Week 5 A1072600083 戴佳全

3. (A) $q = \frac{L}{2} = \frac{K}{4} \Rightarrow L = 2q$

$K = 4q$　$C = 1 \times 2q + 2 \times 4q = 10q$

$TC_A = 10q + 40$

(B) $q = \frac{L}{4} = \frac{K}{2}$　$L = 4q$

$K = 2q$　$C = 1 \times 4q + 2 \times 2q = 8q$

$TC_B = 8q + 100$

(B) $q = 20$　$TC_A = 240$　$TC_B = 260 \Rightarrow A$

(C) $q = 40$　$TC_A = 440$　$TC_B = 420 \Rightarrow B$

(D)

$TC_A < TC_B \Rightarrow q < 30$　√

4.

$q = 10L^{0.5}K^{0.5}$

(A)

$\rightarrow L = \frac{q^2}{100K}$

$STC = \frac{q^2}{100K} + 10K$ (短期成本函数

$AC = \frac{STC}{q} = \frac{q}{100K} + \frac{10K}{q}$　$MC = \frac{q}{5K}$ (微q)

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

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