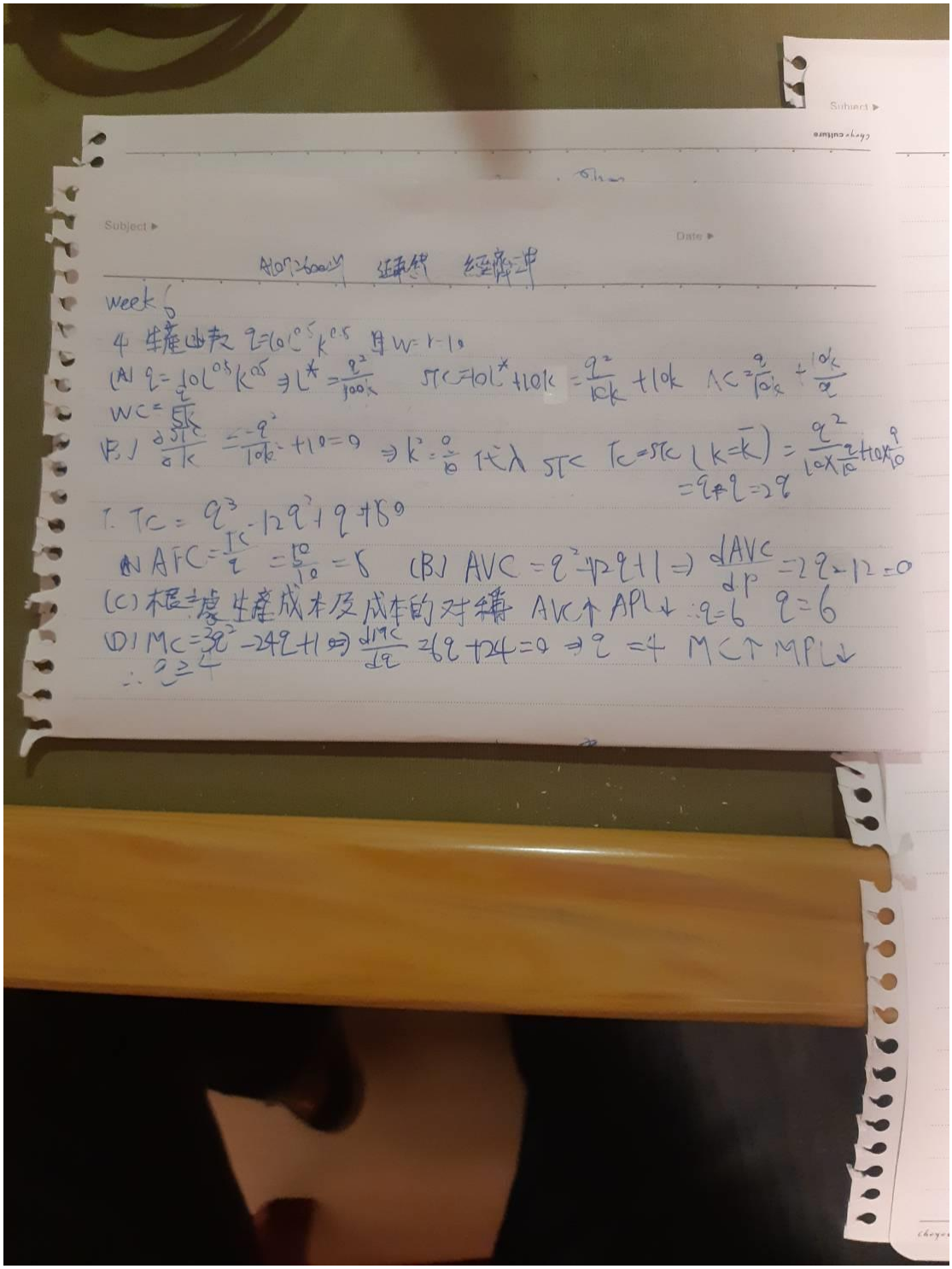

Subject ▸

Date ▸

Week 5

4 生産函数 $Q=10L^{0.5}K^{0.5}$ 且 $w=1$, $r=10$

(A) $Q=10L^{0.5}K^{0.5} \Rightarrow L^*=\frac{Q^2}{100K}$ $STC=10L^*+10K=\frac{Q^2}{10K}+10K$ $AC=\frac{Q}{10K}+\frac{10K}{Q}$

$WC=\frac{STC}{K}$

(B) $\frac{\partial STC}{\partial K}=-\frac{Q^2}{10K^2}+10=0 \Rightarrow K^2=\frac{Q^2}{10}$ 代入 STC $TC=STC(K=\bar{K})=\frac{Q^2}{10\times\frac{Q}{10}}+10\times\frac{Q}{10}$

$=Q+Q=2Q$

7. $TC=Q^3-12Q^2+Q+80$

(A) $AFC=\frac{TC}{Q}=\frac{80}{10}=8$ (B) $AVC=Q^2-12Q+1 \Rightarrow \frac{dAVC}{dQ}=2Q-12=0$

(C) 根据生产成本及成本的对偶 $AVC\uparrow APL\downarrow$ $\therefore Q=6$ $Q=6$

(D) $MC=3Q^2-24Q+1 \Rightarrow \frac{dMC}{dQ}=6Q+24=0 \Rightarrow Q=4$ $MC\uparrow MPL\downarrow$

$\therefore Q\geq 4$