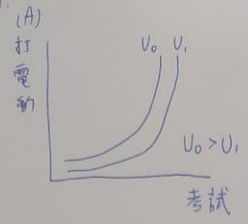
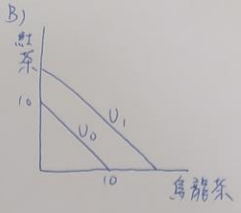
A108260069
黃郁雯

1	D
2	A
3	D
4	A
5	B
6	D
7	A
8	C
9	A
10	B
11	C
12	B
13	D
14	C
15	B
16	A

1. (A)



(B)



效用函數 $U = X + Y$

2. (1)

$$\begin{cases} \frac{\frac{1}{3}X^{-\frac{2}{3}}Y^{\frac{2}{3}}}{\frac{2}{3}X^{\frac{1}{3}}Y^{-\frac{1}{3}}} = \frac{20}{10} \rightarrow \frac{Y}{2X} = \frac{2}{1} \quad 4X = Y \\ 20X + 10Y = 300 \end{cases}$$

$X = 5 \quad Y = 20$

(2)

$$\begin{cases} f(X,Y) = X + 3Y \\ 20X + 10Y = 300 \end{cases}$$

$MRS_{XY} = \frac{1}{3} < \frac{20}{10} = 2$

$X = 3$

(3)

$f(X,Y) = \min(X,Y)$

$20X + 10Y = 300$

$X = 2Y$

$5X = 10Y$

$25X = 300$

$X = 12 \quad Y = 6$

3.

$U = X^{\frac{1}{3}}Y^{\frac{2}{3}} = 5^{\frac{1}{3}}20^{\frac{2}{3}}$

$= 2000^{\frac{1}{3}}$

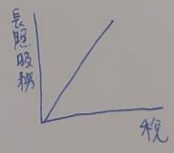
$Y = 2X$ 代入

$U = X^{\frac{1}{3}}2X^{\frac{2}{3}} = (4X^3)^{\frac{1}{3}} = 6000^{\frac{1}{3}}$

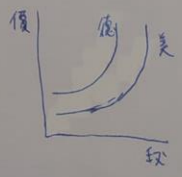
$X = 500^{\frac{1}{3}} \quad Y = 1000^{\frac{1}{3}}$

挑戰

(1) 可以有效抑制貧富差距，也能增加社會福利



(2) 電子書價格的差異，讓德國和美國普及



4. ① $\frac{Y}{2X} = \frac{2}{1} \quad Y = 4X$

② $20X + 10Y = M$

$60X = M$

$X = \frac{M}{60}$

③

④

$$\begin{cases} f(X,Y) = X^{\frac{1}{3}}Y^{\frac{2}{3}} \\ P_X X + 10Y = 300 \end{cases}$$

$\frac{Y}{2X} = \frac{P_X}{10} \rightarrow Y = \frac{P_X}{5}X$

$300 = P_X X + 10(\frac{P_X}{5}X) \Rightarrow X = \frac{100}{P_X}$