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) $\frac{1}{2} \times 40 \times 40 = 800$

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

(D) $MR = MC + 10$

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

(E) $(1-10\%)MR = MC \Rightarrow 0.9(100-2q) = 20 \quad P^* = \frac{150}{9}$

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

(G) $q^* = 40 \quad P^* = 60$ 社会福利 $= 0.8 \times 1570 = 1256$

(H) $P = MC \Leftrightarrow 100 - 2q = 20 \Leftrightarrow q^* = 80 \quad P^* = 20$ 虧損：$80 \times 20 - (30 + 20 \times 80) = -30$

無謂損失 $= 0$

5.

$MR = (1 - \frac{1}{E_d}) \times P \Leftrightarrow MR = 4MC(1 - \frac{1}{E_d}) \Leftrightarrow MC = 4MC(1 - \frac{1}{E_d}) \Leftrightarrow E_d = \frac{4}{3}$

6. Yes, 設 $P = a - bq$，則 $MR = a - 2bq$，$MR = MC + t \Leftrightarrow a - 2bq = k + t \Leftrightarrow q^* = \frac{a-(k+t)}{2b}$

代回需求函數 $\Rightarrow P^* = a - \frac{a-(k+t)}{2} = \frac{a+(k+t)}{2}$

當 $t = 0 \Rightarrow P_0 = \frac{a+k}{2}$，$P^* - P_0 = \Delta P = \frac{1}{2}$

7. 令 $MC_A = MC_B = MR$，$4q_A = 8q_B = 280 - 2q_A - 2q_B$

$\Rightarrow q_A = 40$，$q_B = 20 \Rightarrow P = 220$