



# B.E. International Program

Faculty of Economics, Thammasat University



EE 211 Principle of Microeconomics (Semester 1/2020)

## Quiz 6

Suppose the market demand is given by  $P = 28 - 2Q$ , and the “MAX” company is the only producer in the market. Suppose further that both marginal cost (MC) and average cost (AC) are constant, and both are equal to 4.

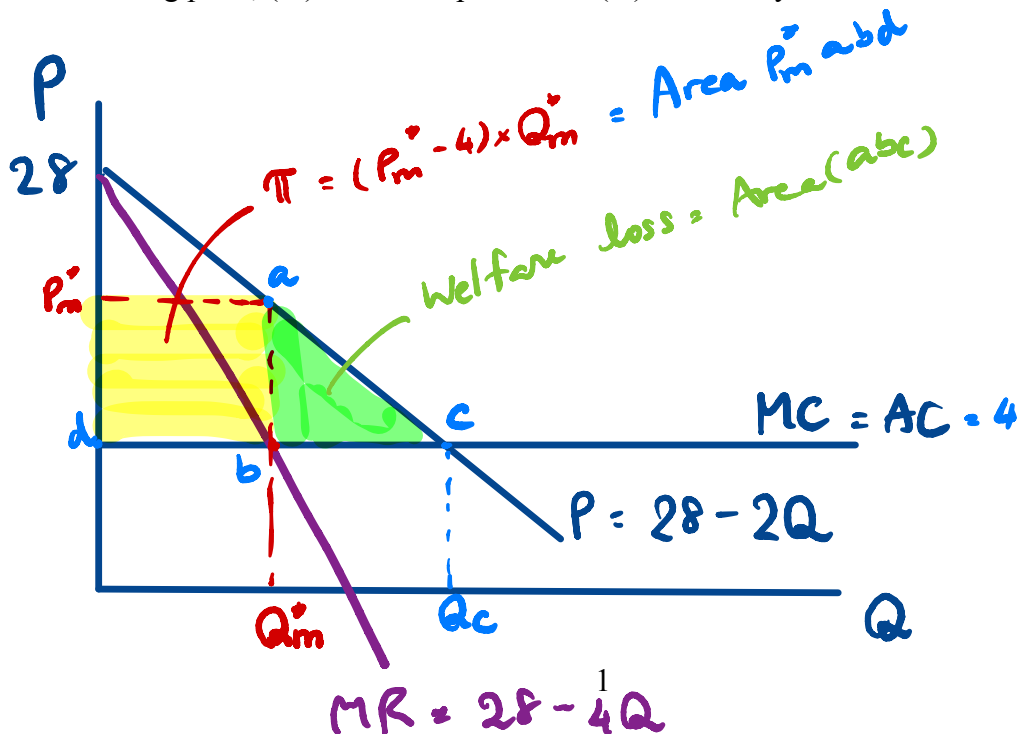
- (6 points) Derive the total revenue (TR), marginal revenue (MR), and average revenue (AR) functions.

$$TR = (28 - 2Q) \times Q = 28Q - 2Q^2$$

$$AR = 28 - 2Q$$

$$MR = 28 - 4Q$$

- (4 points) Draw a diagram to illustrate the profit-maximizing price and quantity for “MAX”. Make sure that you identify in the diagram: (i) profit-maximizing quantity, (ii) profit-maximizing price, (iii) the firm’s profit, and (iv) the society’s welfare loss.



$$\text{At } Q_c, P = MC \Rightarrow P_c^* = 4 \Rightarrow 4 = 28 - 2Q_c^* \\ Q_c^* = \frac{24}{2} = 12 \text{ units.}$$

3. (8 points) Calculate the followings: (i) profit-maximizing quantity, (ii) profit-maximizing price, (iii) the firm's profit, and (iv) the society's welfare loss.

$$\pi\text{-max cond}^n: MR = MC$$

$$\Rightarrow 28 - 4Q_m^* = 4$$

$$24 = 4Q_m^*$$

$$\therefore Q_m^* = 6 \text{ units.}$$

$$P_m^* = 28 - 2(6) = 16 \text{ dollars.}$$

$$\pi_m^* = (P_m^* - 4) \times Q_m^* = (16 - 4) \times 6 = \$72$$

$$\text{welfare loss} = \frac{1}{2} \times (P_m^* - 4) \times (Q_c^* - Q_m^*) = \frac{1}{2} \times 12 \times 6 = \$36$$

4. (2 points) If the government would like to eliminate the welfare loss from this monopoly power, what intervention should be used? Discuss briefly.

Set the price equals to 4.

In this case, ideal price = fair price.