Practice Set 4

Monopoly & Market Efficiency

This set contains practice material for your own use. It is highly recommended to work on the problems on your own. Do not just read the provided solutions. Instead, try to solve the problems and use the solutions only when you are stuck. Reading problems that someone else has solved has the same value on your preparation like watching someone running a marathon on TV and then expecting to be able to run it, too! If you have questions on this set, please ask your section's teaching assistant.

1. Show how market power increases with the gradient of the demand curve the firm is facing.

2. A market faces demand $p = 10 - 2Q$, while the marginal cost of production is $MC = 2$.

    (a) If this market is populated by a large number of identical firms, what will be the price and the total quantity?

    (b) If the market is exploited by a single firm, at what price will this firm be selling?

    (c) Calculate the DWL when the market is exploited by a single firm.

3. Market demand for a monopolist is $p = 14 - 2q$. Subtract the revenue for 5 units from the revenue for 4 units to show that the marginal revenue of the 5th unit is lower than the price.

4. Katerina is the only seller of lemonade in the nationhood. The demand for lemonade is $p = 30 - 2q$, where q are glasses of lemonade and p is the price per glass. Her marginal cost is $MC = q$ and her fixed cost is 2.

    (a) Make a table with Katerina's FC, MC, AC, TC, p and profit for quantities from 1 to 15.

    (b) How many glasses of lemonade should Katerina produce to maximize her profit?

    (c) How much should Katerina charge per glass in order to maximize her profit?

    (d) How much is the maximum profit that Katerina will make?

    (e) How many whole glasses of lemonade would Katerina produce if she acted as a PC firm?

    (f) How much would she charge if she acted as a PC firm?

    (g) How much S-R profit would she make if she acted as a PC firm?

5. Consider the market of a PC good with a vertical market demand.

    (a) Explain the economic meaning of a vertical demand curve.

    (b) A tax per unit is imposed on the good. Explain who will end up paying the burden of the tax.

6. Calculate VC for $q = 500$ if $MC = 2q$.

7. Explain how *lobbying* can increase the social cost of monopolies if it is used for rent-seeking.

8. Explain how *advertisement* can increase the social cost of monopolies if it is used for rent-seeking.

9. Explain how *building excess capacity* can increase the social cost of monopolies if it is used for rent-seeking.

10. [*Optional – requires advanced mathematical skill*] A seller faces demand $p = 10 - q$.

    (a) Calculate the marginal revenue of the 3rd unit by subtracting the revenue for 2 units from the revenue for 3 units.

    (b) Calculate the marginal revenue for the 3rd unit using the "double gradient" rule.

    (c) Why do the two methods yield different marginal revenues?

You are kindly requested to report any *typos, mistakes* or *proposals* for the improvement of this practice set key at kmarinakis@smu.edu.sg.