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ASSIGNMENT 2

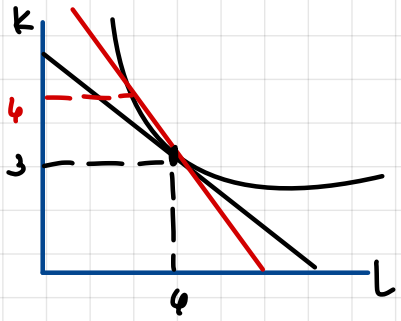
① a) $|MRTS| = \frac{MPL}{MPK} = \frac{6^3}{8_4} = \frac{3}{4}$

cost minimization is occur when MRTs is equal to the slope of isocost $(\frac{w}{r})$ it is a point where isocost tangent with isoquant.

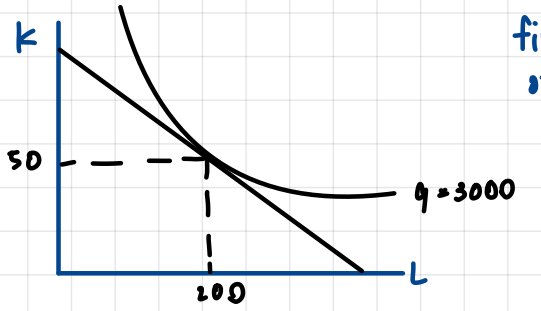
[if $w=3$, $r=?$] $|MRMS_{LK}| = \left|\frac{\Delta K}{\Delta L}\right| = \frac{w}{r}$

$\frac{3}{4} = \frac{3}{4}$ → intercost rate is 4 #

b)



② a)

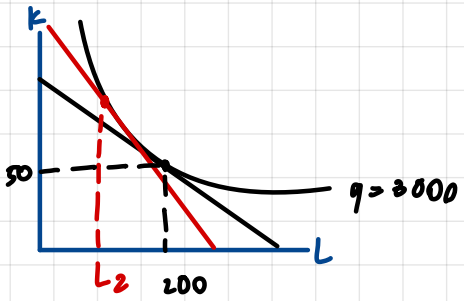


firm minimize cost by utilized all of the factor of production in order to produce

b) marginal product of 200th worker => $3,000 = \frac{MP_L}{8}$

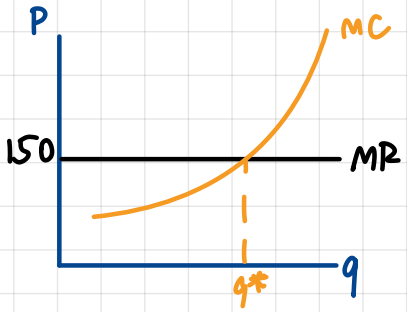
$MP_L = 24,000$ #

c)



d) shot-run and long-run production is not categorized by time frame of production. Shot-run production refers to the production in which one factor is fixed, by long-run production refer to the production that all fators are variable.

(3) a)



Profit maximizing condition of this firm is MR=MC

b)
- total revenue = P.q = 150×20 = 3000 #
- total cost = TVC + TFC = 3600 #
- Profit = TR − TC = 3000 − 3600 = −600 #
- average variable cost = $\frac{TVC}{2}$

$TC = 3600 = TVC + 1200$

$TVC = 2400$

$AVC = \frac{2400}{20} = 120$ #

$ATC = \frac{TC}{q} = 180$

$TC = 180 \times 20 = 3600$

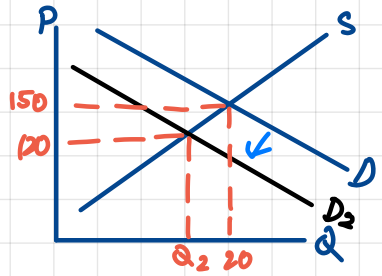
$AFC = 60 \rightarrow \frac{TFC}{q} = 60$

$TFC = 60 \times 20 = 1200$

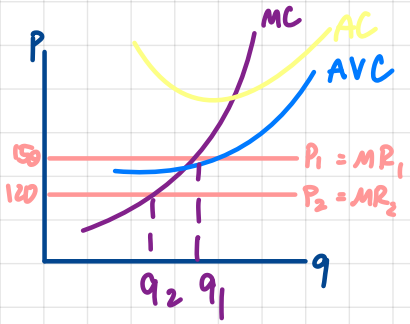
c) P > AVC ; least loss

the firm should stay in the market and choosing between a unit and produce up to q^*. It is because firm are expect to receive the profit in the long-run.

d) (i)



(ii)

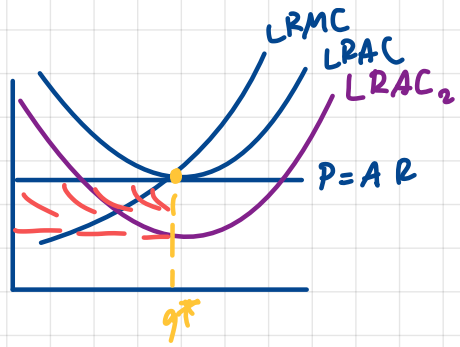


price decreace to 120 makes MR drop as well. therefore, equilibrium quantity and profit drecrease.

④

a) providing lum-sum subsidy to farmer can change LRAC because it will lower fixed cost, and LRMC doesn't change because this curve only tell us how much to produce

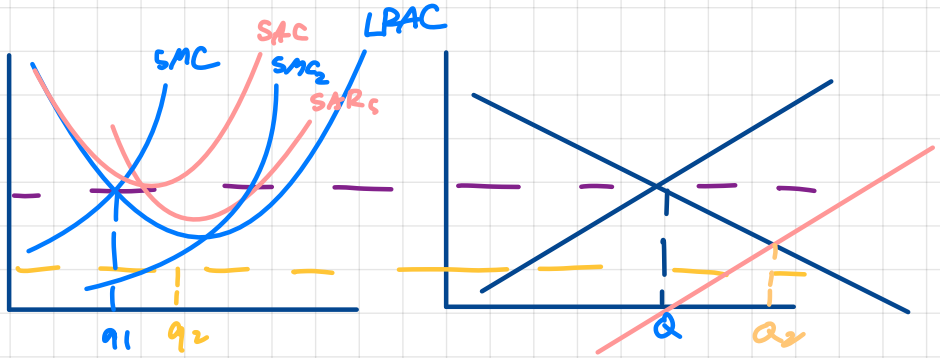
b)



lump sump subsidy will not change the quantity the farmer want to maximize profit

farmer will earn excess profit after receiving subsidy because subsidy makes a drop in LRAC which means that the cost is lower while price and quantity are the same.

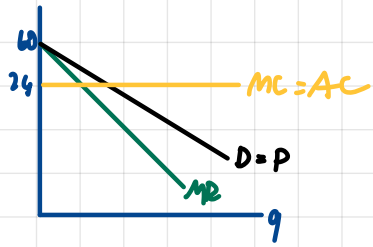
c)



in the long run, more firm join this market. the supply curve shift right the we will have new equilibrium price which is lower.

⑤

a) P/C/revenue



$TR = P(Q) \cdot Q = (60 - 0.6Q)Q = 60Q - 0.6Q^2$

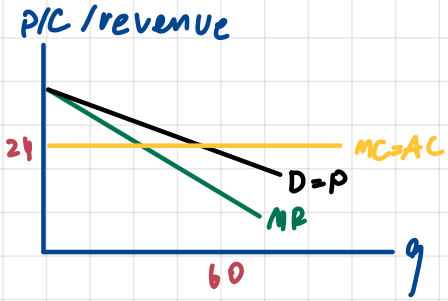
$MR = \frac{dTR}{dQ} = 60 - 1.2Q$ #

b) a profit maximizing in monopolist is occur when MR=MC optimal mit of house $\Rightarrow MR = P$

$60 - 0.6Q = 24$

$0.6Q = 36$

$Q = 60$ #



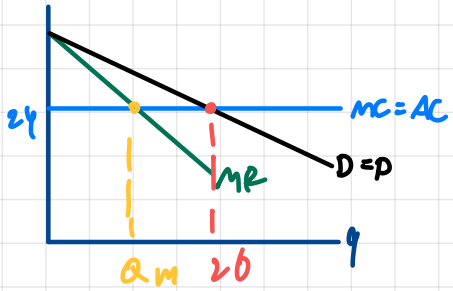
profit is derived from the difference between TR and TC

$TR = AR \cdot q = 24 \times 60 = 1440$

$TC = AC \cdot q = 24 \times 60 = 1440$

$AR = P = 60 - 0.6(60) = 24$

c) P/C / revenue



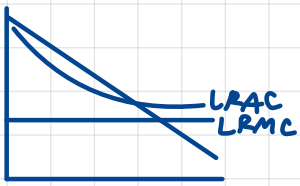
ideal price ; $P = MC$

$60 - 0.6Q = 24$

$Q = 20$

from the diagram, ideal price after the intervention is the same as the price before intervention

⑥ a)



equilibrium : $MC = MR$

Profit : $(PM - PC) \cdot Q^*$

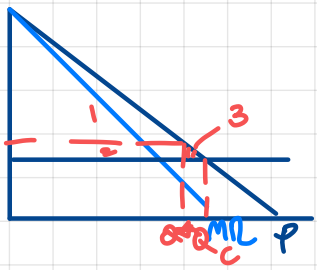
b) Lerner's index $= \frac{P - MC}{P} = \frac{50 - 10}{50} = \frac{4}{5}$

c) ideal price → $P = MC$

$50 \neq 10$

∴ monopoly will not earn any profit at ideal price level because p is not equal to MC

d) fair price → $P = AC$



consume surplus = 1

seller's profit = 2

dead weight loss = 3