

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:

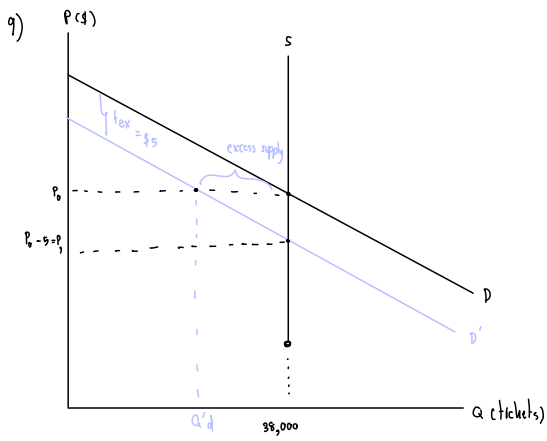
$$Q^S = 2P$$

$$Q^D = 300 - P$$

- 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?



- original price = P_0 Quantity = 6000
- tax decrease \rightarrow D decrease shift from D to D'
- At P_0 , there is excess supply \Rightarrow price decrease from P_0 to P_1
- At P_1 , equilibrium occurs because $Q_D = Q_S = 58,000$ ($Q_D - Q_S = 0$)

buyers pay P_0
 the sellers received P_1
 $P_1 - P_0 = 5 = \text{tax}$

$$\eta_s = \frac{\text{tax burden on buyer}}{\text{tax burden on seller}}$$

$\eta_s = 0$ the buyer bear no tax burden

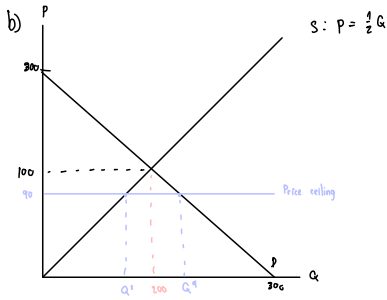
10) a)

$$Q_s = Q_d$$

$$2P = 300 - P$$

$$P = 100$$

$$P = 100 \quad Q = 200$$



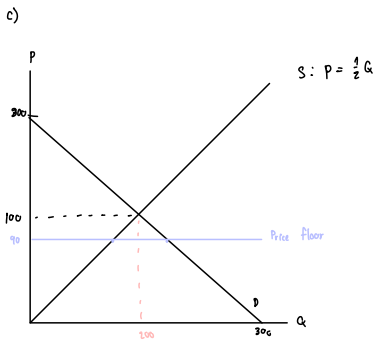
If the gov. sets price below the eqm price
 there will be excess demand \Rightarrow shortage

at the price = \$90

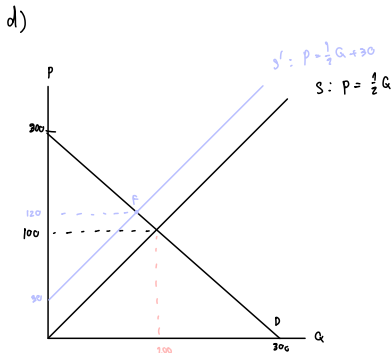
$$\Rightarrow Q^S = 2(90) = 180$$

$$\Rightarrow Q^D = 300 - 90 = 210$$

$$Q^D - Q^S = 30 \text{ units of the price ceiling} = 90$$



If gov. set price floor at \$90 which lower than equilibrium
 minimum price traded in the in the market



to find point F ($Q^d = Q^s$)

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

$$2P - 60 = 300 - P$$

$$3P = 360$$

$$P = 120 \Rightarrow Q = 180$$

The new equilibrium at F where $(P, Q) = (120, 180)$

at the original price \$100, $Q^S = 2(100 - 30) = 140$
 while $Q^D = 300 - 100 = 200$

there is an excess demand = $Q^D - Q^S = 200 - 140 = 60$

therefore, price tend to increase until there is no excess demand (F)