



A 107260100 / 8 支 裝

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技術 A: $q = \min\{L/2, k/4\}$

A $\Rightarrow 40$
B $\Rightarrow 100$

B: $q = \min\{L/4, k/2\}$

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生產成本

$q = L/2 = k/4 \Rightarrow 2L = k, L = q, k = 4q \Rightarrow C = 1 \times 2q + 2 \times 4q = 10q$
 $TC_A = 10q + 100$

B 技術之 $TC_B =$ 生產成本 + 權利金成本

$q = L/4 = k/2 \Rightarrow L = 4q, 2k = 2q \Rightarrow C = 1 \times 4q + 2 \times 2q = 8q$
 $TC_B = 8q + 100$

(2) $q = 20, TC_A = 240, TC_B = 260$, 買 A.

(3) $q = 40, TC_A = 440, TC_B = 420$, 買 B (買小的)

(4) 令 $TC_A < TC_B$, 則 $q < 30$, 產量應低於 30, 買 A.
 $10q + 100 < 8q + 100$
 $2q < 60$
 $q < 30$

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$q = 10L^{0.5} K^{0.5} \quad w=r=10$

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

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

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

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

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

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

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

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