

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:

$$Q^S = 2P$$

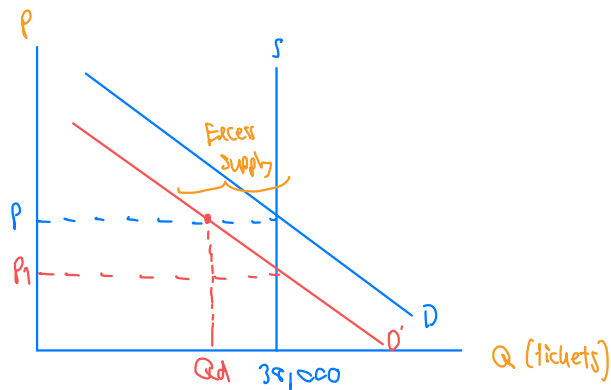
$$Q^D = 300 - P$$

- 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?

a)



At first, the original price and quantity = P_0 and 38,000 tickets

Then the buyer is set \$5 per ticket that make D shift to D'

In this graph show excess supply. The new equilibrium price

is at P_1 . The equilibrium quantity remains the same at 38,000 tickets

$$\text{For the elasticities} = \frac{\eta_D}{|\eta_S|} = \frac{\text{tax burden on the buyer}}{\text{tax burden on the seller}}$$

$\therefore \eta_S = 0$ = perfectly inelastic, the buyers no tax burden.

10)

a) Find equilibrium

$$Q_s = Q_d$$

$$2P = 300 - P$$

$$P_E = 100$$

Compute P_E by put in Demand / supply equation.

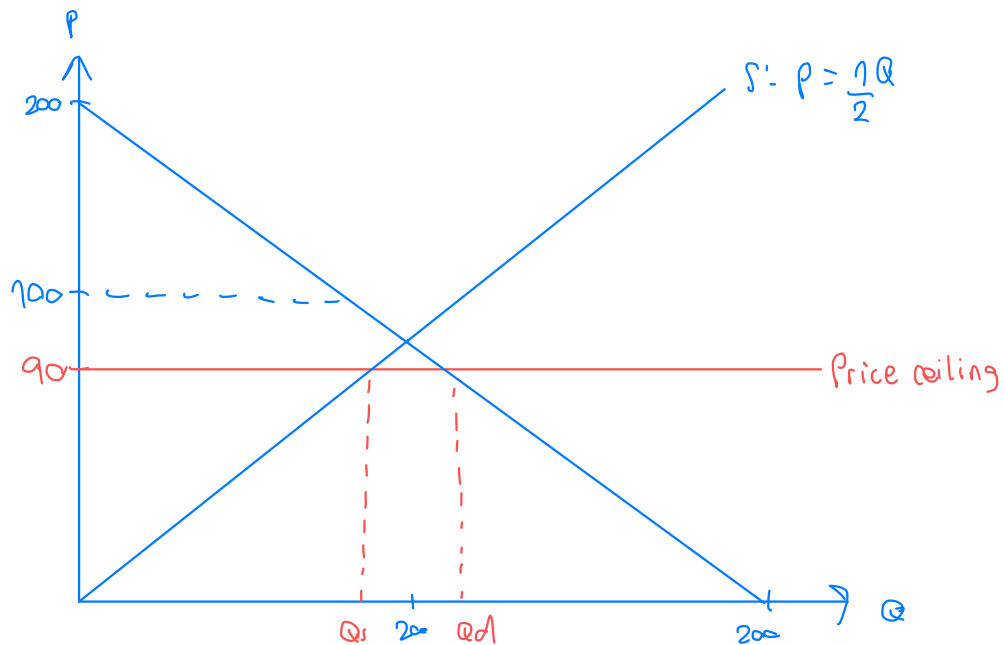
$$Q = 2(P_E)$$

$$Q = 2(100)$$

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

$$(P, Q) = (100, 200)$$

b)



∴ Government sets price ceiling below the equilibrium price
it will be a shortage

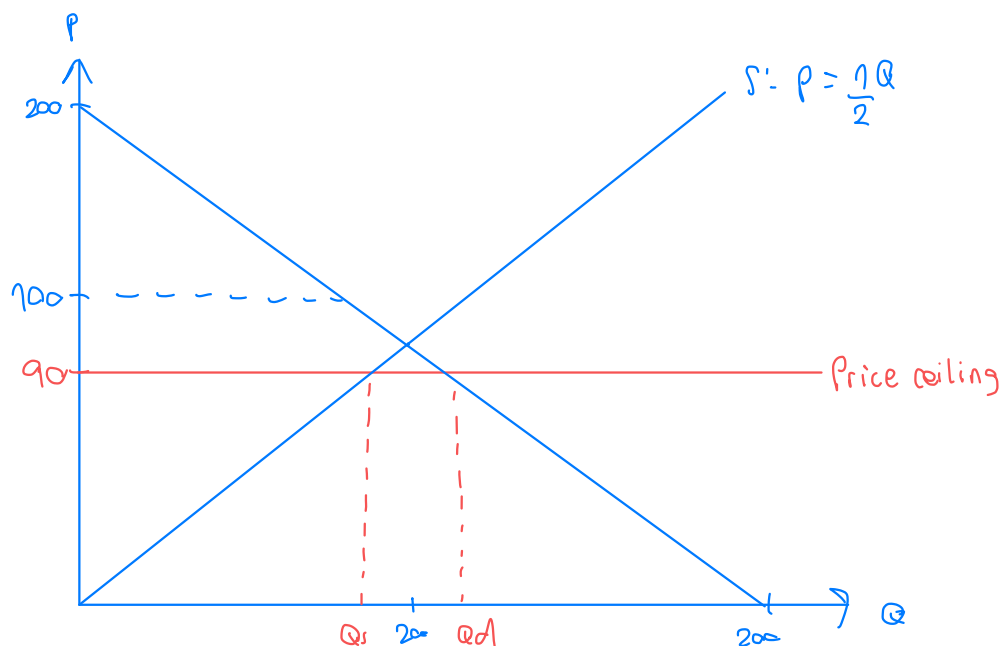
At price = 90

$$Q_s = 2(90) = 180$$

$$Q_d = 300 - 90 = 210$$

∴ there is excess demand (shortage) = $Q_d - Q_s = 210 - 180 = 30$ units
at the price ceiling = 90

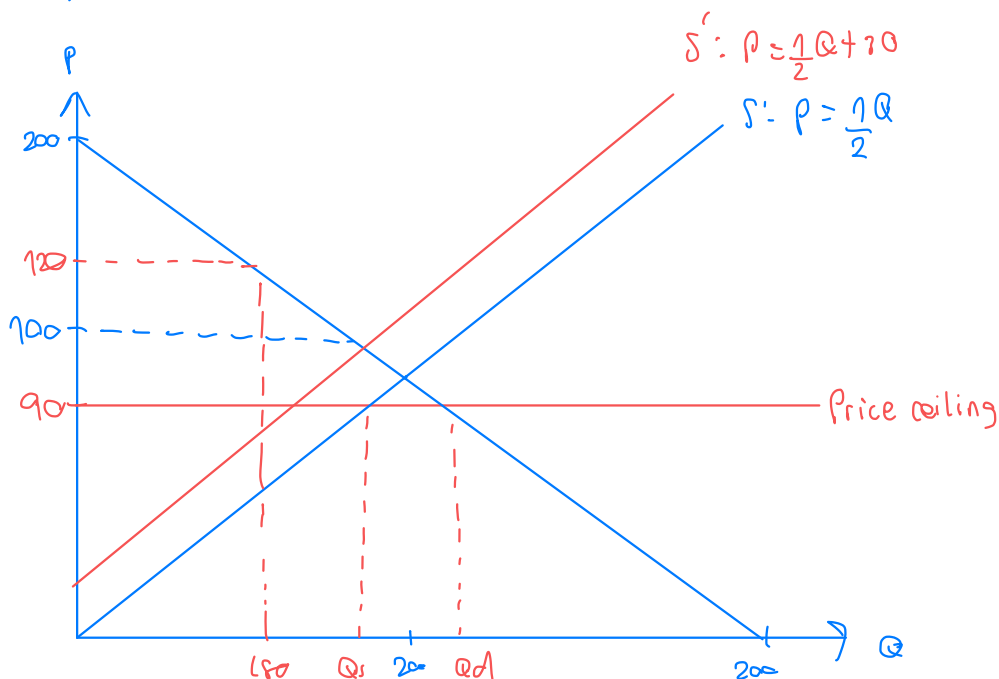
c)



∴ If the government sets price floor at \$90, it created no effect

because price floor – "minimum" price traded in the market – lower than the price that is normally traded

d)



Find point F ($Q_d = Q_s$)

$$2(P - 70) = 200 - P$$

$$2P - 140 = 200 - P$$

$$3P = 340$$

$$P = 113.33 \rightarrow Q = 226.67$$