■ No. ■ Date

4

(A) $q = 10L^{0.5}K^{0.5} \rightarrow L^* = q^2/100k$

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

$AC = (q/10k) + (10k/q)$ $MC = (q/5k)$

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

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

7.

(A) $AFC = FC/q = 50/10 = 5$

(B) $AVC = q^2 - 12q + 1 \rightarrow dAVC/dq = 2q - 12 = 0$ $q = 6$

(C) 根據生產成本的對偶性，知道當 AVC 遞增時 AP_L 遞減

故答案為 $q \geq 6$

(D) $MC = 3q^2 - 24q + 1 \rightarrow dMC/dq = 6q - 24 = 0$ $q = 4$

根據生產與成本的對偶性知道當 MC 遞增時 MP_L 遞減

故答案為 $q \geq 4$