date 3/3.0. No.

4.

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

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

$AC = \left(\frac{q}{10K}\right) + \left(\frac{10K}{q}\right)$

$MC = \left(\frac{q}{5K}\right)$

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

$\bar{K} = \frac{q}{10} \rightarrow$ 代入 $STC \rightarrow TC = STC(K=\bar{K})$

$= \frac{q^2}{10\times(\frac{q}{10})} + 10\frac{q}{10} = q + q = 2q$

7.

(A) $AFC = \frac{FC}{q} = \frac{50}{10} = 5$

(B) $AVC = q^2 - 12q + 1 \rightarrow \frac{dAVC}{dq} = 2q - 12 = 0 \quad q = 6$

(C) $MC = 3q^2 - 24q + 1$

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

根據生產與成本的對偶性，MC遞增時，MP遞減，

故 $q \geq 4$