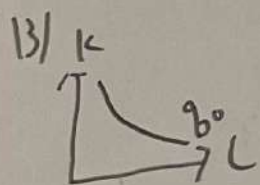


Week 4 A1826 0019

(1) $\begin{cases} LTC = wL + rK \\ \text{slope} = -\frac{w}{r} \end{cases}$
 $\Rightarrow T = -L + K$

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



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

(5) ① $TC = wL + rK$
 $\Rightarrow TC = 10L + 10K$

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

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

(6) $q = 10 \Rightarrow 10 L^{0.5} K^{0.5} = w$
 $\Rightarrow LK = 1 \Rightarrow L = \frac{1}{K}$