week12

4. (A) $MR = 160 - 4q = 20 = MC \rightarrow q = 40$, $P = 60$ $MC = \frac{60-20}{60} = \frac{2}{3}$

$\pi = (40 \times 60) - (30 + 20 \times 4) = 1570$

(B) $\frac{1}{2} \times 40 \times 40 = 800$, (C) $(60-20)/60 = \frac{2}{3}$

(D) $\begin{cases} MR = MC + 10 \\ 100 - 2q = 30, \ q = 35, \ P = 65 \end{cases}$

$\pi = (35 \times 65) - (30 + 20 \times 35) - 10 \times 35 = 1125$

(E) (1-10%) $MR = MC$ $0.9(100 - 2q) = 20$ $q = \frac{550}{4}$ $P = 350$

(F) $1570 - 1000 = 570$

(G) $0.8 \times 1570 = 1256$

(H) $(80 \times 20) - (30 + 20 \times 80) = 30 \Rightarrow 0$ (無謂損失)

5. $MR = P[1 - \frac{1}{E_d}] = MC[1 - \frac{1}{E_d}]$ $E_d = \frac{4}{3}$

6. $P = a - bq$ $MR = a - 2bq$

$MR = MC + t \leftrightarrow a - 2bq = k + t$ $q = \frac{a-(k+t)}{2b}$

$P = \frac{a+k+t}{2}$ $P_0 = \frac{a+b}{2}$, $P^* - P_0 = OP = \frac{t}{2}$

7. $MC_A = MC_B = MR$

$4q_A = 8q_B = 80 - 2q_A - 2q_B$ $q_A = 40$

$q_B = 20$ $P = 120$