

# Sp 16 MT 2 Answer Key

① is  $\frac{MP_L}{MP_L} = \frac{w}{r}$  ?

$$\frac{18}{12} = \frac{6}{4} \quad \checkmark$$

hence, the necessary condition is satisfied

②  $q = 100 / P$

$$Pq = 100$$

TR does not change with price (unit elastic demand) and any positive price maximizes revenue

③  $q = L + K$

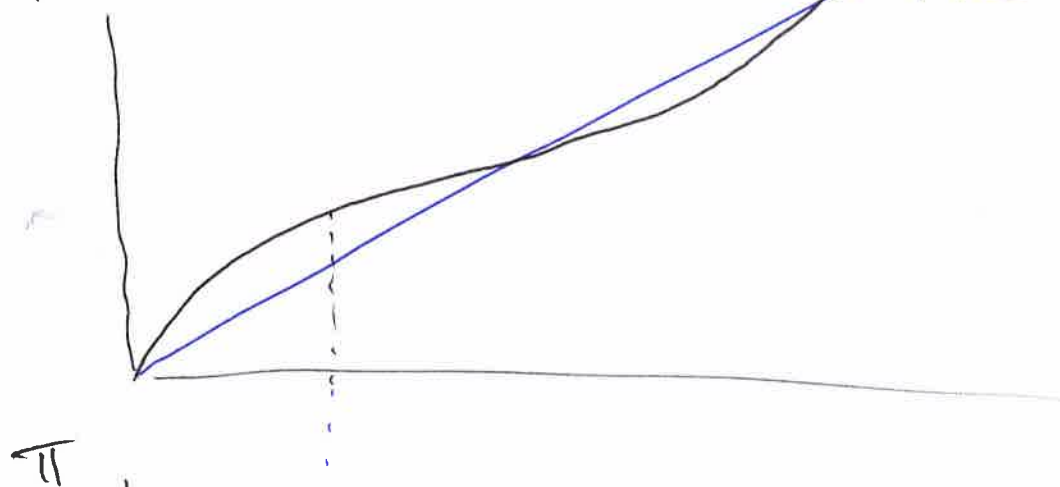
$$q(\lambda L + \lambda K) = \lambda L + \lambda K$$

$$= \lambda(L + K)$$

$$= \lambda q$$

$\Rightarrow$  CRS

④ False, consider the other case where MR=MC (profit max condition)



MR=MC,  
but  
profit  
is min

⑤ with DRS doubling input leads to less than double output. Similarly, halving inputs leads to less than halving outputs, Hence, splitting the firm leaves total costs unchanged, but output rises and hence profit increases

$$\begin{aligned} \text{⑥ } PV &= \frac{30}{1+i} + \frac{30}{(1+i)^2} + \frac{30}{(1+i)^3} + \frac{30}{(1+i)^3} \\ &= 30 + 30 + 30 + 30 \\ &= 120 \\ &> 100 \end{aligned}$$

and hence you should purchase the piece of capital