

$$1. P = 100 - Q^*, C = 30 + 20Q^*$$

(A) 均衡價格, 產量, 利潤?

$$\text{Max } \pi = TR - TC$$

$$MR = MC$$

$$TR = P \cdot Q = (100 - Q) \cdot Q = 100Q - Q^2$$

$$MR = \frac{dTR}{dQ} = 100 - 2Q$$

$$TC = 30 + 20Q$$

$$MC = 20$$

$$100 - 2Q = 20 \quad P^* = 100 - 40 = 60$$

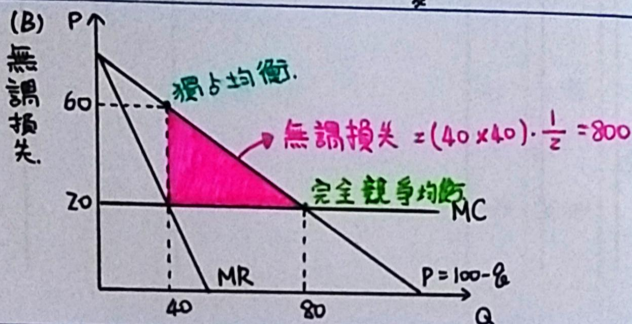
$$2Q = 80$$

$$Q^* = 40$$

$$\pi^* = P(Q) \cdot Q - TC$$

$$= (40 \times 60) - (30 + 20 \times 40)$$

$$= 1570$$



(C) 獨占力

$$L = \frac{P - MC}{P} = \frac{60 - 20}{60} = \frac{2}{3}$$

$$(D) MR = MC + 10$$

$$100 - 2Q = 20 + 10$$

$$Q^* = 35, P^* = 65$$

$$\pi^* = (35 \times 65) - (30 + 20 \times 35) = 1545$$

$$(E) MR = (1 + 10\%) \cdot MC \Rightarrow (1 - 10\%)MR = MC$$

$$100 - 2Q = 0.9 \times 20$$

$$Q^* = 41, P^* = 59$$

$$\pi^* = (41 \times 59) - (30 + 20 \times 41) = 1569$$

(F) 定額稅不影響 MC

$$(G) \text{Max } \pi^* = (1 - 20\%) \pi = (1 - 20\%) (TR - TC)$$

$$\Rightarrow 0.8MR = 0.8MC \Rightarrow MR = MC$$

$$(H) P = MC \Rightarrow 100 - Q = 20 \Rightarrow Q^* = 80, P^* = 20$$

$$\Rightarrow \text{故虧損} : (80 \times 20) - (30 + 20 \times 80) = -30$$

$$\Rightarrow \text{無謂損失} : 0$$