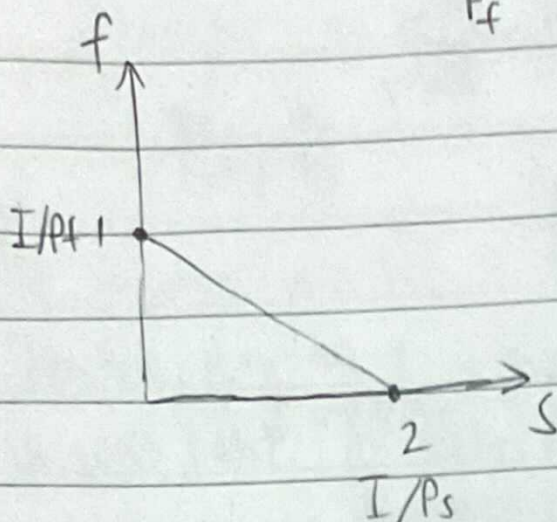


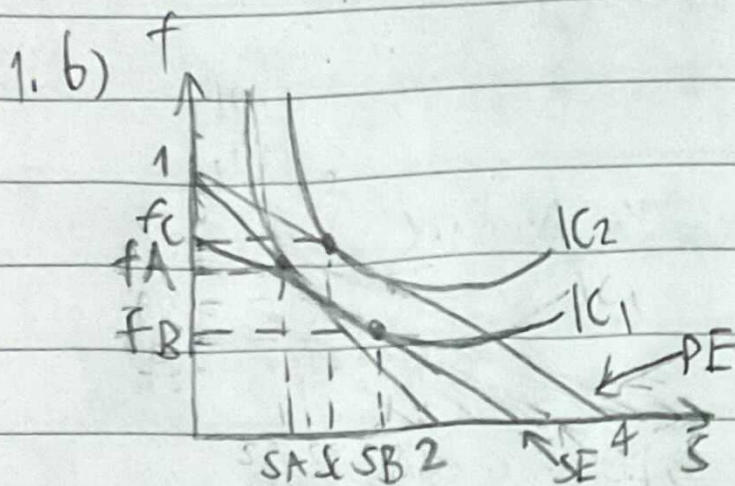
1. a) $40 = 20s + 40f$; $s = \text{Sinovac}$, $f = \text{Pfizer}$

Budget line = $\frac{P_s}{P_f} = \frac{20}{40} = \frac{1}{2}$



$I/P_f = 1$

$I/P_s = 2$

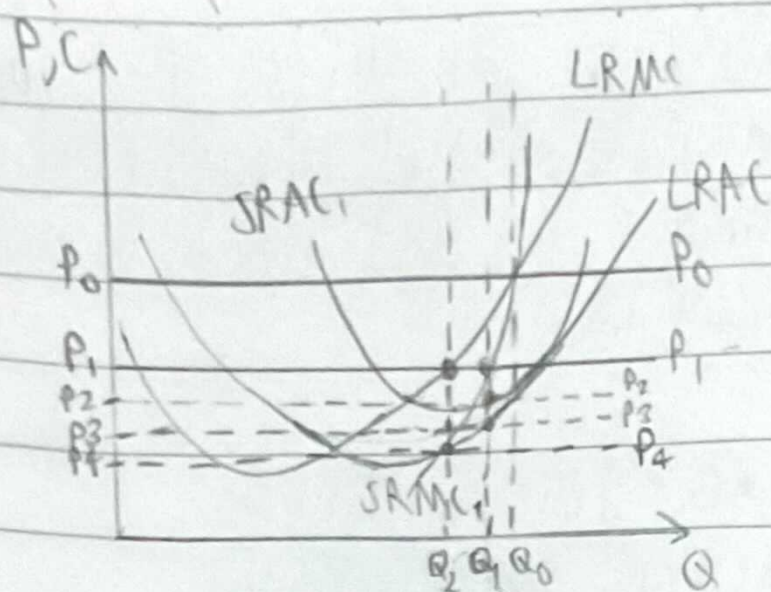


$SA \Rightarrow SC(+)$ because,
 $IE(-)$ has less impact than $SE(+)$
 for inferior goods

$SE \ SA \rightarrow SB(+)$ $f_A \rightarrow f_B(-)$

$+ \ IE \ SB \rightarrow SC(-)$ $f_B \rightarrow f_C(+)$

$PE \ SA \rightarrow SC(+)$ $f_A \rightarrow f_C(+)$



2.a) - New short run equilibrium quantity is when $SRMC_1 = P_1$ as shown above.

- Profit of the firm is $(P_1 - P_2) \cdot Q_1$ (excess profit)

2.b) The LRAC intersect with quantity Q_1 at level of P_3 which resulted in a lower cost than $SRAC_1$ at the level of P_2 so, Profit of firm in the long run is $(P_1 - P_3) \cdot Q_1$, which is more than profit in the short run $(P_1 - P_2) \cdot Q_1$.

2.c) - At P_1 the long run eq quantity is at Q_2 , when $LRMC = P_1$ because price in perfect competition is also MR, and firm will produce at $MR = MC$. This is possible in the long run - due to the assumption of no more seller entering.

3.a) Profit maximized at $MR = SAC$, so they should import 10 million doses. And at the price of \$80 because the quantity intersect demand curve or price at that level.

3.b) TR of GPO: $P \cdot Q = \$80 \times 10m = \$800m$
TC of GPO: $AC \cdot Q = \$65 \times 10m = \$650m$
 $\$150m$

Total profit of GPO is 150. (million USD)

3.c) fair price is when $P = SAC$, which is at the price of \$50 and the quantity of 18 million doses. (A)

3.d) At the quantity of 20 million doses, it intersect price at \$40. Therefore, the GPO is now in a loss situation, because the SAC is higher than price and that is the amount that the government should subsidize, which is
 $(AC - P) \cdot Q = (\$48 - \$40) \cdot 20m = 160$ million dollars.