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HW#6 Due March 4, 2021

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.

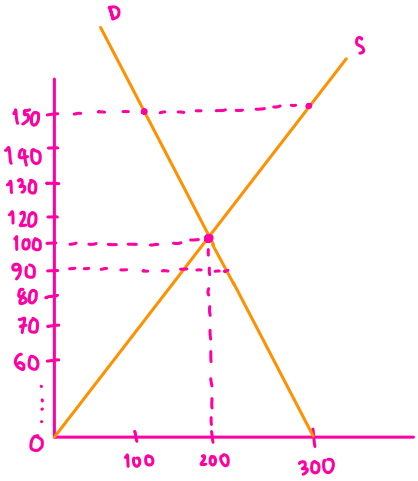
b. If the government imposes a price ceiling of $90, does a shortage or surplus (or neither) develop? What are the price, quantity supplied, quantity demanded, and size of the shortage or surplus?

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?

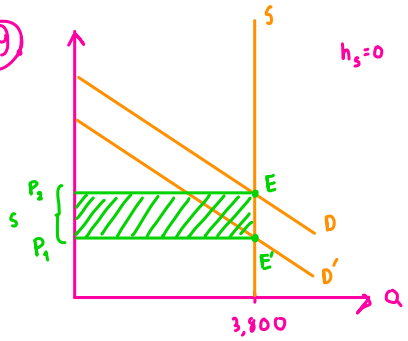
d. Instead of a price control, the government levies a tax on producers of $30. As a result, the new supply curve is:

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

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



(9)



Calculate explanation:

$\frac{h_s}{h_D} = \frac{\text{burden on buyer}}{\text{burden on seller}} = 0 \Rightarrow$ seller take 100% of burden

Descriptive explanation

From the graph, the supply curve is absolutely inelastic. It shows that supply for seat can't be changed at any price. Therefore, the supplier has to be responsible on tax burden completely because supplier must reduce the price to be able to sell the ticket.

(10)

a) $Q^S = 2P$, $Q^D = 300 - P$

$Q^S = Q^D$

$2P = 300 - P$

$P = 100 \Rightarrow Q^E = 200$

$\therefore P = 100$, $Q_E = 200$

b) Price will be max at 90$

- quality demanded = 210 units
- quantity supplied = 180 units
- $Q_D > Q_S \rightarrow$ shortage develop
- shortage size = 210 - 180 = 30 units

c) Price will be minimum at 90$

Since the equilibrium price is 100$, 90$ is below the equilibrium and that means The price floor at 90$ is ineffective. So, the mechanism will keep going and the equilibrium price and quantity will be 100$ and 200 units.

$\therefore$ Price = 100$ $Q_D, Q_S = 200$ units

Neither surplus nor shortage would develop.

d) At $P = 100$$

$Q_D = 300 - P = 300 - 100 = 200$

$Q_S = 2P - 60 = 2(100) - 60 = 140$

$200 - 140 = 60$ units

It is shortage and size of shortage is 60 units

- Find equilibrium price $\rightarrow 2P - 60 = 300 - P$

$P = 120$$

- Find equilibrium quantity $\rightarrow 2p = 2(120) = 240$ units

$\therefore P_E = 120$$, $Q_E = 240$ units