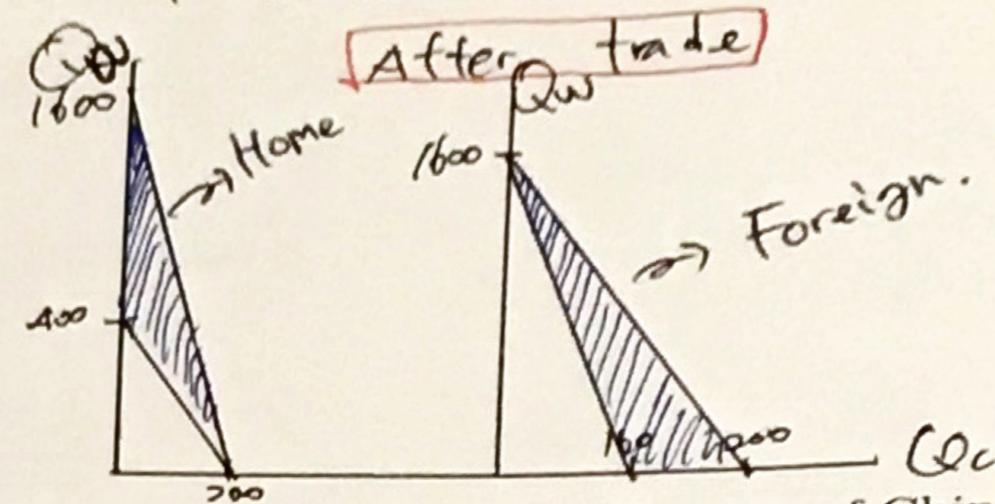
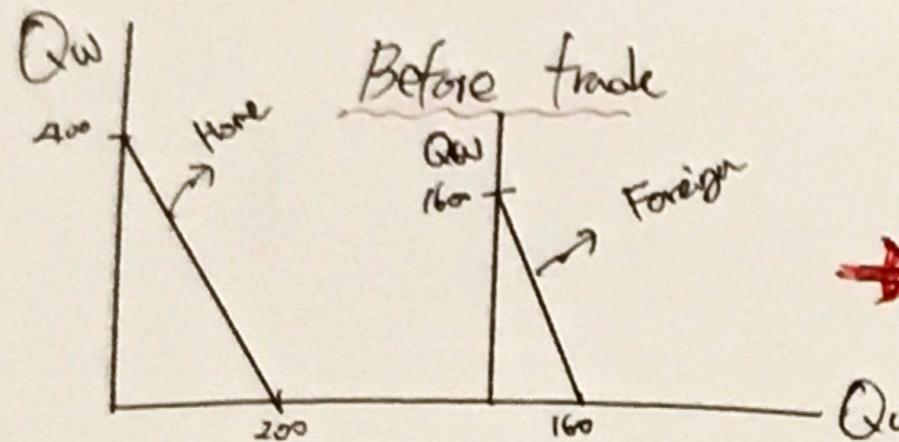
김영빈

ECO3005(22536)

Midterm Examination

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- (i) (10 points) Show that both Home and Foreign gain from trade.
we could check the Ewan's Relative Price of cheeses ; it's 8. (vice versa, wine's RPi is $\frac{1}{8}$)



2. The below graph shows the average cost (AC) curve and world demand (D) curve of China and Vietnam in the button industry.

(Case B) of China

2. The below graph shows the average cost (AC) curve and world demand (D) curve of China and Vietnam in the button industry.

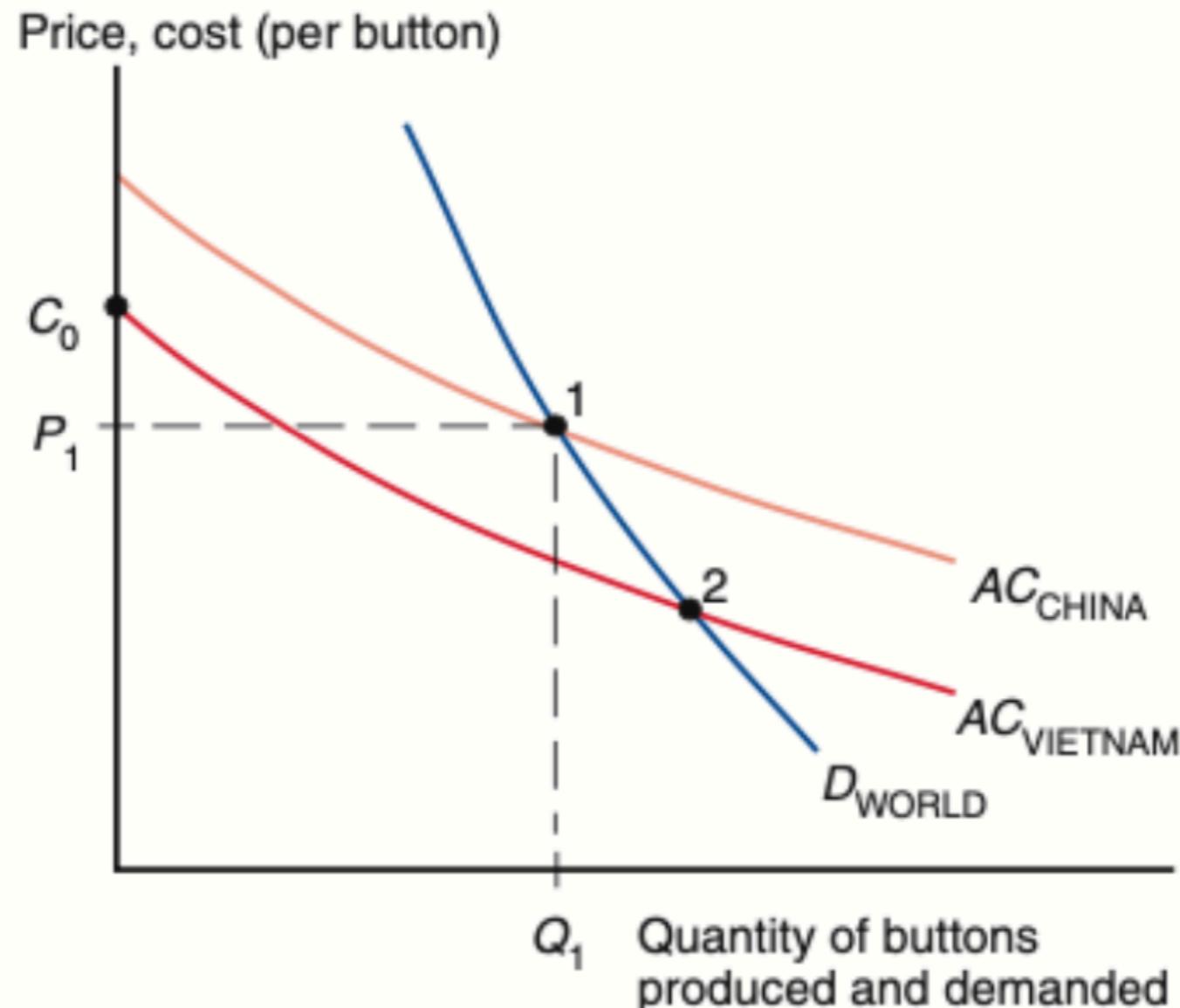


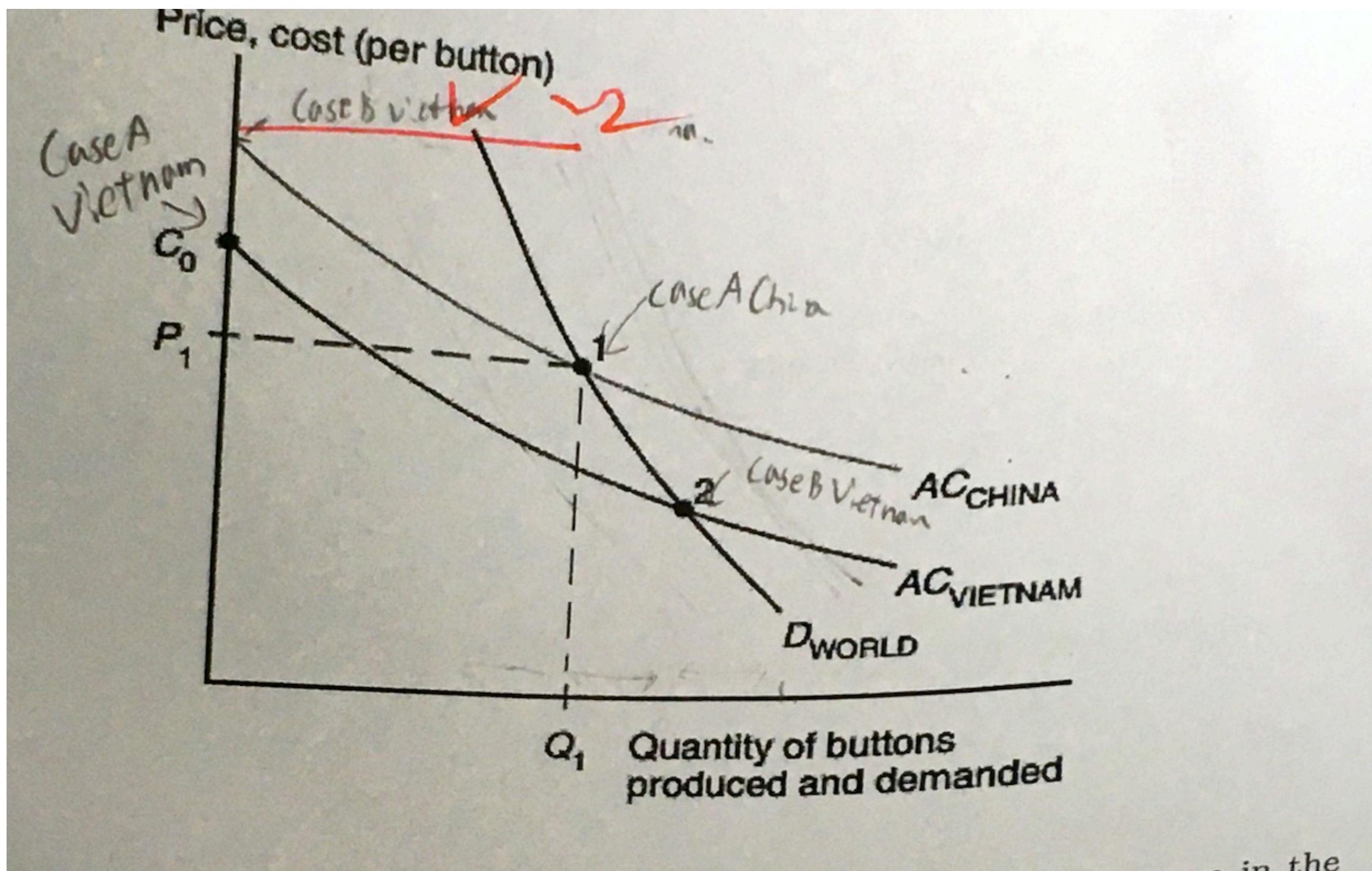
그림 1: Average cost (AC) curve and world demand (D) curve of China and Vietnam in the button industry

m2a

- (a) (10 points) CASE A: China produces all of the buttons to the world. Mark production points on the above graph both for China and Vietnam as [CASE A-china] and [CASE A-vietnam]

- Five points for each

김성규



m2b

(b) (10 points) In this case, can Vietnam supply buttons to the world button market?
why?

- No explanation: -4 ~ -8

김성규

buttons to the world button market?

Vietnam price per button
is much higher than price of China.
so, they can't supply.

m2c

(c) (10 points) Discuss the efficiency of this situation (Hint: Is there a more efficient situation?)

- no specific explanation: -3 ~ -5
- no conclusion: -5

류제운

(c) (10 points) Discuss the efficiency of this situation (Hint: Is there a more efficient situation?)

If vietnam were to be closed off from trade, then button would be at point 2 thus trade actually represents a situation worse than autarky for vietnam and protection may be warranted.

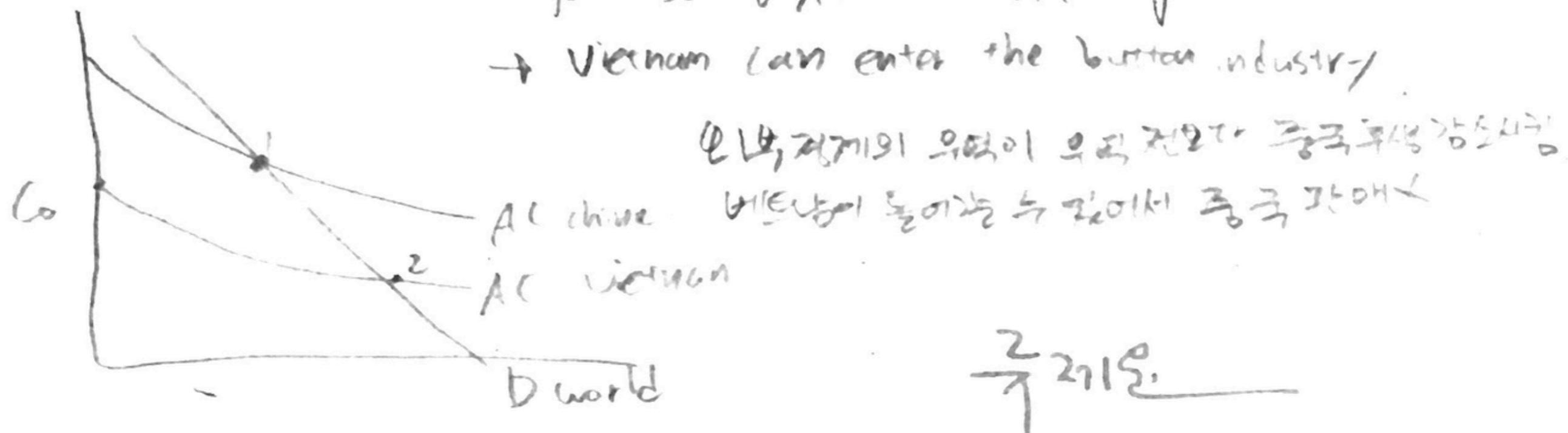
m2d

(d) (10 points) Recently, a growing labor shortage has been causing Chinese wages to rise. If this trend continues, what would you expect to see happen to external economy industries currently dominated by China? How would change take place? explain by using the above graph.

- Not using graph: -4
- Upward AC curve with no explanation: 5

(d) (10 points) Recently, a growing labor shortage has been causing Chinese wages to rise. If this trend continues, what would you expect to see happen to external economy industries currently dominated by China? How would change take place? explain by using the above graph.

wage rise \rightarrow AC curve shift upward
 \rightarrow Vietnam can enter the button industry



(e) (10 points) CASE D. Vietnam's entry into the button industry

m2e

- (e) (10 points) CASE B: Vietnam produces all of the buttons to the world. Mark production points on the above graph both for China and Vietnam as [CASE B-china] and [CASE B-vietnam]

2. The below graph shows the average cost (AC) curve and world demand (D) curve of China and Vietnam in the button industry.

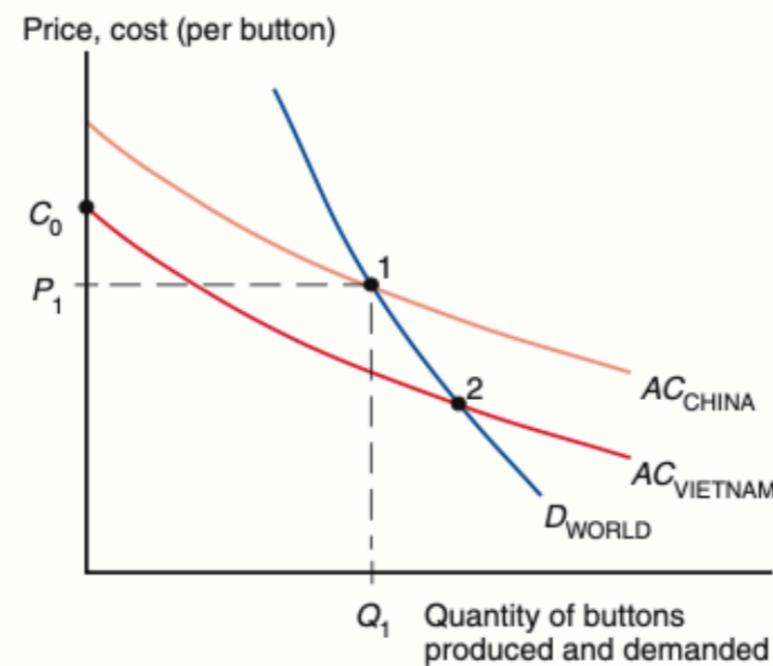


그림 1: Average cost (AC) curve and world demand (D) curve of China and Vietnam in the button industry

m2f

(f) (10 points) In this case, can China supply buttons to the world button market? why?

- No explanation: -3 ~ -7

류제윤

) (10 points) In this case, can China supply buttons to the world button market? why?

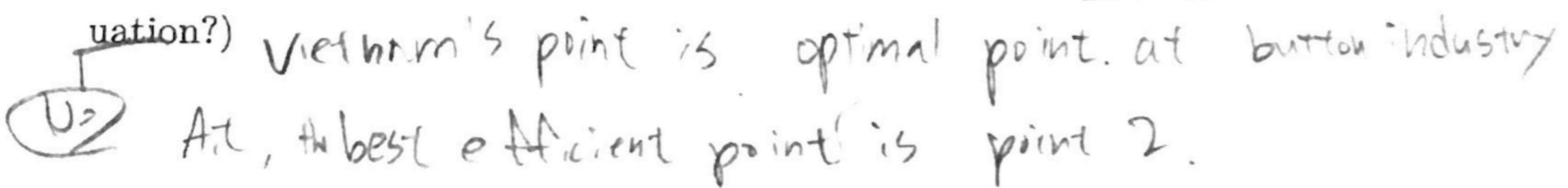
No they cannot, Vietnam is an established producer and produces at quantity and price at point 2. if China enter into the industry, its initial startup cost is higher than point 2. so they cannot enter the industry

m2g

(g) (10 points) Discuss the efficiency of this situation (Hint: Is there a more efficient situation?)

- No reason: -5
- No conclusion: -5

(g) (10 points) Discuss the efficiency of this situation (Hint: Is there a more efficient situation?)

 Vietnam's point is optimal point at button industry
At, the best efficient point is point 2.

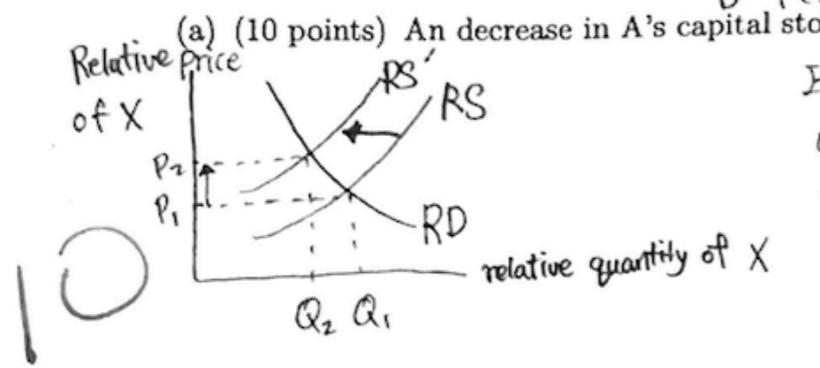
3. Countries A and B have two factors of production, capital and labor, with which they produce two goods, X and Y. Technology is the same in the two countries. X is capital-intensive; A is capital-abundant. Analyze the effects on the terms of trade and the two countries' welfare of the following:
- (a) (10 points) An decrease in A's capital stock
 - (b) (10 points) An decrease in B's capital stock
 - (c) (10 points) An decrease in A's labor supply
 - (d) (10 points) An decrease in B's labor supply

3

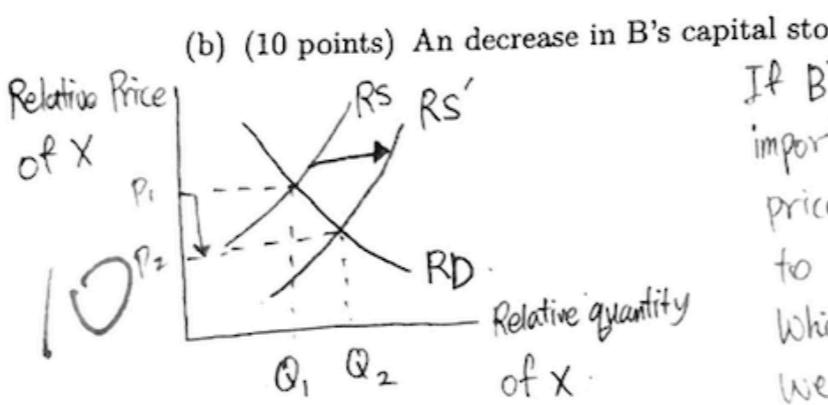
- Right direction, but no explanation of the change in relative price: up to 5
- No clear statement regarding terms of trade:
-2 ~ -3
- No clear statement regarding welfare: -2 ~ -3

countries' welfare of the following:

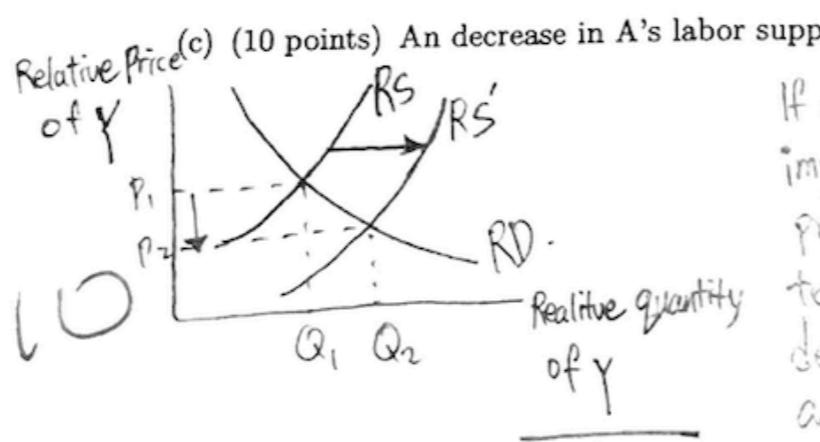
A: X export, Y import (capital abundant)
B: Y export, X import (labor-abundant)



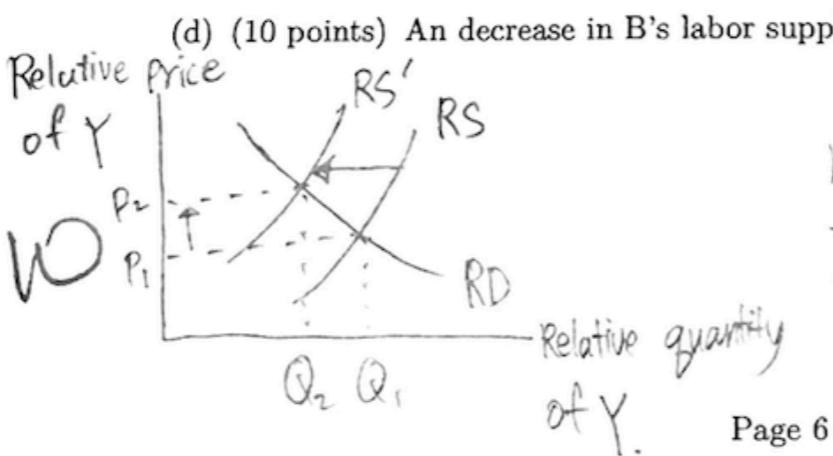
If A's capital stock decreases, A decreases exporting X. So, RS shift to left and relative price of X increases. Then the terms of trade to A improves. Therefore A's welfare increases while B's terms of trade get worse and welfare decreases.



If B's capital stock decreases, B will increase the import of X, so RS shift to right and relative price of X decreases. Then the terms of trade to A decreases. Therefore A's welfare decreases while B's terms of trade improves and welfare increases.



If A's labor supply decreases, A will increase the import of Y, so RS shift to right and relative price of Y decreases. Then, the terms of trade to B become worse. Therefore B's welfare decreases. While A's terms of trade improves and welfare increases.



If B's labor supply decreases, the wage becomes higher and B decreases exporting Y. So RS shift to left and relative price of Y increases. Then, the terms of trade to B improves. Therefore B's welfare increases. While A's terms of trade gets worse and welfare decreases.

Basic Statistics



Variable	Obs	Mean	Std. Dev.	Min	Max
mid_total	90	112.1556	41.04229	0	200