Subject : .... No. : Date : ..../......../........

隨9 A => q = Min $\{\frac{L}{2}, \frac{K}{4}\}$

B => q = Min $\{\frac{L}{4}, \frac{K}{2}\}$, w = 1 , r = 2

\# 總成本 = 生產成本 + 權利金成本

\# 生產成本 = LTC = wL + rK = L + 2K

\# 成本極小化

(A) Ⓐ $q = \frac{L}{2} = \frac{K}{4} \Rightarrow L^* = 2q, K^* = 4q$

$C = 1 \times 2q + 2 \times 4q = 10q$, $LTC_A = 10q + 40$

Ⓑ $q = \frac{L}{4} = \frac{K}{2} \Rightarrow L^* = 4q, K^* = 2q$

$C = 1 \times 4q + 2 \times 2q = 8q$, $LTC_B = 8q + 100$

(B) 生產 20

$q = 20$, $TC_A = 240$, $TC_B = 260$, Ⓐ

(C) 生產 40

$q = 40$, $TC_A = 440$, $TC_B = 420$ Ⓑ

(D) 產量低於?買A.

$TC_A < TC_B$ $10q + 40 < 8q + 100$

$2q = 60$

$q < 30$ #

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隨11. $q = 10L^{\frac{1}{2}}K^{\frac{1}{2}}$, w = r = 10 , K固定K_0

\# $STC = wL + r\bar{K}$

\# 成本極小化

(A) STC, AC, MC

$q = 10L^{\frac{1}{2}}K^{\frac{1}{2}} \Rightarrow L^* = \frac{q^2}{100K_0}$

$STC = 10 \times \frac{q^2}{100K_0} + 10K_0 = \frac{q^2}{10K} + 10K$ #

$SAC = \frac{q}{10K} + \frac{10K}{q}$ #

$SMC = \frac{dSTC}{dq} = \frac{q}{5K}$ #

(B) 反推STC

$\frac{dSTC}{dK} = \frac{-q^2}{10K^2} + 10 = 0 \Rightarrow \bar{K} = \frac{q}{10}$

(找最小，所以做微分)

$STC = q + q = 2q$ #

隨12. q = 20, AC與AVC差10, q = 40, 差?

q = 20 AC = AFC + AVC , AFC = 10

$AFC = \frac{FC}{q} = \frac{r\bar{K}}{q}$; FC = 200

q = 40, AFC' = 5 #

隨13. MC = 10q. FC, 100, q = 10, TC?

TC = FC + VC = 100 + VC

$MC = \frac{dVC}{dq} = 10q$

$VC = \int MC\,dq = \int_0^{10} 10q\,dq = 5q^2 \Big|_0^{10} = 500$

TC = 100 + 500 = 600 #