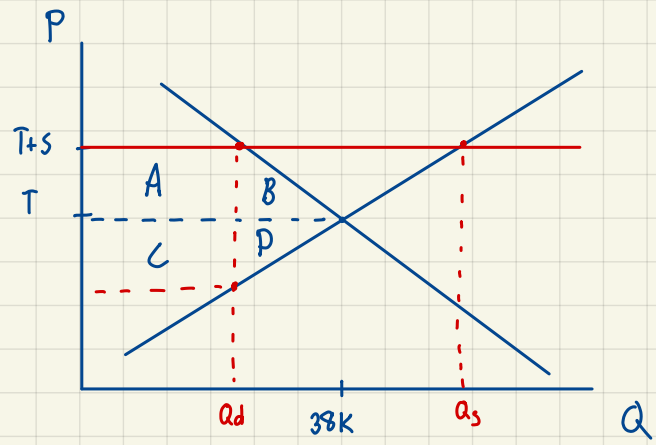
9. At Fenway Park, home of the Boston Red Sox, seating is limited to about 38,000. Hence, the number of tickets issued is fixed at that figure. Seeing a golden opportunity to raise revenue, the City of Boston levies a per ticket tax of $5 to be paid by the ticket buyer. Boston sports fans, a famously 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?



A+B = Tax on buyer

C+D = Tax on seller

∴ The tax burden is shared between the team's owners and fans

10. A market is described by the following supply and demand curves:

$y = ax + b$

$x = y$

$$Q^S = 2P \qquad P = \frac{1}{2}Q^S$$

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

$Q^d = Q^s$

$300 - P = 2P$

$P = 100$

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?

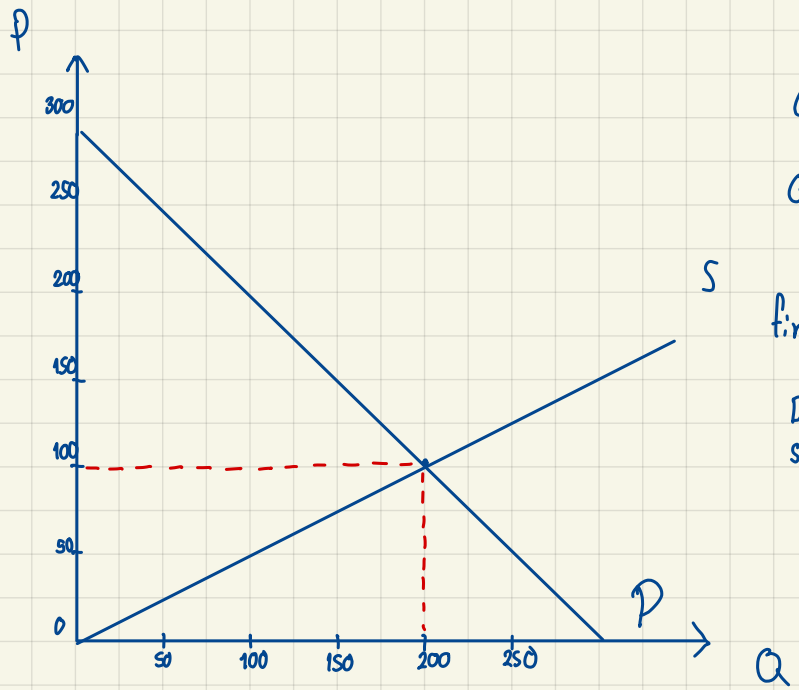
c. If the government imposes a price floor of \$90, does a shortage or surplus (or neither) develop? What are the price, quantity supplied, quantity demanded, and size of the shortage or surplus?

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?

A)



$Q_S = 2P$

$Q_D = 300 - P$

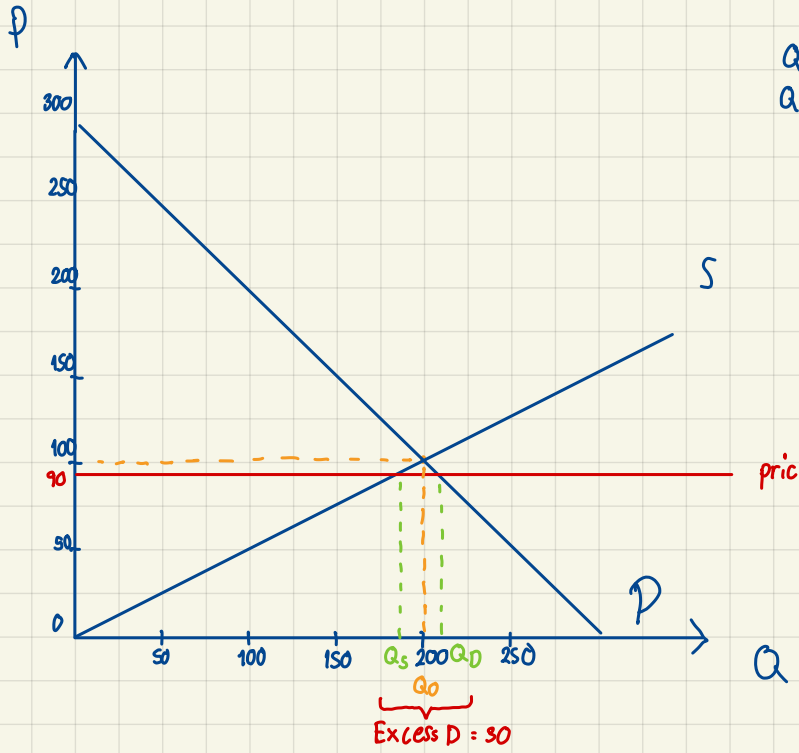
find equilibrium

$D: P = 2(100) = 200$

$S: P = 300 - (100) = 200$

∴ The market equilibrium is at (200, 30)

B)



$Q^S = 2P \rightarrow 180$

$Q^d = 300 - P \rightarrow 210$

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?

i) There are a increase amount develop by the celling price less than equilibrium price.

ii) The price is now $90

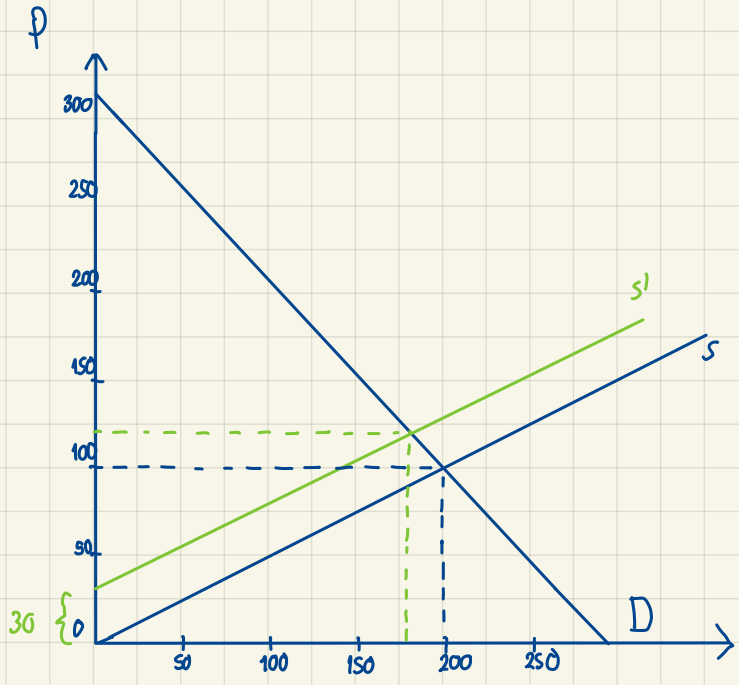
The quantity demand = $ 180

The quantity supply = $ 210

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?



$Q_S = 2(P - 30)$

$Q_D = 300 - P$

find equilibrium

D : P = 2((120) - 30) = 180

S : P = 300 - (120) = 180

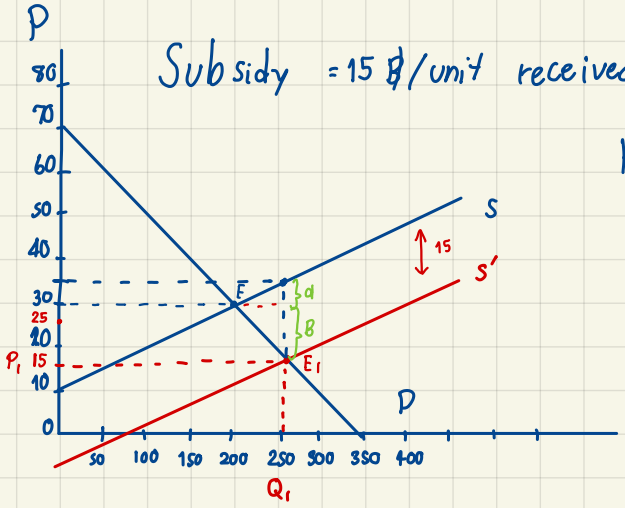
$Q_d = Q_S$

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

$2P - 60 = 300 - P$

$Q\ 3P = 360$

$P = 120$



Subsidy = 15 $/unit received by sellers

Hw

a) Find the new eq price P_1 and new eq quantity Q_1

b) Find the share of the benefit of the subsidy

Q

c) a = benefit to sellers

b = benefit to buyers

Show how a+b are related to $\eta_D + \eta_S$

d) Find the change in Customers + Producer surpluses and dead weight loss

a) The new equlibrium price is 15 and new equlibrium demand is 250

b) share benefit buyer = area A = 5×250 = 1250

Seller = area B = 15×250 = 3750

c) It related because it is a shared between buyer and seller

d)

before

After