2 Price Regulation

Practice Question 3. Suppose a firm has a cost curve equal to

$$C = 600 + 10Q$$

Then the marginal cost is $MC = 10$ and the average cost is $AC = 600/Q + 10$. Suppose the inverse demand curve is given by

$$p = 400 - 5Q$$

(a) If regulators set the price equal to the marginal cost, what would be the firm's loss?

(b) If regulators set the price equal to the average cost, what would be the price? What would be the deadweight loss associated with average cost price regulation?

Practice Question 4. The inverse demand curve a monopoly faces is $p = 30 - Q$. The firm's total cost function is $C(Q) = 0.5Q^2$ and thus marginal cost function is $MC(Q) = Q$.

(a) Determine the monopoly quantity, price and profit, and calculate the CS, PS and social welfare under the monopoly.

(b) Determine the socially optimal outcome and calculate the CS, PS and social welfare under the social optimum.

(c) Calculate the deadweight loss due to the monopolist behaviour of this firm.

(d) Assume that the government puts a price ceiling on the monopolist at $P = 18$. Determine and plot the demand and marginal revenue function of the monopoly under this regulation. How much output will the monopolist produce? What will be the profit of the monopolist? Determine the impact of this price ceiling on the deadweight loss.

(e) Assume that the government put a price ceiling on the monopolist in order to maximize the total (i.e. consumer plus producer) surplus. What price ceiling should it choose? How much output will the monopolist produce at this price ceiling? What will the profit of the monopolist be? What is the DWL?