

## Week4 作業

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1. a.  $C = 10L + 10K$

b.  $MRTS_{LK} = K/L$

$MRTS$  = 等產量曲線的切線斜率  $\frac{10 \times \frac{1}{2} L^{-\frac{1}{2}} K^{\frac{1}{2}}}{10 \times L^{\frac{1}{2}} \times \frac{1}{2} \times K^{-\frac{1}{2}}}$

c.  $L \uparrow$  時,  $K \downarrow$  時  $MRTS_{LK}$  下降, 故等產量曲線凸向原點。  
 $\frac{d(K/L)}{d(L)} = -KL^{-2}$

d.  $\begin{cases} \frac{K}{L} = \frac{10}{10} \end{cases}$

$Q = 10L^{0.5}K^{0.5} \Rightarrow L^* = K^* = 0.19$   $MRTS = \frac{K}{L} = \frac{w}{r} = \frac{10}{10}$

e.  $TC = 24, AC = MC = 2$   $LTC = WL^* + rK^* = 10 \times 0.19 + 10 \times 0.19 = 24$

$TC(10) = 2 \times 10 = 20$   $AC = 2, MC = 2$