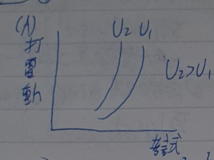
Date / /　　　　M T W T F S S

Content: A1082000 11 廣經

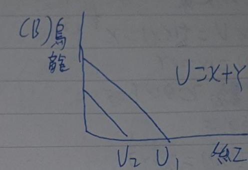
1 D
2 C
3 B
4 A
5 B
6 D
7 A
8 C
9 A
10 D
11 C
2 B
3 D
4 D
5 B
6 A

二 ①

(A)



(B)



②

(1) $MRS_{xy} = \dfrac{\frac{1}{3}x^{-\frac{2}{3}}Y^{\frac{2}{3}}}{\frac{2}{3}x^{\frac{1}{3}}Y^{-\frac{2}{3}}} \Rightarrow \dfrac{Y}{2x} = \dfrac{20}{10} \Rightarrow 4x = Y$

代回得 $20x + 40x = 300$

$x = 5 \quad Y = 20$

(2) $U = f(x,Y) = x + 3Y$

$300 = 20x + 10Y$

由 $MRS_{xy} = \frac{1}{3} < \frac{2}{10}$

$\Rightarrow x = 0, \ Y = 30$

(3) $U = f(x,y) = \min(x, 2Y)$

$300 = 20x + 10Y$

$x = 2Y$ 代入 $\Rightarrow$

$300 = 40Y + 10Y$

$Y = 6 \quad x = 12$

③ (1) $U = f(x,y) = x^{\frac{1}{3}}y^{\frac{2}{3}}$

$300 = 20x + 10y$

$MRS \Rightarrow \frac{10}{10} = \frac{y}{2x} \quad y = 2x \quad x = 10 \quad y = 20$

(2) 原 $\Rightarrow U = x^{\frac{1}{3}}y^{\frac{2}{3}} = 5^{\frac{1}{3}}\, 20^{\frac{2}{3}} = 2000^{\frac{1}{3}}$

價動 $\Rightarrow Y = 2x$ 代入 $\cdot\ 2000^{\frac{1}{3}}$

$\Rightarrow (4x^3)^{\frac{1}{3}} = 2000^{\frac{1}{3}}$

$\Rightarrow x^3 = 500 \quad x = 500^{\frac{1}{3}} \quad Y = 4000^{\frac{1}{3}}$

所得效果

由 $(x,y) = [(500)^{\frac{1}{3}}, (4000)^{\frac{1}{3}}]$ 到 $(10, 20)$

(3) 替代效果

由 $(5, 20)$ 到 $(500^{\frac{1}{3}}, (4000)^{\frac{1}{3}}]$

$\because 500^{\frac{1}{3}} - 5 > 0$