

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:

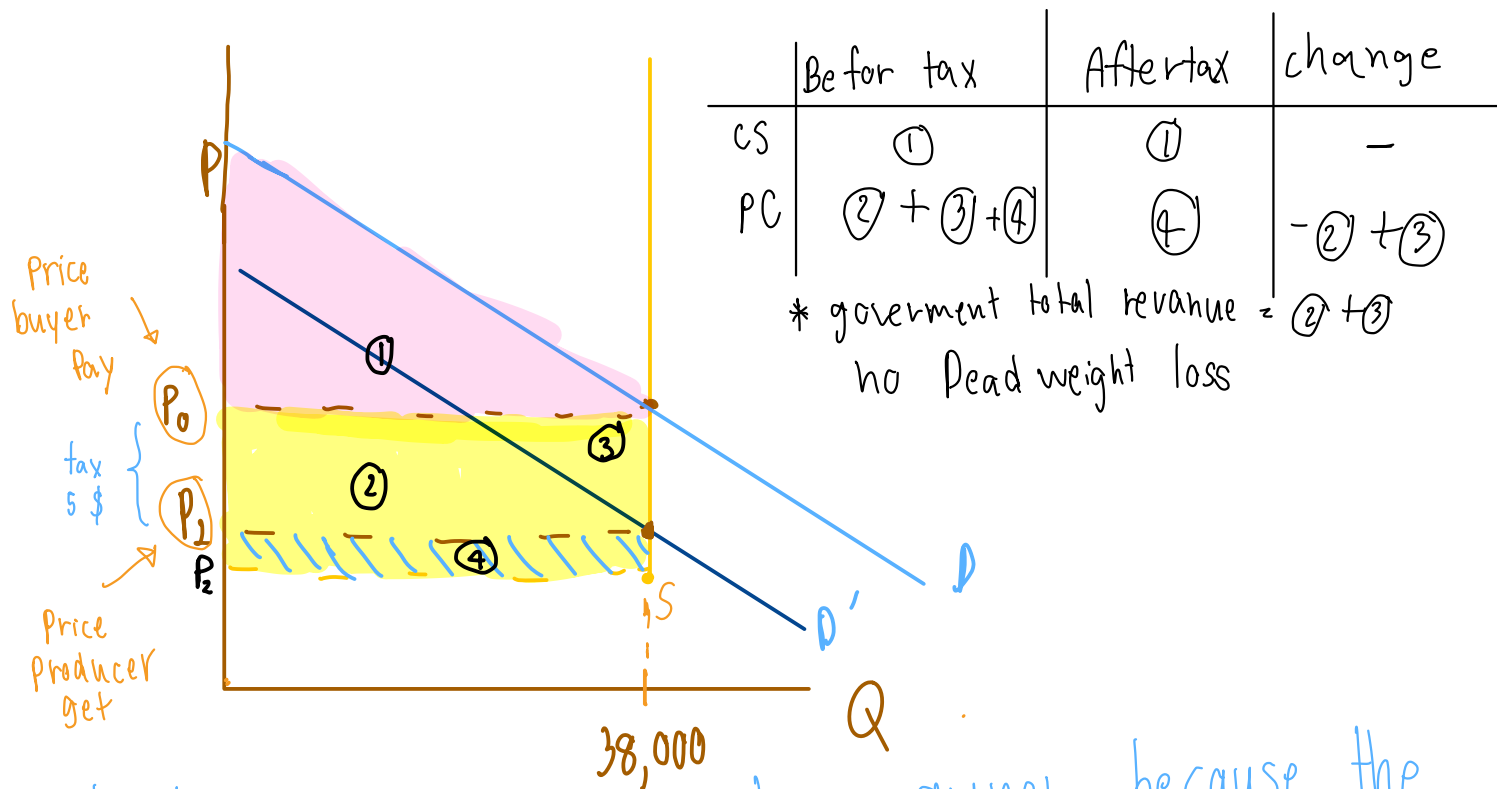
$$Q^S = 2P$$
$$Q^D = 300 - P$$

- 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?

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The tax burden fall on the team owner because the supply of ticket is perfectly inelastic, the seller are willing and able to sell 38,000 ticket at price above P_2 . The tax make producer surplus fall from area ② + ③ + ④ to just area ④. on the other hand the demand fall due to tax. In order to sell all of the ticket seller have to decrease their ticket price so the buyer end up pay the same price as before (P_0) but the seller receive less total revenue (they get \$5 less per ticket, Price P_1)

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a) Equilibrium condition

$$Q^S = Q^D$$

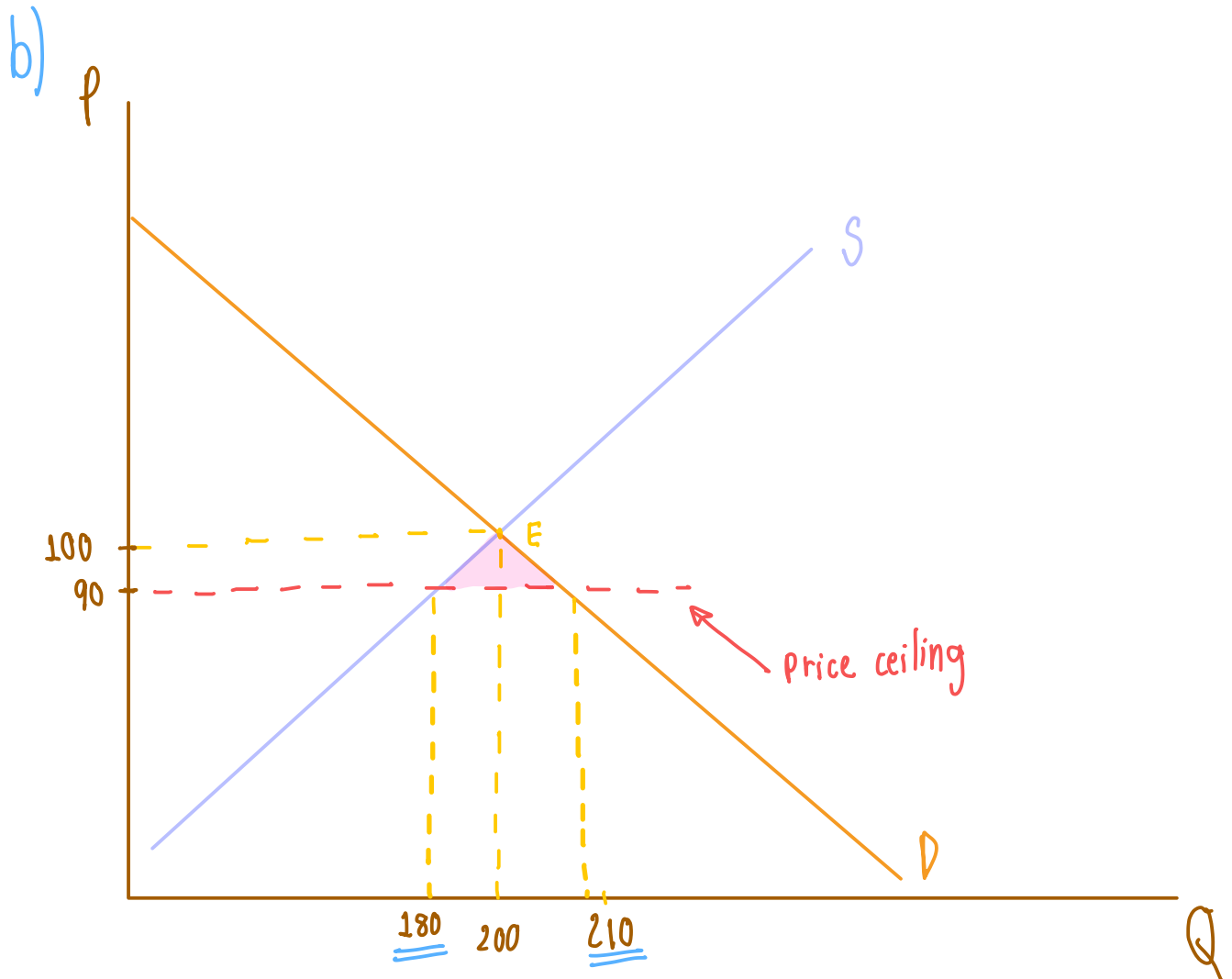
$$2P = 300 - P$$

$$3P = 300$$

$$P = 100$$

∴ Equilibrium price is 100\$

Equilibrium quantity is 200 unit



If the government impose 90\$ price ceiling
a shortage will develop because at price 90\$
quantity demanded is bigger than quantity supply
(210 > 180) created exceed demand

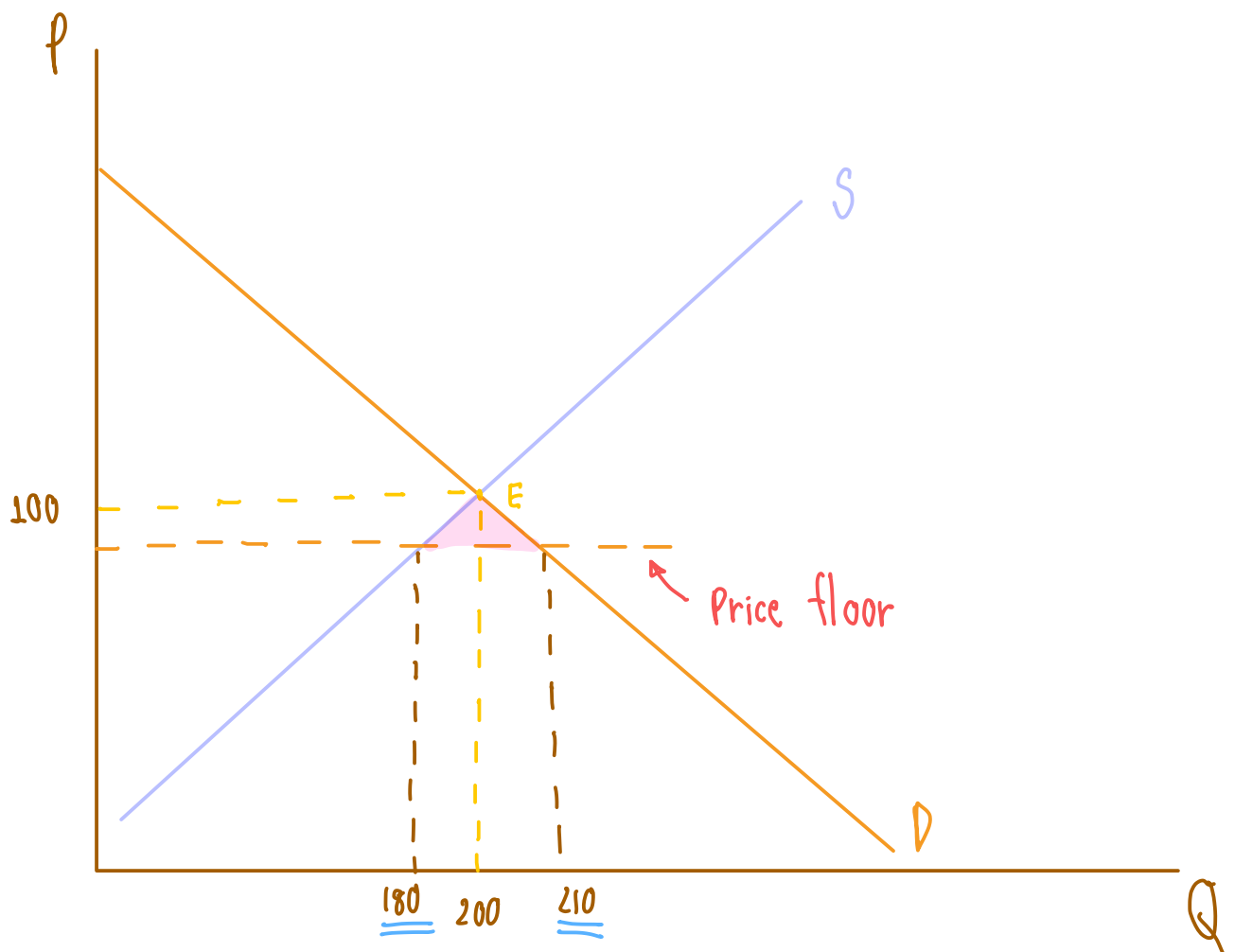
∴ Price is 90\$

quantity supply is 180 (2×90) unit.

quantity demanded is 210 ($300 - 90$) unit.

Size of shortage is 30 ($210 - 180$) unit

c)



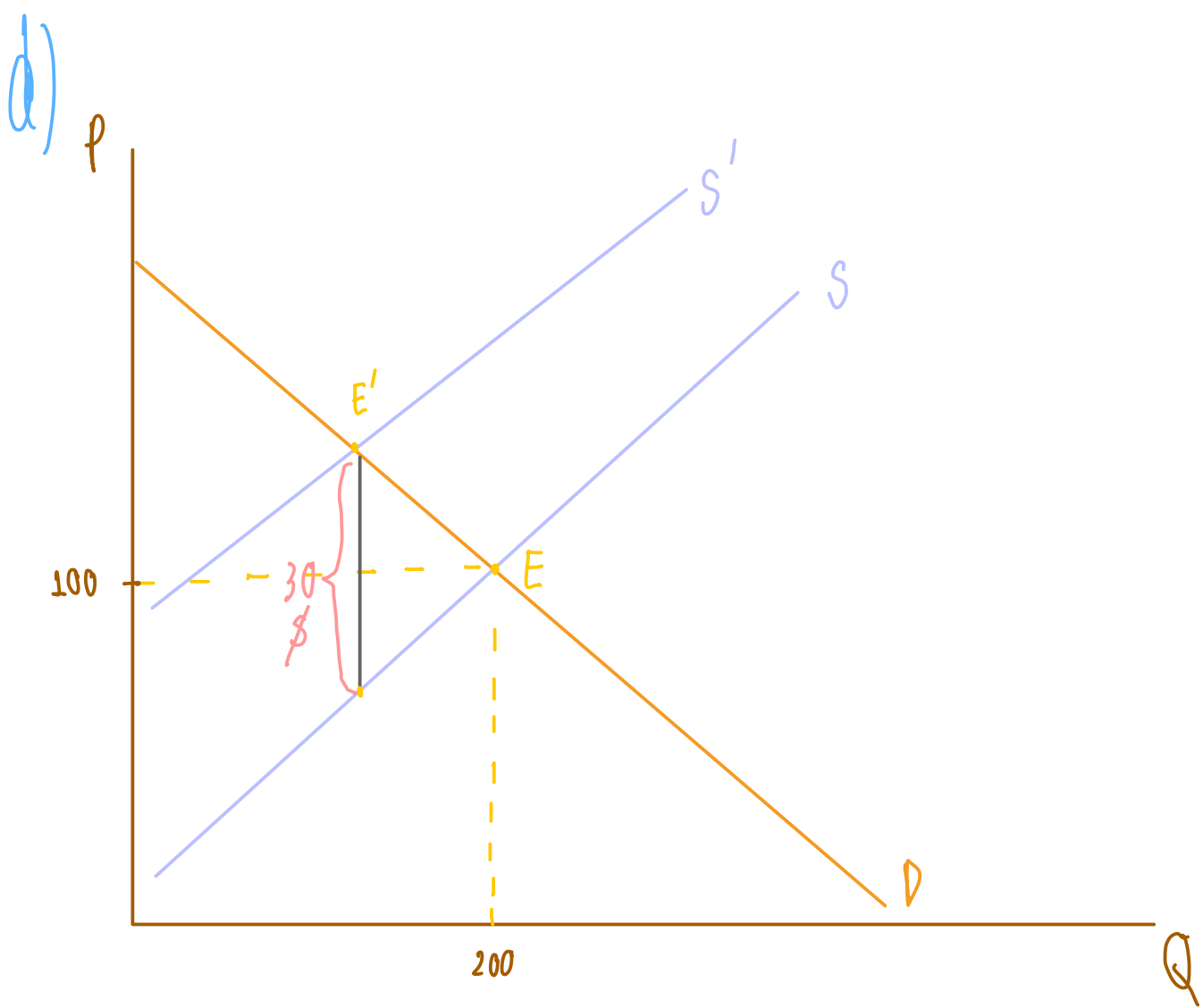
If the government impose 90\$ price floor
a shortage or surplus will not develop
because at price 90\$ quantity demanded
is bigger than quantity supply ($210 > 180$)
created exceed demand therefor the price
will rise until it meet equilibrium condition
at price 100\$ and quantity 200 unit

$\therefore$ price is 100\$

quantity demand is 200 unit

quantity supply is 200 unit

Size of shortage or surplus is 0



the government levies a tax on producers
of 30 \$

new supply curve $Q^S = 2(p - 30)$

neither Shortage and surplus develop

new equilibrium

$$Q^S = Q^D$$

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

$$2p - 60 = 300 - p$$

$$3p = 360$$

$$p = 120$$

$\therefore$ price is 120 \$

quantity supply is 180

quantity demanded is 180

Size of shortage or surplus is 0