

Week 14

(A) ~~MR_A~~ $100 - 2q_A = 20$

$80 - 2q_B = 20$

$q_A = 40$

$p_A = 60$

$60 \times 40 + 50 \times 30 - 20(40 + 30) = 2500 \text{ (PS)}$

$CS = 800 + 450 = 1250$

$q_B = 30 \quad p_B = 50$

$TS = PS + CS = 3750$

(B)

$p = 100 - q, q \leq 20$ $MR_1: 100 - 2q, q \leq 20$

$= 90 - 1.5q, q > 20$

$MR_2 = 20 - q, q > 20$

$100 - 2q = 20 \quad q = 40$

$55 \times 70 - 20 \times 70 = 2450 = PS$

$80 - q = 20 \quad q = 60 \quad p = 55$

$CS = 1012.5 + 312.5 = 1325$

$TS = 3775$

(C) $(80 - p)^2 / 2$

$\pi = 2F + (p - 20)(q_A + q_B) = (80 - p)^2 + (p - 20)(180 - 2p)$

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

$-2p + 60 = 0 \quad p = 30 \quad F = 1250 \quad q = 120 \quad \pi = 3700$

$CS_A + CS_B - 2F = 2450 + 1250 - 2500 = 1200$

$TS = 3700 + 1200 = 4900$