B.E. International Program

Faculty of Economics, Thammasat University

Midterm Examination: 1/2017

Subject: EE 481 Industrial Economics

Date: Wednesday October 11, 2017 **Time: 14:00 - 15:30 hrs.**

Seat No……

ID.No……..

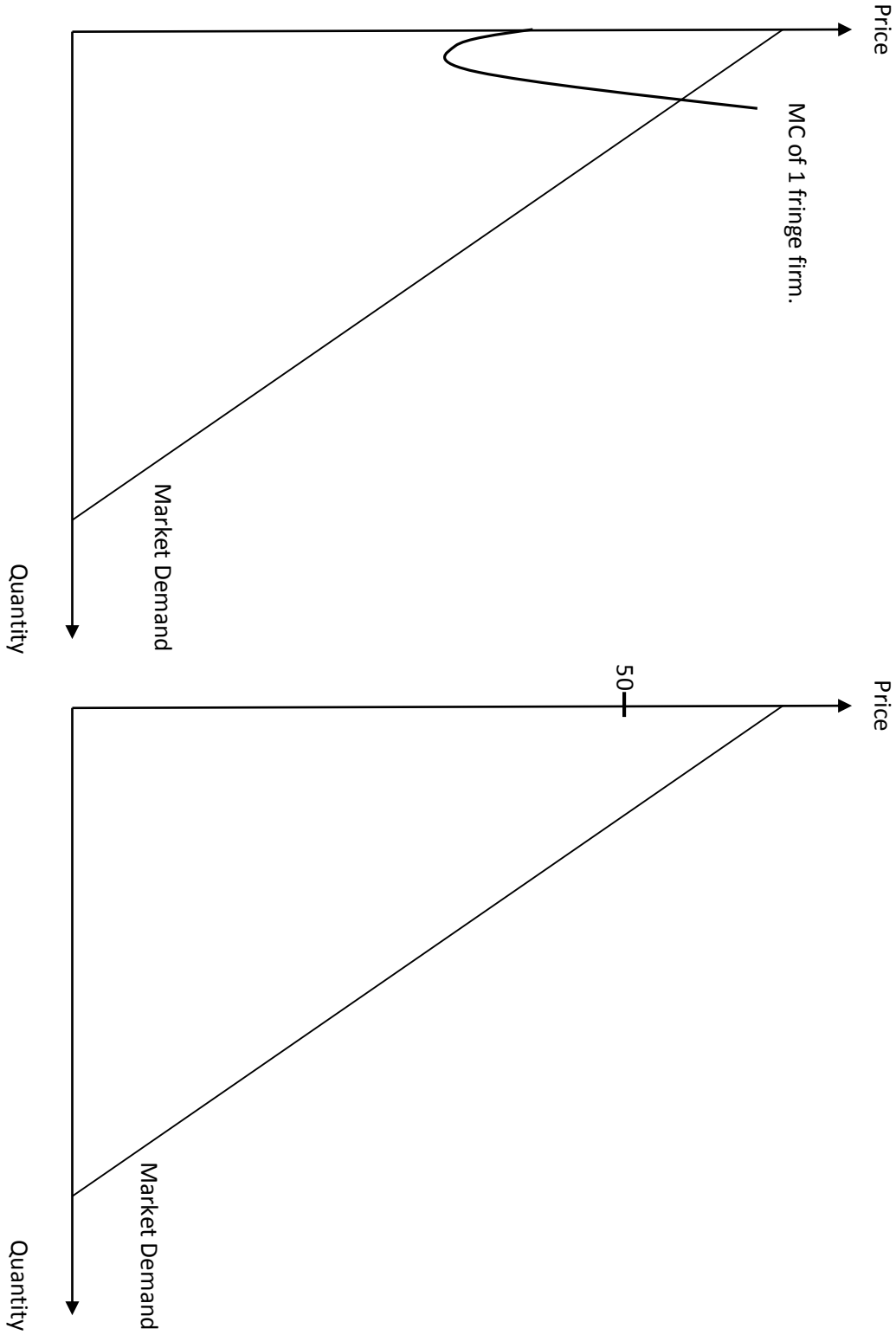
- Please do not turn this page over until you are instructed otherwise.
- The total score is 85 points. There are 8 pages including this cover page.
- Write neatly **and show all your work**. Answers without verification will receive no credit.
- If you are pressed for time, set up the problem without final calculations.
- ONE calculator (either simple, scientific or financial) is allowed.
- You are allowed to use pencil.

Students:

Please make sure that you do not bring any unpermitted items into the examination room. If you are caught doing so, you will automatically receive an **"F"** for that course and be suspended for one academic year.

Part 1 (35 points): Short Answers

1. (12 points) Given the following market demand and a fringe firm's marginal cost curve, find the equilibrium price and quantity supplied by the dominant and the fringes. Assume 1) there are 2 fringe firms 2) marginal cost of the dominant firm is constant at 50 per unit.



1. (15 points) Use the below information to answer the following questions
   a) Which industry is the more concentrated? Why?
   b) Calculate the average marginal cost of each industry.

Instant Coffee Industry Demand elasticity = -0.8 Product Price = 25 baht/bottle		**Egg Industry** Demand elasticity = -0.4 Product Price = 8 baht/egg.	
Firm	unit sold/year	Firm	unit sold/year
1	200	1	2,000
2	1,810	2	3,371
3	7,180	3	4,388
4	850		
Total	10,040		9,759

3. (8 points) Is the result from the dominant firm's model learned in class a Subgame Perfect Nash Equilibrium (SPNE)? Why or why not?

Part 2 (25 points): Graph & Long Answer –<u>Your answer should be between 2/3 to 1-page long.</u>

Consider the below subscription options offered by "The Economist", one of the most popular magazine-format newspaper. Use graphical representation to explain this type of pricing. You should at least 1) Explain what type of consumers would choose for each option. 2) Explain how "The Economist" can earn more revenue from offering these different options. Along with your graph, please describe your answer in words as well.

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Part 3 (25 points): Problem Set

Suppose market demand for gasoline is given by P = 1000 – Q. There are 2 firms competing in this market. Both firms have an identical total cost function of $TC = Q^2$. Firms are **Cournot competitors** (meaning that they choose quantity as the strategic variable) and play a supergame. The collusive agreement being considered is for the two firms to produce 1/2 of the industry output. To sustain the collusion, firms adopt the grim punishment strategy of stop colluding forever.

a) (5 points) If collusion is successful, what should be the market price and quantity?
b) (10 points) What should be the value of δ to sustain collusion if detection of deviation requires 2 periods? Show the derivation of δ to receive full credits.
c) (5 points) Suppose firm 1 discovers a more cost-efficient way to produce. The total cost function of firm 1 now becomes $Q^2/2$. (Firm 2 still have the same total cost function, which is $TC = Q^2$). If detection of deviation requires 2 periods, which firm is more likely to cheat? Explain in words, no calculation needed.
d) (5 points) Suppose firm 2 announces that it would adopt the Bertrand (rather than Cournot) as the grim punishment strategy. Do you think this can help enforce the collusion? Explain in words, no calculation needed.

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