

HW#6 Due October 6, 2020

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:

$$Q^S = 2P$$

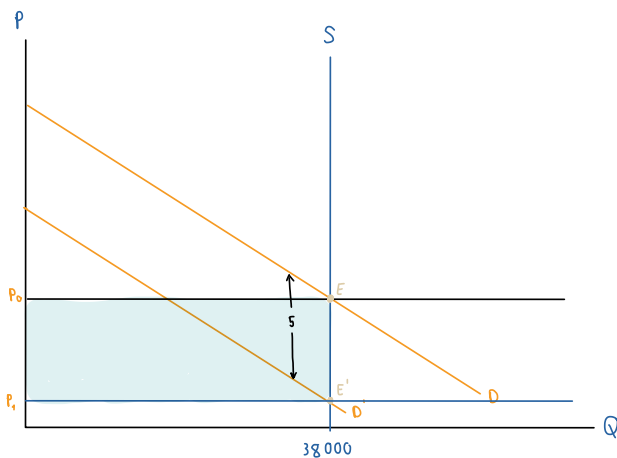
$$Q^D = 300 - P$$

- Solve for the equilibrium price and quantity.
- 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?
- 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?
- 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



When supply is perfectly inelastic, the biggest share of the tax burden falls on the producer, which is the team's owner.

10 a. Solve for the equilibrium price and quantity.

$$Q^S = 2P \rightarrow P = \frac{Q^S}{2}$$

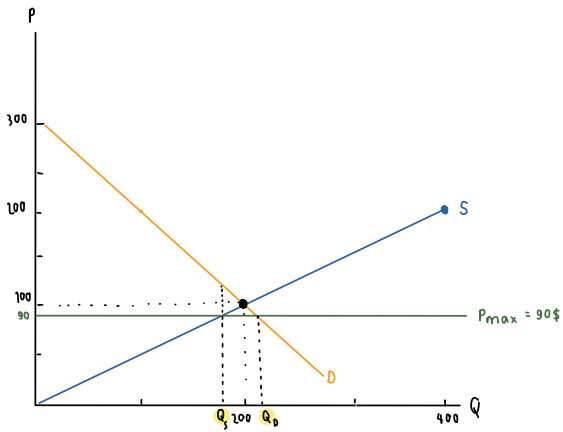
$$Q^D = 300 - P \rightarrow P = 300 - Q^D$$

$$\begin{array}{l|l} 2P = 300 - P & \frac{Q}{2} = 300 - Q \\ 3P = 300 & Q = 600 - 2Q \\ P = 100 & 3Q = 600 \\ & Q = 200 \end{array}$$

∴ Equilibrium price is 100
Equilibrium quantity is 200 ₺

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?

P = Q/2		P = 300 - Q	
Q ^S	P	Q ^D	P
0	0	300	0
200	100	200	100
400	200	100	200
600	300	0	300



- A shortage develops.

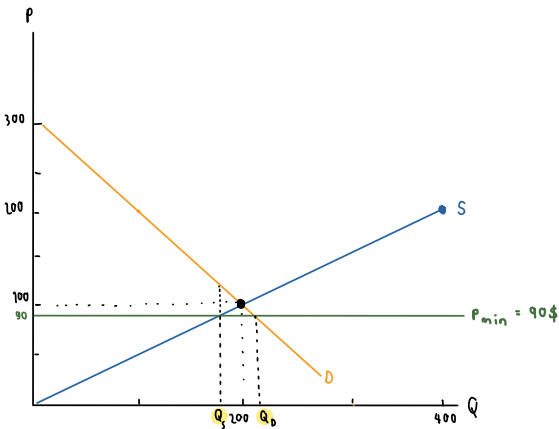
A price ceiling of 90\$,

- the quantity supplied $\Rightarrow 2P = 2(90) = 180$

- the quantity demanded $\Rightarrow 300 - P = 300 - 90 = 210$

- the size of the shortage would be $210 - 180 = 30$ ₺

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?



- It neither a shortage nor surplus develops because the price floor is lower than the equilibrium price.

- both of the quantity demanded and supplied would be 200 ₺