Week 12

4.

(A)

$MR = 100 - 2q = 20 = MC$

$\Rightarrow q^* = 40 \quad P^* = 60 \quad ML = \frac{60-20}{60} = \frac{2}{3}$

(B)

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

(C)

$\frac{P-MC}{P} = \frac{60-20}{60} = \frac{2}{3}$

(D)

$MR = MC + 10$

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

$\pi = (35 \times 65) - (30 + 20 \times 35) - (10 \times 35) = 1,195$

(E)

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

(F)

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

利潤則減少稅額部份，故 $\pi^* = 1,570 - 1080 = 570$

(G)

利潤稅對產出、價格均無影響，故

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

稅後利潤 $= (0.8 \times$ 稅前利潤$) = (0.8 \times 1,570) = 1,256$

(H)

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

虧損 $= -30$

5.

$MR = P\left[1 - \frac{1}{Ed}\right]$

$\Leftrightarrow MR = 4MC\left[1 - \frac{1}{Ed}\right]$

$\Leftrightarrow MC = 4MC\left[1 - \frac{1}{Ed}\right]$

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

6.

對。設 $P = a - bq$，則 $MR = a - 2bq$

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

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

當 $t = 0$

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

7.

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

聯立解出 $q_A = 40$，$q_B = 20$

代回需求函數解得 $P = 120$