4.

(A) $MR = 100 - 2q = 20 = MC \Rightarrow q = 40 \quad P = 60 \quad ML = \dfrac{60-20}{60} = \dfrac{2}{3}$

(B) $\dfrac{1}{2} \times 40 \times 40 = 800$

(C) $\dfrac{(60-20)}{60} = \dfrac{2}{3}$

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

$TU = (35\sqrt{35}) - (30 + 20 \times 35) - 10 \times 35 = 1195$

(E) $(1-10\%) MR = MC \quad 0.9(100 - 2q) = 20 \quad q = \dfrac{150}{9} \quad P = \dfrac{130}{3}$

(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. $MR = P \left[1 - \dfrac{1}{60} \right]$
$= 4MC \left[1 - \dfrac{1}{Ed} \right] \quad Ed = \dfrac{k}{3}$

6. $P = a - bq \quad MR = a - 2bq$
$MR = MC + t \iff a - 2bq = k + t \quad q = \dfrac{a - (k+t)}{2b}$
$P = \dfrac{a + k + t}{2} \quad P_0 = \dfrac{a + k}{2} \quad P^* - P_0 = \Delta P = \dfrac{t}{2}$

7. $MC_A = MC_B = MR$
$q_A = 8 \quad qP = 280 - 2q_A - 2q_B \quad q_A = 0 \quad q_B = 20$
$P = 220$