

9.

(A) 技術A

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

$$TC_A = 10q + 40$$

B技術

$$q = \frac{L}{4} = \frac{k}{2} \Rightarrow L = 4q, k = 2q \Rightarrow C = 1 \times 4q + 2 \times 2q = 8q$$

$$TC_B = 8q + 100$$

(B)

$$q = 20, TC_A = 240, TC_B = 260, \text{選A技術}$$

(C)

$$q = 40, TC_A = 440, TC_B = 420, \text{選B技術}$$

(D)

$$\text{令 } TC_A < TC_B \text{ 則 } q < 30, \text{產量低於30, 選A技術}$$

11.

$$q = 10L^{0.5}K^{0.5} \Rightarrow L^* = \frac{q^2}{100K}$$

$$STC = 10L^* + 10K = (q^2/10K) + 10K$$

$$AC = (q/10K) + (10K/4), MC = (q/5K)$$

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

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