4.

(A) $MR = 100 - 2q = 20 = MC \Rightarrow q^* = 40, P^* = 60$

$ML = \frac{60-20}{60} = \frac{2}{3}$ $\pi^* = (40 \times 60) - (30 + 20 \times 40) = 1570$

(B) 由上圖可知，無謂損失 $= \frac{1}{2}(40 \times 40) = 800$

(C) 獨占力 $= \frac{P-MC}{P} = \frac{60-20}{60} = \frac{2}{3}$
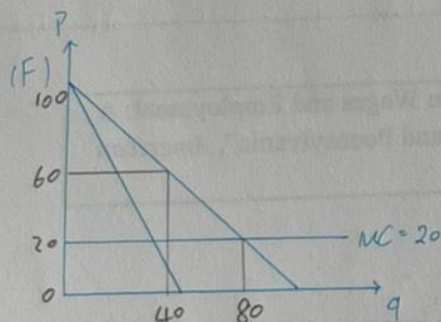
(D) $MR = MC + 10$

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

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

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

$q^* = 40$ $P^* = 60$

(F)

$q^* = 40$ $P^* = 60$

利潤則減少稅額

$\pi^* = 1570 - 1000 = 570$

(G) 利潤稅對產出、價格均無影響

$q^* = 40$, $P^* = 60$

稅後利潤 $= (0.8 \times$ 稅前利潤$) = (0.8 \times 1570) = 1.256$

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

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

無謂損失 $= 0$

5.

$MR = P(1 - \frac{1}{E})$ →恆成立

$\Leftrightarrow MR = 4MC(1 - \frac{1}{Ed})$ →已知條件

$\Leftrightarrow MC = 4MC(1 - \frac{1}{Ed})$ →均衡條件

$\Leftrightarrow Ed = \frac{4}{3}$

6. 對，設 $P = a - bq$，則 $MR = a - 2bq$　　稅後利潤極大 16

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

代回需求函數

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

當 $t = 0$

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

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

得 $q_A = 40$, $q_B = 20$

$P = 220$