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date

No.

隨堂6. 設獨占廠商所面對的需求函數  $P=120-Q$ , 成本函數為  $TC=2Q^2$

(A) 求均衡下的價格、產量、利潤、需求彈性與獨占力

$$Max \pi = TR - TC$$

$$MC = 4Q$$

$$MR = MC$$

$$MR = 120 - 2Q$$

$$TR = 120Q - Q^2$$

$$4Q = 120 - 2Q$$

$$6Q = 120$$

$$Q^* = 20$$

$$P = 120 - Q \quad P^* = 100$$

$$\pi^* = 100 \times 20 - 2(20)^2$$

$$= 2000 - 800 = 1200$$

$$A: P^* = 100, Q^* = 20, \pi^* = 1200$$

$$\text{獨占力} = \frac{1}{5} \quad \varepsilon^d = 5$$

(B) 求獨占力的無謂損失

$$MC = MR = 4Q = 120 - 2Q$$

$$6Q = 120 \quad Q^* = 20$$

$$MC = 4Q$$

$$MC = 80$$

$$P^* = 120 - 20 = 100$$

$$\text{無謂損失} = (24 - 20)(100 - 80) \frac{1}{2}$$

$$= 40$$

$$P = MC = 4Q = 120 - 2Q \quad Q^* = 24$$

$$A: \text{無謂損失} = 40$$

(C) 若政府按 MC 訂價法來管制, 均衡下價格、產量、利潤及無謂損失為多少?

損失為多少?

$$P = MC$$

無謂損失

$$= 1152$$

$$120 - Q = 4Q \quad Q^* = 24 \quad P^* = 96$$

$$TS = 120 \times 24 \times \frac{1}{2} = 1440$$

$$A: P^* = 96, Q^* = 24, \pi^* = 1152 \quad \text{無謂損失為 } 0$$

(D) 若政府按 AC 訂價法來管制, 均衡下價格、產量、利潤及無謂損失為多少?

$$P = AC = 2Q$$

$$P = 120 - Q = 2Q$$

$$6Q = 120$$

$$Q^* = 40$$

$$P^* = 80$$

$$\pi^* = (80 \times 40) - 2(40)^2$$

$$= 3200 - 3200$$

$$= 0$$

$$TS = CS + PS = CS + \pi = CS + 0$$

$$\text{無謂損失} = 1440 - 800 = 640$$

$$A: P^* = 80, Q^* = 40, \pi^* = 0 \quad \text{無謂損失} = 640$$

(E) 若政府對廠商高課以 10% 的從價稅率, 求稅後均衡價格、產量及利潤

$$(1 - 10\%)MR = MC$$

$$0.9 \times (100 - 2Q) = 4Q \Rightarrow Q^* = \frac{350}{9} \xrightarrow{\text{代入}} P = 100 - Q$$

$$\pi^* = \left( \frac{350}{9} \times \frac{500}{9} \times 0.9 \right) - 30 - \left( 20 \times \frac{350}{9} \right) = 1331 \quad A: P^* = \frac{550}{9} \quad Q^* = \frac{350}{9} \quad \pi^* = 1331$$