

Week6 作業

week 6

$$4. (A) q = 10L^{0.5}K^{0.5} \rightarrow L = q^2/100K$$

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

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

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

$$\text{中: } TC = STC(K = \tilde{K}) = \frac{q^2}{10 \times (q/10)} + 10 \frac{q}{10} = q + q = 2q$$

$$7. (A) AFC = FC/q = 50/10 = 5$$

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

(C) 根據生產與成本的對偶性, 知道當 AVC 遞增時, APL 遞減, 故答案為 ≥ 6

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

根據生產與成本的偶性, 知道 MC 遞增時, MP_L 遞減, 故答案為 $q \geq 4$