Date NO.

4. 生產函數：$q = 10 L^{0.5} K^{0.5}$，$W = r = 10$

(A) $STC = \frac{q^2}{10k} + 10k$ $\rightarrow L^* = \frac{q^2}{100k}$

$TVC = \frac{q^2}{10k} + \frac{10k}{q}$

$MC = \frac{q}{5k}$

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(B) 由(A)反推總成本函數

$\frac{\partial STC}{\partial k} = \frac{-q^2}{10k^2} + 10 = 0 \Rightarrow \bar{k} = \frac{q}{10}$

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

Week 6.

$STC: q^3 - 12q^2 + q + 50$

Ⓐ AFC(平均固定成本) $= \frac{\overset{FC}{50}}{10\,q} = 5$

Ⓑ $AVC = q^2 - 12q - 1$

$\frac{dAVC}{dq} = 2q - 12 = 0 \rightarrow q = 6$

Ⓒ 生產與成本對偶性 $\Rightarrow$ AVC↑. AP↓

$\Rightarrow q \geq 6$

Ⓓ $MC = 3q^2 - 24q - 1$

$\frac{dMC}{dq} = 6q - 24 = 0 \Rightarrow q = 4$

MC↑. MP↓ $\Rightarrow q \geq 4$