

# Problem Set 4 Solution

Qiao

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## 19.10

Given  $\lambda > 1$ , we have

$$f(\lambda x, \lambda y) = \lambda^{ab} f(x, y)$$

Therefore, if  $ab > 1$ , the production technology is increasing return to scales;  $ab = 1$  constant return to scales;  $ab < 1$  decreasing.

## 21.1

**b** constant

**c**  $y$

**d**  $\frac{y}{2}$

**e**  $x_1 = 0, x_2 = 10$

**f**  $x_1 = 20, x_2 = 0$

**g**  $\min \{20w_1, 10w_2\}$

**h**  $\min \left\{ w_1 \cdot y, w_2 \cdot \frac{y}{2} \right\}$

## 21.3

**a** -4

**b** 4

**c** 5; 20; 400

**d**  $\frac{y}{8}; \frac{y}{2}; 10y$

**21.7**

**a** 1; 1/2

**b** Talk is cheaper

**c**  $\min \{w_t \cdot h, w_f \cdot \frac{h}{2}\}$

**d** h; 0