Week 4

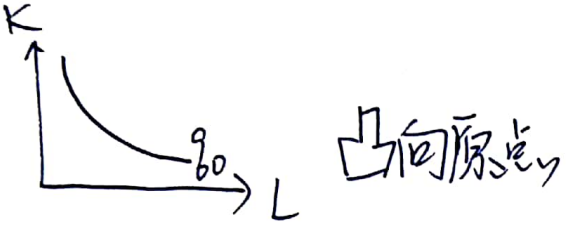
1. (1): $LTC = wk + rk$

$\begin{cases} \text{slope} = -\frac{w}{r} \end{cases}$

$\Rightarrow y = -L + k$

(2): $MRTS = \frac{MP_L}{MP_K} = \frac{10 \times \frac{1}{2} \times L^{-\frac{1}{2}} K^{\frac{1}{2}}}{10 \times \frac{1}{2} \times L^{\frac{1}{2}} \times K^{-\frac{1}{2}}} = \frac{k}{L}$

(3):



凸向原点

(4): $\begin{cases} q = 10L^{0.5}K^{0.5} \\ \frac{MP_L}{MP_K} = \frac{w}{r} \Rightarrow \frac{K}{L} = 1 \end{cases} \Rightarrow K = L \Rightarrow TC = 20L$

(5): ① $TC = wL + rk$

$\Rightarrow TC = 10L + 10k$

② $AC = \frac{TC}{q} = \frac{10L + 10k}{10L^{0.5}K^{0.5}} = \frac{L+k}{L^{0.5}K^{0.5}}$

③ $MC = \frac{dTC}{dq} = 8L^{\frac{1}{2}}K^{\frac{1}{2}}$

(6): $q = 10 \Rightarrow 10L^{0.5}K^{0.5} = w$

$\Rightarrow Lk = 1 \Rightarrow L = \frac{1}{k}$

$\therefore$ 目 $MinC = wL + rk = 10 \times \frac{K}{10} + 10k.$