1.

1.a) $MRTS = \frac{MP_L}{MP_K} = \frac{6}{8} = 0.75$

↑ always negative owing to downward slope

cost-minimization conditions : $f(L^*, K^*) = Q_0 \Rightarrow$ fixed isoquant

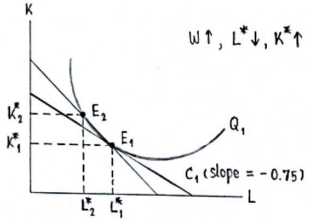
$\frac{MP_L}{MP_K} = \frac{w}{r}$ (the isocost is tangent to given isoquant)

$\frac{6}{8} = \frac{3}{r} \Rightarrow r = 4$

1.b) ceteris paribus : r and Q are the same

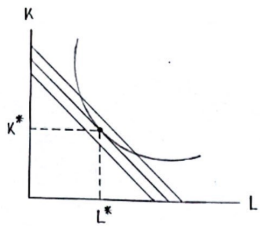
$w' = 3 + 4 = 7$

$\frac{w'}{r} = \frac{7}{4}$; > 1



2.

2.a)



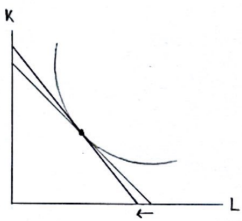
conditions : 1) $f(L^*, K^*) = Q_0$ (fixed isoquant)

2) $\frac{MP_L}{MP_K} = \frac{w}{r}$ (the isocost is tangent to given isoquant)

2.b) $\frac{MP_L}{MP_K} = \frac{w}{r}$

$\frac{200}{50} = \frac{w}{8} \Rightarrow$ marginal product of the 200^{th} workers = 32

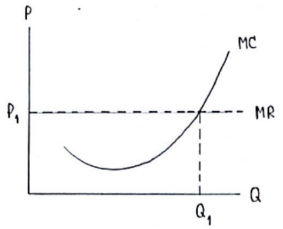
2.c)



2.d) the SR is the time peroid in which quantity of at least one input is fixed and other inputs of quantities can be varied while the LR is the time peroid in which all inputs of quantities can be varied.

3.

3.a) condition : MR = MC



3.b) AVC = ATC − AFC

= 180 − 60 = 120

TR = P·Q

= 150(20) = 3000

TC = F + vQ

= 60 + 120(20) = 2460

profit = TR − TC

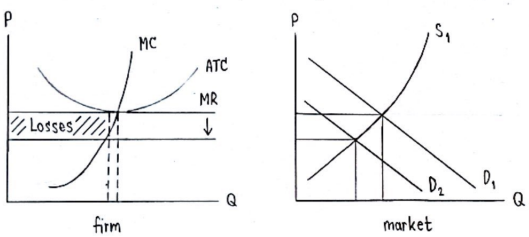
= 3000 − 2460

= 540

3.c) Yes, because P > AVC

If P < AVC, firm should not produce at all owing to firm shut down

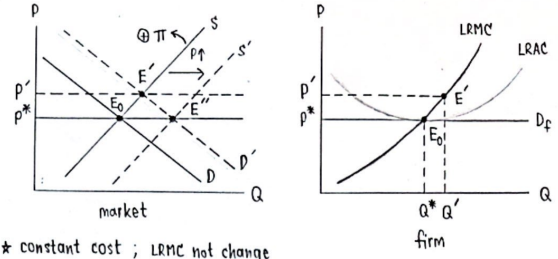
3.d)



P = AVC ; it can still produces output as 3.c) but it earns zero economic profit

4.

4.a)

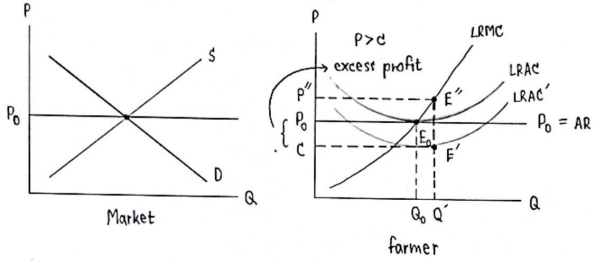


★ constant cost ; LRMC not change

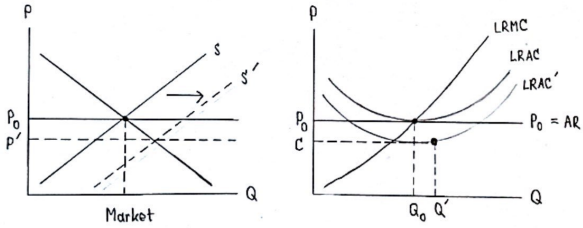
subsidy ; increase in demand

4.b) No, Profit = LRMC ; when MC = MR

↳ not change , so the maximize of profit remains the same



4.c)



new firms enter → SR market supply curve shifts right → P↓ →

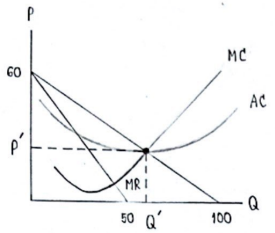
reducing firms' profits → profits have been driven to 0 → entry stop

5.

5.a) $P = 60 - 0.6Q$ | $MR = a - 2bQ$

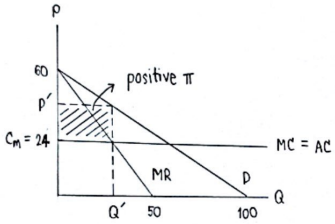
$0.6Q = 60 - P$ | $= 60 - 1.2Q$

$Q = 100 - 1.67P$ | $\therefore MR = 50$



(in case of MC = AC)

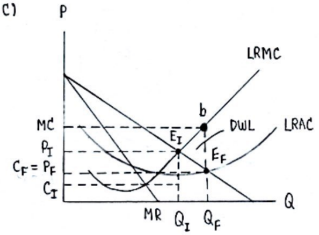
5.b)



$\pi = (P_m - ATC)Q_m$

* can make a profit when $P > ATC$

5.C)



A) At (Q_I, P_I)

- DWL = 0 because $P = MC$
- π_m^I = positive

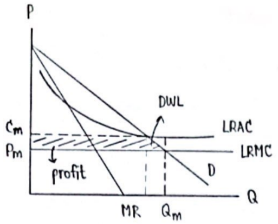
B) At (Q_F, P_F)

- DWL = $\Delta E_I b E_F$; $MC > P_F$
- $\pi_F^I = 0$; $P_F = C_F$ ↖ AC

- B) is good for consumers because they will pay lower price
- If monopolist has political influence → go to A
  ↓
  monopolist still gains some profit
  ↘ reduce DWL

6.

6.a)



1) $P < AVC$

2) $MR = MC$

$\Rightarrow \pi_m = (P_m - ATC)\,Q_m$

6.b) Lerner's Index $= \frac{50-10}{50} = \frac{40}{50} = 0,8$

6.c) At (Q_I, P_I)

↳ $\pi_m^I = \oplus$; price is above MC

6.d) At (Q_F, P_F)

↳ DWL $= \Delta E_I b E_F$

because $MC > P_F$