Econ 2016: Principles of Microeconomics

Homework 9 (Total score: 20 Points)

Due Date: Nov 14 ~~(Wed)~~ Mon, 12:40 PM

1. Multiple Choice (6 points)

1. Relative to a competitively organized industry, a monopoly who is facing inelastic demands is more likely to produce:
   A. more output, charge higher prices, and earn economic profits.
   B. less output, charge higher prices, and earn economic profits.
   C. more output, charge lower prices, and earn economic profits.
   D. less output, charge lower price, and earn economic profits.

2. We consider _____ least likely to be a firm in an imperfectly competitive industry.
   A. Google in search engine industry
   B. Delta, United Airlines, and American Airlines.
   C. Johnson & Johnson, Pfizer, and Merck
   D. A potato farmer

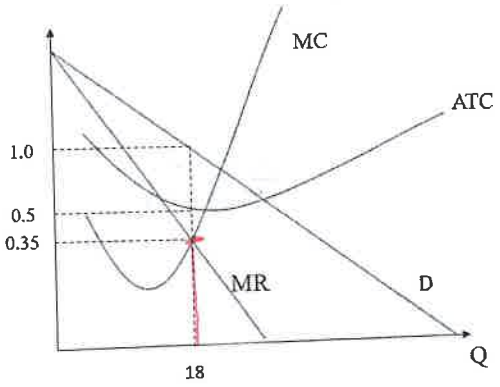
3. _____ refers to a firm charging different prices to different buyers for identical products.
   A. Market power B. Price taking C. Price discriminating D. Price gouging

4. Assume that Anna's roommate always plays the music at the midnight, but Anna wants to have good sleep. Anna's roommate conveys _____ to her.
   A. positive externalities
   B. negative externalities
   C. economies of scale
   D. public goods

5. Perfect competition differs from monopolistic competition primarily because
   A. in perfect competition, firms have homogeneous products.
   B. in perfect competition, price is a decision variable.
   C. in monopolistic competition, entry into the industry is limited.
   D. in monopolistic competition, there are many firms in the industry.

6. Refer to Figure 1. Six chewing gum producing firms form a cartel. The firms have identical cost structures. If the cartel produces the profit-maximizing output level, each firm should produce
   A. 2(k) packs of chewing gum
   B. 3(k) packs of chewing gum
   C. 6(k) packs of chewing gum
   D. indeterminate output levels from this information.

Figure 1: Question 6



2. Calculation Question (8 points):

- The following table represents the market share percentage for each firm in an industry.

Firm	A	B	C	D	E	F	G	H
Market Share	16	6	12	7	20	10	18	11

1. Calculate the Five-firm concentration ratio for this industry.
   Answer: $16+12+20+18+11$
   $= 28+38+11$
   $= 66+11 = 77.$

2. Calculate the HHI for this industry.
   Answer: $16^2+6^2+12^2+7^2+20^2+10^2+18^2+11^2$
   $= 256+36+144+49+400+100+324+121$
   $= 1430.$

3. Would the Justice Department consider this industry as unconcentrated, moderate concentrated, or concentrated?
   Answer: 1500 1800

4. Suppose firms A and B plan to merge. What would be the value of the HHI after this merger? Would the Justice Department most likely agree with this merge? Yes.
   Answer:
   HHI: $22^2+144+49+400+100+324+121$
   $= 484+\cdots$
   $= 1622.$

3. Short-Answer Question (6 points):

- Refer to the figure below. Absent government intervention, how much fertilizer will be produced?

60

- To achieve the social optimal, how much fertilizer should be produced (efficient amount)?

50

- How much is the external cost?

$5

- Given the external cost, what is the total damage imposed as a result of producing the market (unregulated) level of fertilizer?

$5 x 60 = 300

- Given the external cost, what is the total damage imposed as a result of producing the efficient level of fertilizer?

$5 x 50 = 250.

- To force this firm to produce the efficient level of output, the government should impose a tax of $5 per bag of fertilizer