

11/26/2021 經濟學  
week 5

3 (A) 技術成本函數 (TCA) = 生產成本 + 租金成本

$$\text{生產成本} = q = \frac{L}{2} = \frac{K}{4} \Rightarrow L = 2K \quad K = 4q \Rightarrow C = 1 \times 2q + 2 \times 4q = 10q$$

$$TCA = 10q + 40 \quad q = \frac{L}{2} = \frac{K}{4} \Rightarrow L = 4q \quad K = 2q \Rightarrow C = 1 \times 4q + 2 \times 2q = 8q$$

$$TCB = 8q + 100$$

(B)  $q = 20$   $TCA = 240$   $TCB = 260$  故應買 A 技術 因令  $TCA < TCB$  則  $q < 30$

(C)  $q = 40$   $TCA = 440$   $TCB = 420$  故應買 B 技術 買 A 技術

4 生產函數  $q = 70L^{0.5}K^{0.5}$  且  $w = r = 10$

$$(A) \Rightarrow 0.5 < 0.5 \Rightarrow L \propto \frac{q^2}{100K} \quad STC = 10L + 10K = \frac{q^2}{10K} + 10K \quad AC = \frac{q}{10K} + 10 \quad MC = \frac{q}{5K}$$

$$(B) \frac{\partial STC}{\partial K} = \frac{-q^2}{10K^2} + 10 = 0 \Rightarrow K^2 = \frac{q^2}{10} \quad \text{代入 } STC$$

$$TC = STC(K, \bar{K}) = \frac{q^2}{10 \times \frac{q}{10}} + 10 \times \frac{q}{10} = q + q = 2q$$