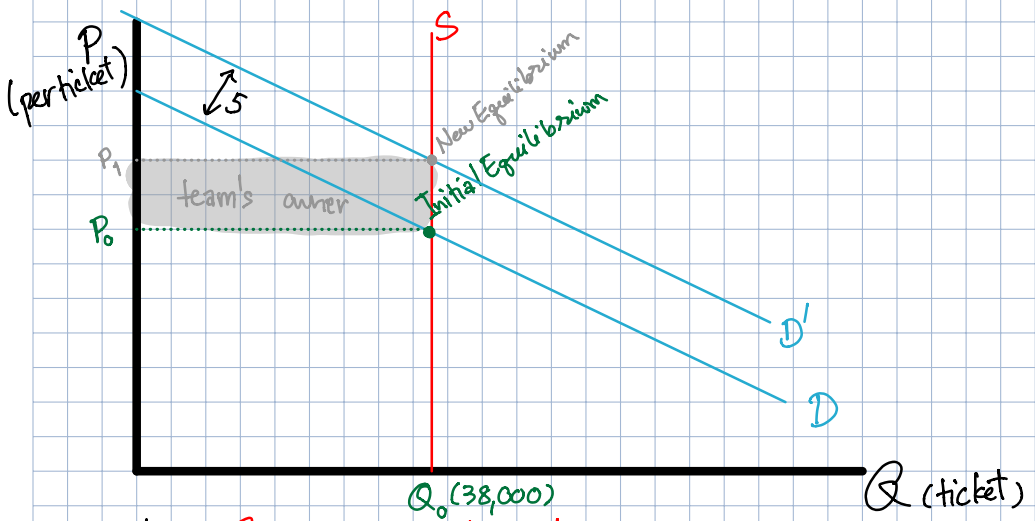
6304640102 HW#6

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?



Let S (supply) : team's owners
D (demand) : the fans

The supply (S) would be perfectly inelastic (vertical line) because the amount of ticket is fixed and remain the same whether the price change or not (referred to the statement: ...limited to about 38,000)

∴ By the perfectly inelastic supply curve, the tax burden fall only to the team's owner

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.

to be equilibrium Q_D and Q_S must be equal ($Q_D = Q_S$)

then,
$$Q_D = Q_S$$
$$300 - P = 2P$$
$$300 = 2P + P$$

$$300 = 3P$$

$$P = 100$$

∴ the price would be 100 (unit)

after computed for the price (P), we plug-in P in both equation of Q_D and Q_S; $Q_D = 300 - 100$

$Q_D = 200$ (unit)

and

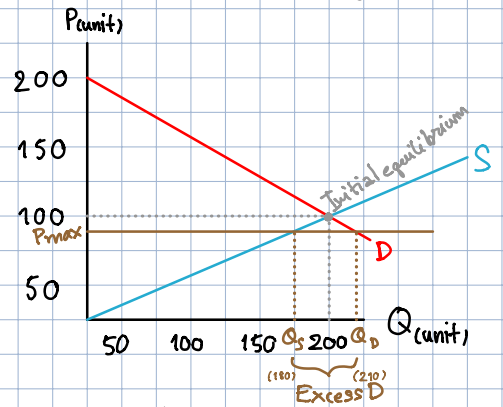
$Q_S = 2(100)$

$Q_S = 200$

Therefore, the equilibrium price is 100 and the equilibrium quantity would be 200 $(Q, S) \Rightarrow (200, 100)$

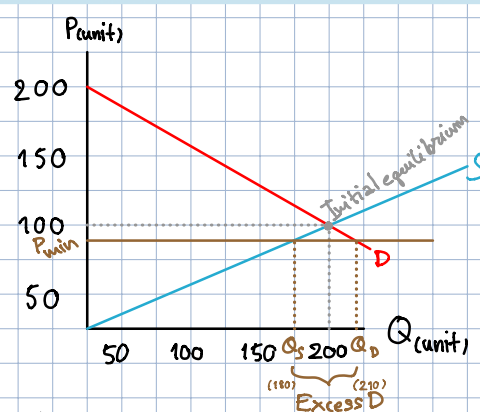
b. If the government imposes a price ceiling of $90, does a shortage or surplus (or neither) develop? What are the price, quantity supplied, quantity demanded, and size of the shortage or surplus?

the price ceiling is lower than the equilibrium price



the actual quantity after the government imposed a price ceiling would be at Q_S. The price will be 90 (unit) and the quantity supplied (Q_S) would be around 180 (unit) and quantity demanded would be around 210 (unit). The shortage would be occured and the size is 30 ($Q_D - Q_S = 210 - 180 = 30$)

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?



the price floor is lower than the equilibrium price. Hence, nothing is changed. The price remains the same, quantity supplied and quantity demanded is unchange, and neither surplus nor shortage is occured.

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?

As mentioned in answer for a.), to be equilibrium Q_D and Q_S must be equal

then, (Q_S ← new Q_S after tax)

$$Q_D = Q_S$$
$$300 - P = 2(P - 30)$$
$$300 - P = 2P - 60$$
$$360 = 3P$$
$$P = 120 \text{ (unit)}$$

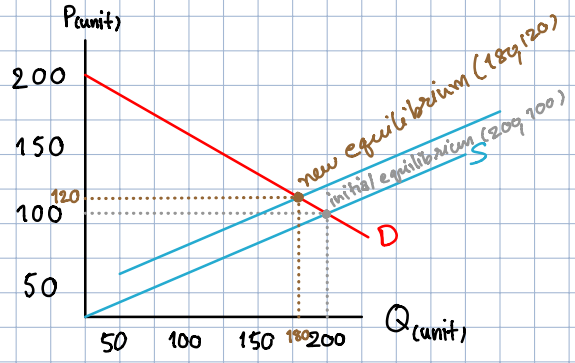
we plug-in P=120 to compute Q_D and Q_S

$$Q_D = 300 - 120$$
$$Q_D = 180$$

and

$$Q_S = 2(120 - 30)$$
$$Q_S = 2(90)$$
$$Q_S = 180$$

Therefore, the new equilibrium price 120 (unit) and the new equilibrium quantity is 180 (unit) $(Q, P) \Rightarrow (180, 120)$



Neither surplus nor shortage is occured, the change are only in price and quantity as describe above (new price = 120, new quantity 180).