Week 6.

(4) 给力公司 生产函数 $q = 10L^{0.5}K^{0.5}$ 且 $w=r=10$. 但 K 投入固定为 K_0.

(A) 求 STC, VC, MC.

$q = 10L^{0.5}K^{0.5} \Rightarrow L^* = \frac{q^2}{10K}$.

$STC = 10L^* + 10K = \frac{q^2}{10K} + 10K$.

$AC = q/10K + 10K/q$, $MC = q/5K$.

(B). 由(A)反推 TC.

$\frac{\partial STC}{\partial K} = \frac{-q^2}{10K^2} + 10 = 0$ $K = \frac{q}{10}$ 代入 STC.

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

(7). $TC = q^3 - 12q^2 + q + 50$.

(A) $q=10$ 的 AFC.

$AFC = \frac{50}{10} = 5. = \frac{FC}{q}$.

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

(C). 根据生产与成本对偶性.

当 AVC 递增, AP_L 递减, ans $\Rightarrow q \geq 6$.

(D). $MC = 3q^2 - 24q + 1 \Rightarrow \frac{dMC}{dq} = 6q - 24 = 0 \Rightarrow q = 4$

根据生产与成本对偶性. MC 递增时, MP_L 递减, ans 为 $q \geq 4$.

Week6

Q4&Q7