

隨堂 9

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生產成本: $q = L/2 = K/4 \Rightarrow L =$

$K = 4q \Rightarrow 1 \times 2q + 2 \times 4q =$

$$TC_A = 10q + 40$$

(A) A技術之成本函 $(TC_A) = \text{生產成本} + \text{權利金成本}$

(B) $q=20$ $TC_A=240$, $TC_B=260$ 故應購買A技術

(C) $q=40$ $TC_A=440$, $TC_B=420$, 故應購買B技術

(D) 令 $TC_A < TC_B$, 則 $q < 30$, 即產量低於30單位, 應購買A技術。

隨堂 11.

$$(A) q = 10L^{0.5}K^{0.5} \Rightarrow L^* = q^2/10K$$

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

$$AC = (q/10K) + (10K/q) \cdot MC = (q/5K)$$

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

代入 STC 函數中:

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

隨堂 12.

$$q=20, AC - AVC = AFC = 10 \rightarrow FC = AFC \times q = 10 \times 20 = 200$$

$$q=40, AC - AVC = AFC = FC/q = 200/40 = 5$$

隨堂 13.

$$VC(10) = \int_0^{10} 10q dq = 5q^2 \Big|_0^{10} = 500, TC = VC + FC = 500 + 100 = 600$$