Theory of the Firm, Fall 2016

Problem Set 1

Rules: (1) Submission deadline is **September 26th at 9:00** in class or by e-mail (only typed solutions by e-mail). (2) Feel free to consult with your colleagues and any materials, but submit solutions that your own solutions. Have fun!

Problem 1.1
Monopolist's marginal cost is constant c (cost function $C(q) = cq$) and it faces linear demand $D(p) = a - bp$.

1) State monopolist's maximization problem.

2) Find profit maximizing price, quantity, and compute maximized profit.

3) What would be price and quantity in perfectly competitive market?

4) Prove that under monopoly, monopolist's profit is half and dead-weight loss is one quarter of the total surplus that would be achievable under perfect competition.

5) Draw a figure (as precisely as possible) where you show: demand function, marginal cost function, monopoly and competitive quantities, monopoly profit and welfare loss.

Problem 1.2
Exercise 1.2* (page 67)[1].

Problem 1.3
Exercise 1.5* (page 71).

Problem 1.4
Exercise 1.9*** (page 84).

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[1]All references are to Tirole's book "The Theory of Industrial Organization".