Homework 6

Due November 28, 2017

Industrial Economics
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ICEF - HSE

Homework will be collected at the end of the lecture on the day it is due. Submissions in any other time or manner will be ignored. The maximum score is 100. Unprofessionally looking papers or unnamed or unstapled sheets or improperly labelled questions or bad handwriting will result to a penalty up to 50% at the discretion of the grader. Plagiarism will be prosecuted and perpetrators will not be able to pose as "student at University of London, London, UK" in their social media anymore.

1. *M* is a monopolist in a market protected by exogenous barriers. The market demand is $p = 12 - q$ and cost is zero.
   (a) Calculate the equilibrium price, quantity and profits for *M*. [5p]
   (b) The industry regulator announces that next period the barriers will be uplifted and any firm can enter this industry. Firm *E* is the only firm considering entry. Find the equilibrium price, quantities and profits if the industry becomes a Cournot duopoly. [5p]
   (c) Find the equilibrium price, quantities and profits if the industry becomes a Stackelberg duopoly with *M* leading. [5p]
   (d) Assume now that the regulator charges a fee f per period to *E* for the use of the public distribution network that *M* has developed, while *M* (as the developer) is allowed to access it for free. Find the fee f_{max}^{c} such that *E* will marginally abort entering a Cournot duopoly market with *M*. [10p]
   (e) Find the fee f_{max}^{s} such that *E* will marginally abort entering a Stackelberg duopoly market with *M*. [10p]
   (f) Assume now that *E* is able to observe K_M, *M*'s capacity, before entry. If competition in the industry is described by the Stackelberg – Bertrand sequence analyzed in lecture 12, find K_M as a function of f, so that *E* will marginally abort entry. [25p]
   (g) Explain what should be *M*'s optimal strategy with respect to K_M for every possible value of $f \geq 0$. [25p]
   (h) Assume that deterrence through K_M is feasible, non-obsolete and not unprofitable. Estimate *M*'s loss as a function of f from uplifting the exogenous barriers. [15p]