4.

(A)

$MR = 100 - 2q = 20 = MC \Rightarrow q^* = 40 \quad p^* = 60, \quad M_L = \frac{60-20}{60} = \frac{2}{3}$

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

(B)

無謂損失 $= \frac{1}{2} \times (40 \times 40) = 800$

(C) 獨立力 $= \frac{P-MC}{P} = \frac{60-20}{60} = \frac{2}{3}$

(D)

$MR = MC + 10$

$100 - 2q = 30 \Rightarrow q^* = 35 \quad p^* = 65$

$\pi = (35 \times 65) - (30 + 20 \times 35) - (10 \times 35) = 1195$

(E) $(1 - 10\%) MR = MC \Leftrightarrow 0.9(100 - 2q) = 20$

(F) $q^* = 40, \quad p^* = 60, \quad \pi^* = 1570 - 1000 = 570$

(G) 稅後利潤 $= (0.8 \times$ 稅前利潤$) = (0.8 \times 1570) = 1256$

(H) $P = MC \Leftrightarrow 100 - 2q = 20 \Leftrightarrow q^* = 80, \quad p^* = 20$

故虧損 $= (80 \times 20) - (30 + 20 \times 80) = -30$

無謂損失

5.

$MR = P(1 - \frac{1}{E_d})$ (恒成立)

$MR = 4MC(1 - \frac{1}{E_d})$

$E_d = \frac{4}{3}$

6.

$MR = MC + t \Rightarrow a - 2bq = k + t$

$q^* = \frac{a-(k+t)}{2b}$

$p^* = a - \frac{a-(k+t)}{2}$

$t = 0$, 表原均衡狀態

$p_0 = \frac{a+k}{2}, \quad p^* - p_0 = \Delta P = \frac{t}{2}$

7.

令 $MC_A = MC_B = MR$,

$4q_A = 8q_B = 280 - 2q_A - 2q_A$

$q_A = 40 \quad q_B = 20$

$P = 220$