HW#8 Due March 1, 2022

9. At Fenway Park, home of the Boston Red Sox, seating is limited to about 38,000. Hence, the number of tickets issued is fixed at that figure. Seeing a golden opportunity to raise revenue, the City of Boston levies a per ticket tax of $5 to be paid by the ticket buyer. Boston sports fans, a famously civic-minded lot, dutifully send in the $5 per ticket. Draw a well-labeled graph showing the impact of the tax. On whom does the tax burden fall—the team's owners, the fans, or both? Why?
10. A market is described by the following supply and demand curves:

$$Q^S = 2P$$
$$Q^D = 300 - P$$

   a. Solve for the equilibrium price and quantity.

   b. If the government imposes a price ceiling of $90, does a shortage or surplus (or neither) develop? What are the price, quantity supplied, quantity demanded, and size of the shortage or surplus?

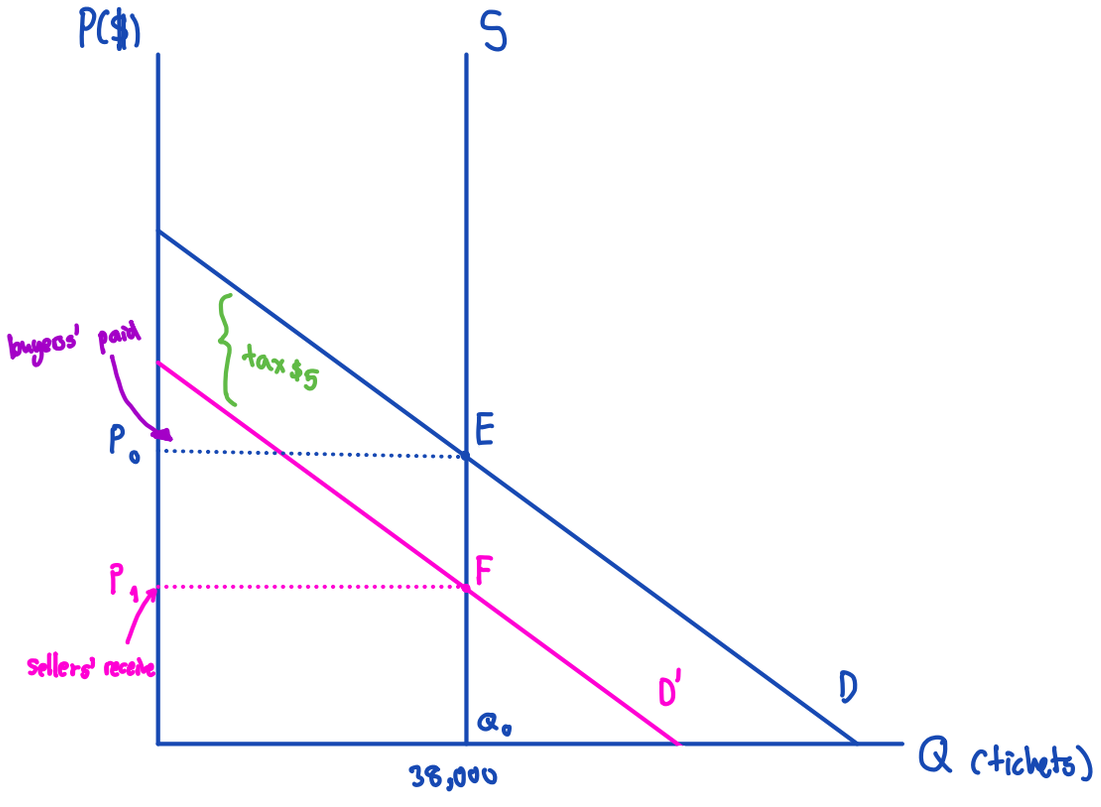
   c. If the government imposes a price floor of $90, does a shortage or surplus (or neither) develop? What are the price, quantity supplied, quantity demanded, and size of the shortage or surplus?

   d. Instead of a price control, the government levies a tax on producers of $30. As a result, the new supply curve is:

$$Q^S = 2(P - 30).$$

   Does a shortage or surplus (or neither) develop? What are the price, quantity supplied, quantity demanded, and size of the shortage or surplus?

9.)



From graph above shows that seller receive $\$P_0$ in his pocket but buyer pay $\$P_1$ which is $P_0 + 5$ and this 5 is the tax. So tax burden is to seller only because the seller get price lower than the price which the buyer pays.

a) at equilibrium point $Q_D = Q_S$, then

$$300 - P = 2P$$

$$300 = 3P$$

$$P_E = \$100$$ (can get some Q_E)

So we can find Q_E by put P_E in Demand/Supply equation

from $Q_S = 2P$, $Q_S = Q_E$ at P_E

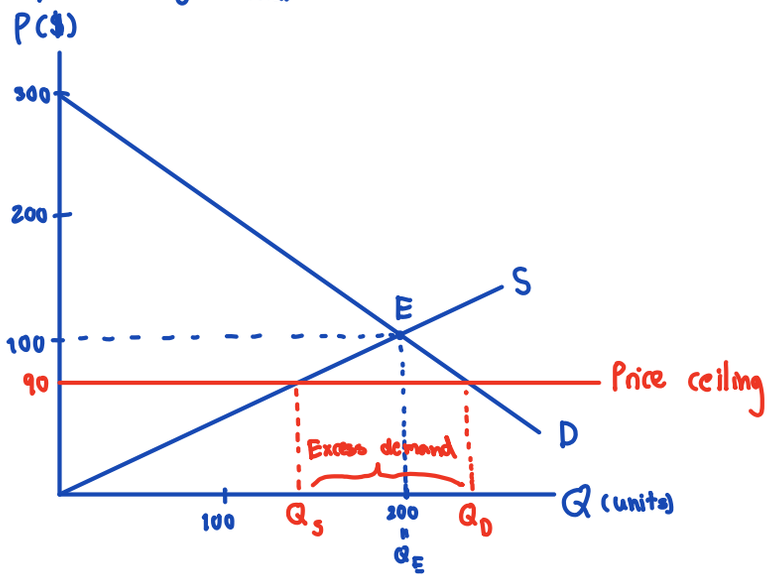
$$Q_E = 2P_E$$

$$Q_E = 2(100)$$

$$Q_E = 200 \text{ units}$$

$\therefore$ The equilibrium point is $(Q_E, P_E) = (200, 100)$

b) a price ceiling $= P_{max}$



$\therefore$ If the Government set the price ceiling at \$90 it will be excess demand. So the shortage will develop because $Q_S < Q_D$ at the ceiling price.

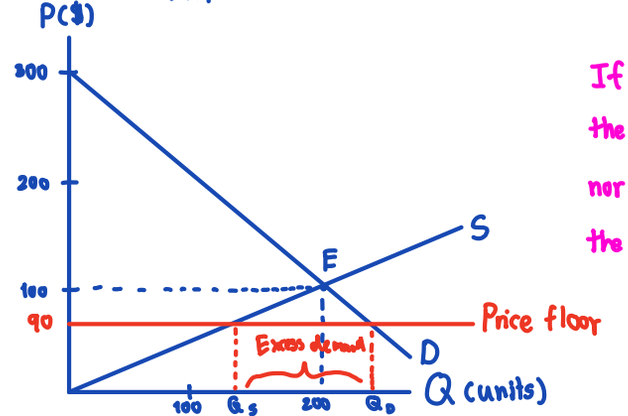
$\Rightarrow$ At Price = \$90

$Q_S = 2(90) = 180$ units

$Q_D = 300 - 90 = 210$ units

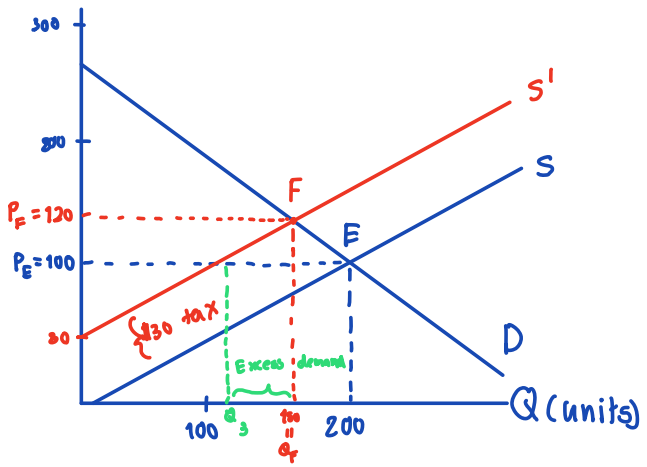
$\therefore$ at P = \$90 it will shortage $210 - 180 = 30$ units

c) a price floor $= P_{min}$



If the goverment set the price floor at \$90 it will lower than the equilibrium price so it will not effect to develop neither surplus nor shortage. Because the price floor is a minimum price then the price can higher than \$90 (price floor)

d)



new equilibrium (F)

$Q_D = Q_{s\,(new)}$

$300 - P = 2(P - 30)$

$300 - P = 2P - 60$

$360 = 3P$

$P_F = \$120$

$\Rightarrow Q_D = 300 - P$

$Q_F = 300 - P_F$

$Q_F = 300 - 120$

$Q_F = 180$ units $\quad \therefore (Q_F, P_F) = (180, 120)$

At the original price ($P_E = 100$), there is excess demand ($Q_D > Q_s$) so it is a short age.

$\Rightarrow Q_s = 2(100 - 30) = 140$ units

$Q_D = 300 - 100 = 200$ units

$\therefore$ Shortage $= Q_D - Q_s = 200 - 140 = 60$ units

So the price should increase until it's no excess demand (at point F)