Week 6.

4、 $q = 10L^{0.5}K^{0.5}$ $w = r = 10$, $\bar{K}_0$

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

$STC = 10L^* + 10K = \frac{q^2}{100K} + 10K$

$AC = \frac{q}{10K} + \frac{10K}{q}$

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

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

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

7、 $TC = q^3 - 12q^2 + q + 50$

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

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

(C) $AVC \uparrow \rightarrow AP_L \downarrow$, $q \geq 6$

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

$MC \uparrow \rightarrow MP_L \downarrow$, $q \geq 4$