3. 假設三六九樂園為台灣唯一的樂園，有A、B二類消費群。

需求函數分別為：$P_A = 100 - q_A$　$P_B = 80 - q_B$

成本函數：$TC = 20q$

(A) $MR_A = 100 - 2q_A$

$MR_B = 80 - 2q_B$

$MC = 20$.

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

$= 2500 = PS$

$TS = 1250 + 2500 = 3750$

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

(B) 若無法區分這二類消費者，決定相同 price，求廠商訂價、利潤、消費者剩餘、總剩餘

$Q = q_A + q_B = 180 - 2P$

$\begin{cases} P = 100 - q_A \\ P = 80 - q_B \end{cases}$

$\pi = TR - TC$

$= P(Q) \cdot Q - T(Q)$

$= 190 - 0.5Q - 20Q$

$Q^* = 70$、$P^* = 55$

$\pi^* = 55 \times 70 - 20 \times 70$

$= 2450$

$CS_A = 1012.5$

$CS_B = 312.5$

(C) 採兩段式訂價

$T = (80 - P) \times \frac{80-P}{2}$

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

$= -P^2 + 60P + 2800$

$P = 30$、$T = 1250$、$q = 120$　$\pi = 3700$

$CS = CS_A + CS_B - 2T$

$= 1200$.

$TS = 1200 + 3700 = 4900$