

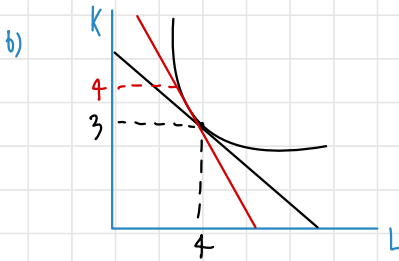
Assignment 2.

①

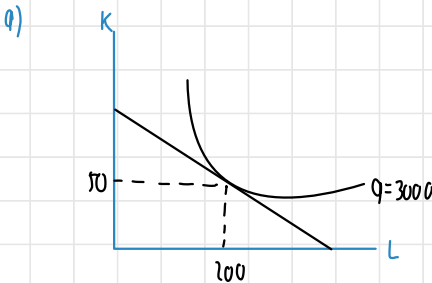
a). $|MRTS| = \frac{MP_L}{MP_K} = \frac{8^3}{8r} = \frac{3}{r}$

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

[if $w = 3, r = ?$] $|MRMS_{LK}| = \left| \frac{\Delta K}{\Delta L} \right| = \frac{W}{r}$
 $\frac{3}{r} = \frac{3}{r} \rightarrow$ interest rate is 4 ✖



②

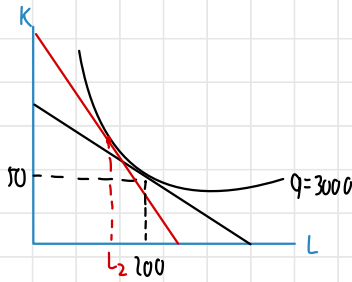


firm minimize cost by utilized all of the factor of production in order to produce

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

$MP_L = 24,000$ ✖

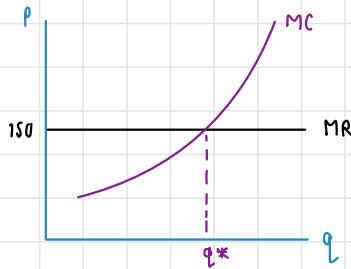
c)



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

③

a)



Profit maximizing condition of this firm is $MR = MC$

b)

• total revenue = $P \cdot q = 150 \times 20 = 3000$ ✘

• total cost = $TVC + TFC = 3600$ ✘

• Profit = $TR - TC = 3000 - 3600 = -600$ ✘

• average variable cost = $\frac{TVC}{q}$

$TC = 3600 = TVC + 1200$

$TVC = 2400$

$AVC = \frac{2400}{20} = 120$ ✘

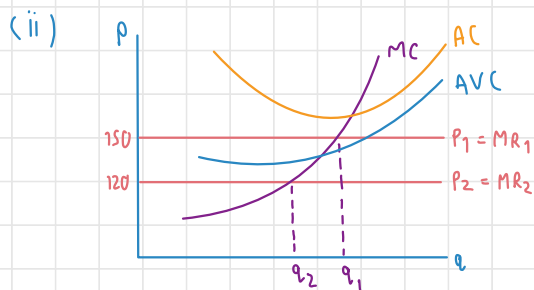
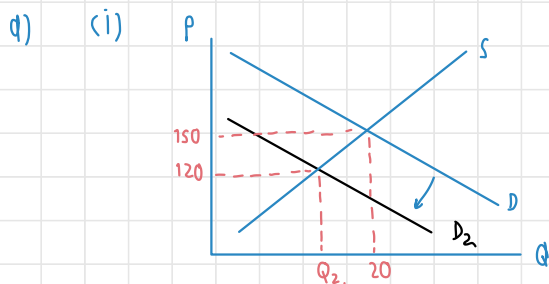
$ATC = \frac{TC}{q} = 180$

$TC = 180 \times 20 = 3600$

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

$TFC = 60 \times 20 = 1200$

- c) $P > AVC$; least loss
 the firm should stay in the market and choosing between 0 unit and produce up to q^* . It is because firms are expect to retrieve the profit in the long-run

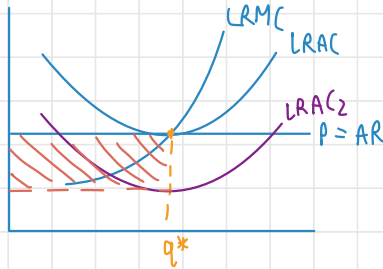


price decrease to 120 makes MR drop as well. therefore, equilibrium quantity and profit decrease

4.

a) providing lump-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.

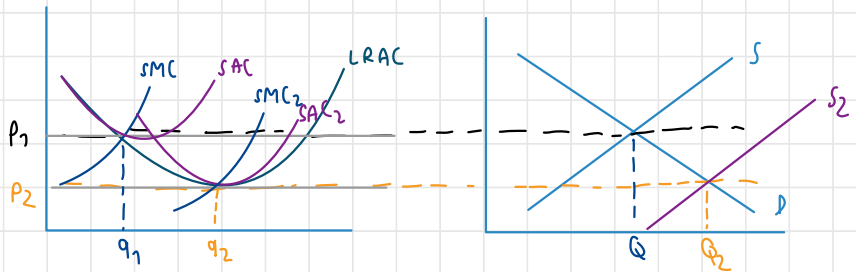
b)



Lump sum subsidy will not change the quantity the farmer want to maximize profit

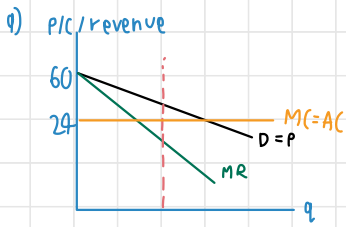
farmers will eqn excess profit after receiving subsidy because subsidy makes a drop in LRAC which means that the cost is lower while price and quantity are the same.

c)



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

5



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

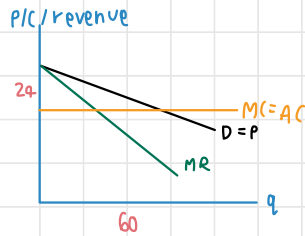
$$MR = \frac{dTR}{dQ} = 60 - 1.2Q$$

b) a profit maximizing in monopolist is occur when $MR = MC$.
 optimq1 unit of house $\Rightarrow MR = P$

$$60 - 0.6Q = 24$$

$$0.6Q = 36$$

$$Q = 60$$

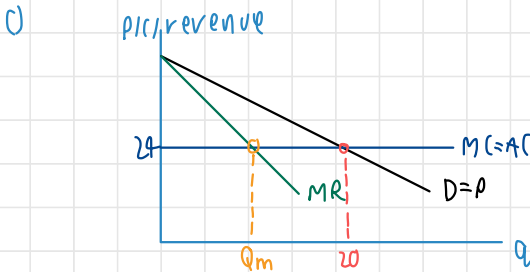


profit is derived from the difference between TR and TC

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

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

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



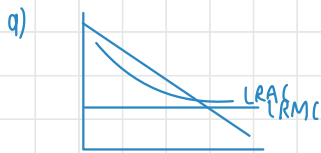
ideal price ; $P = MC$

$$60 - 0.6Q = 24$$

$$Q = 20$$

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

6)



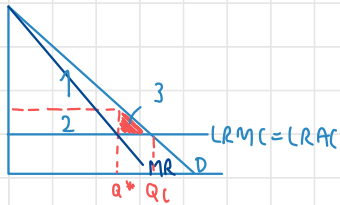
equilibrium: $MC = MR$
profit: $(P_m - P_c) \cdot Q^*$

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

c) ideal price $\rightarrow P = MC$
 $50 \neq 10$

\therefore monopoly will not earn any profit at ideal price level because P is not equal to MC

d) fair price $\rightarrow P = AC$



consumer surplus = 1
seller's profit = 2
deadweight loss = 3