Week14

3. 需求函數 = $P_A = 100 - q_A$ $P_B = 80 - q_B$

成本函數 = $TC = 20q$

(A) $MR_A = MC = 100 - 2q_A = 20$ $\begin{cases} q_A = 40 \\ q_B = 30 \end{cases}$ $\begin{cases} P_A = 60 \\ P_B = 50 \end{cases}$

$MR_B = MC = 80 - 2q_B = 20$

$\pi = 60 \times 40 + 50 \times 30 - 20(40 + 30) = 2500 = PS$ 用

$TS = 1250 + 2500 = 3750$

$CS = CS_A + CS_B = 800 + 450 = 1250$

(B) 若無法區分這 2 類 消費者, 決定定相同 price, 求廠商 訂價 、利潤、消費者剩餘、總剩餘

$Q = q_A - q_B = 180 - 2P$ $\pi = TR - TC$ $\pi^* = 55 \times 70 - 20 \times 70$

$\begin{cases} P = 100 - q_A \\ P = 80 - q_B \end{cases}$ $= P(Q) \cdot Q - T(Q)$ $= 2450$

$= 190 - 0.5Q - 20Q$ $CS_A = 1012.5$

$Q^* = 70$ $P^* = 55$ $CS_B = 312.5$

(C) 兩段式 訂價

$F = (80 - P) \times \dfrac{80 - P}{2}$ $CS = CS_A + CS_B - 2F$

$\pi = 2F + (P - 20)(q_A + q_B)$ $= 1200$

$= -P^2 + 60P + 2800$ $TS = 1200 + 3700 = 4900$

$P = 30$ $F = 1250$ $q = 120$ $\pi = 3700$

× 7.5 + 45 × (15-7.5) + 37.5(22.5-15) = 337.5

4.576 + 337.5 = 421.875   DWL = 450-421.875 = 28.125

Week 15

1. (A)

$60 - 2q = 30$ $\begin{bmatrix} P = 45 \\ q = 15 \end{bmatrix}$ $\pi = 45 \times 15 - 30 \times 15 = 225 = PS$

(B)

$60 - q = 30$ $q = 30$ $CS = 0$

$\pi = \dfrac{30 \times 30}{2} = 450$ $TS = 0 + 450 = 450$ $DWL = 0$