

LBD-T₂

(1) 求总效果:

$$\begin{cases} U = X^{\frac{2}{3}} Y^{\frac{1}{3}} \\ 300 = 20X + 20Y \\ \frac{Y}{X} = \frac{1}{2} \end{cases} \Rightarrow \begin{cases} X = 10 \\ Y = 5 \end{cases}$$

(2): 变动前 $U_1 = X^{\frac{2}{3}} Y^{\frac{1}{3}} \Rightarrow (20)^{\frac{2}{3}} (5)^{\frac{1}{3}}$
变动后 $U_2 = X^{\frac{2}{3}} Y^{\frac{1}{3}} \Rightarrow X^{\frac{2}{3}} \left(\frac{1}{2}X\right)^{\frac{1}{3}} \Rightarrow$
 $= \left(\frac{1}{2}X^3\right)^{\frac{1}{3}}$

~~$X = 20$ (变动前)~~

$\therefore U = (2000)^{\frac{1}{3}}$

$\Rightarrow X_2 = (4000)^{\frac{1}{3}}$

$Y_2 = (500)^{\frac{1}{3}}$

\therefore 替代效果 = ~~$X_2 - 20$~~
 $= (4000)^{\frac{1}{3}} - 20$

所得效果 = $(500)^{\frac{1}{3}} - 5$

