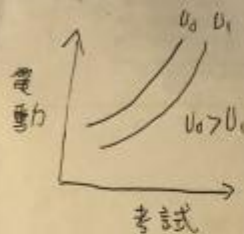


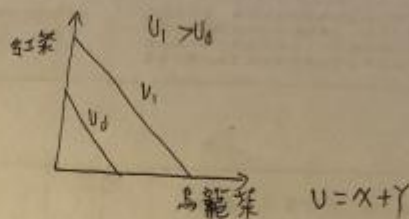
1. 假設期中

1. d 2. b 3. d 4. a 5. b
6. d 7. c 8. c 9. a 10. b
11. c 12. d 13. b 14. c 15. a
16. b

二. 1-a



1-b



計算第四題.

(1) $MRS_{xy} = \frac{2Y}{X} = \frac{20}{10} \quad Y = X$

(2) $20X + 10Y = M \quad 30X = M \quad X = \frac{M}{30}$

(3) $\frac{2Y}{X} = \frac{P_X}{P_Y} \quad Y = \frac{P_X - X}{2}$
(4) $300 = P_X X + 10 \frac{P_X - X}{2} \quad X = \frac{200}{P_X}$

2. (1) $20X + 10Y = 300$
 $U = f(X, Y) = X^{\frac{1}{3}} Y^{\frac{2}{3}}$
 $MRS = \frac{\frac{1}{3} X^{-\frac{2}{3}} Y^{\frac{2}{3}}}{\frac{2}{3} X^{\frac{1}{3}} Y^{-\frac{1}{3}}} = \frac{P_X}{P_Y} = 2$
 $\frac{1}{2} X^{-1} Y = 2 \quad X = 5$
 $Y = 4X \quad Y = 20$

(2) $U = f(X, Y) = 3X + Y$
 $MRS_{xy} = 3 > 2$
 $\Rightarrow Y = 0 \quad X = 15$

(3) $U = f(X, Y) = \min(X + 2Y)$
 $\begin{cases} X = Y \\ 300 = 20X + 10Y \end{cases}$
 $\begin{cases} Y = 15 \\ X = 15 \end{cases}$

3. $20X + 10Y = 300$
 $U = X^{\frac{1}{3}} Y^{\frac{2}{3}}$
 $MRS_{xy} = 2$
 $Y = 4X \quad X = 5 \quad Y = 20$
 $\begin{cases} 10X + 10Y = 300 \\ X = 10 \quad Y = 20 \end{cases}$

(1) $U = X^{\frac{1}{3}} Y^{\frac{2}{3}} = U = 3^{\frac{1}{3}} 20^{\frac{2}{3}} = (2000)^{\frac{1}{3}}$
 $U = X^{\frac{1}{3}} \cdot 2X^{\frac{2}{3}} \cdot (4X)^{\frac{2}{3}} = (2000)^{\frac{1}{3}}$
 $X \approx 11.43 \quad Y = 15.814$
 $X = 500)^{\frac{1}{3}} \quad Y = (4000)^{\frac{1}{3}}$

(2) 替代效果

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

X 的替代效果 = $(500)^{\frac{1}{3}} - 5 > 0$

(3) 所得效果

由 $(500)^{\frac{1}{3}} (4000)^{\frac{1}{3}}$ 到 $(10, 20)$