

$$2. U = x^{\frac{1}{3}} y^{\frac{1}{3}}, 300 = 10x + 20y$$

$$\rightarrow \text{最适量 } x=20, y=5$$

$$300 = 10x + 20y$$

$$\checkmark \text{MRS}_{xy} = \frac{\frac{1}{3}x^{-\frac{2}{3}} y^{\frac{1}{3}}}{\frac{1}{3}x^{\frac{1}{3}} y^{-\frac{2}{3}}} = \frac{y}{x} = \frac{20}{5} = 4$$

$$\rightarrow y = \frac{1}{2}x$$

13)

$$\checkmark \text{最适量} \Rightarrow x=10, y=5$$

$$\checkmark \text{总效用 } x^{\frac{1}{3}} y^{\frac{1}{3}} = (20)^{\frac{1}{3}} (5)^{\frac{1}{3}} = (\frac{1}{2}x)^{\frac{1}{3}}$$

$$= (200)^{\frac{1}{3}}$$

$$\Rightarrow x = (400)^{\frac{1}{3}} \approx 15.874, y = (50)^{\frac{1}{3}}$$

① SE

$$(x, y) = (20, 5) \rightarrow ((400)^{\frac{1}{3}}, (50)^{\frac{1}{3}})$$

x 的替代效果

$$\rightarrow (400)^{\frac{1}{3}} - 20 < 0$$

② 所得效果

$$(x, y) = ((400)^{\frac{1}{3}}, (50)^{\frac{1}{3}}) \rightarrow (10, 5)$$