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:

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

   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?

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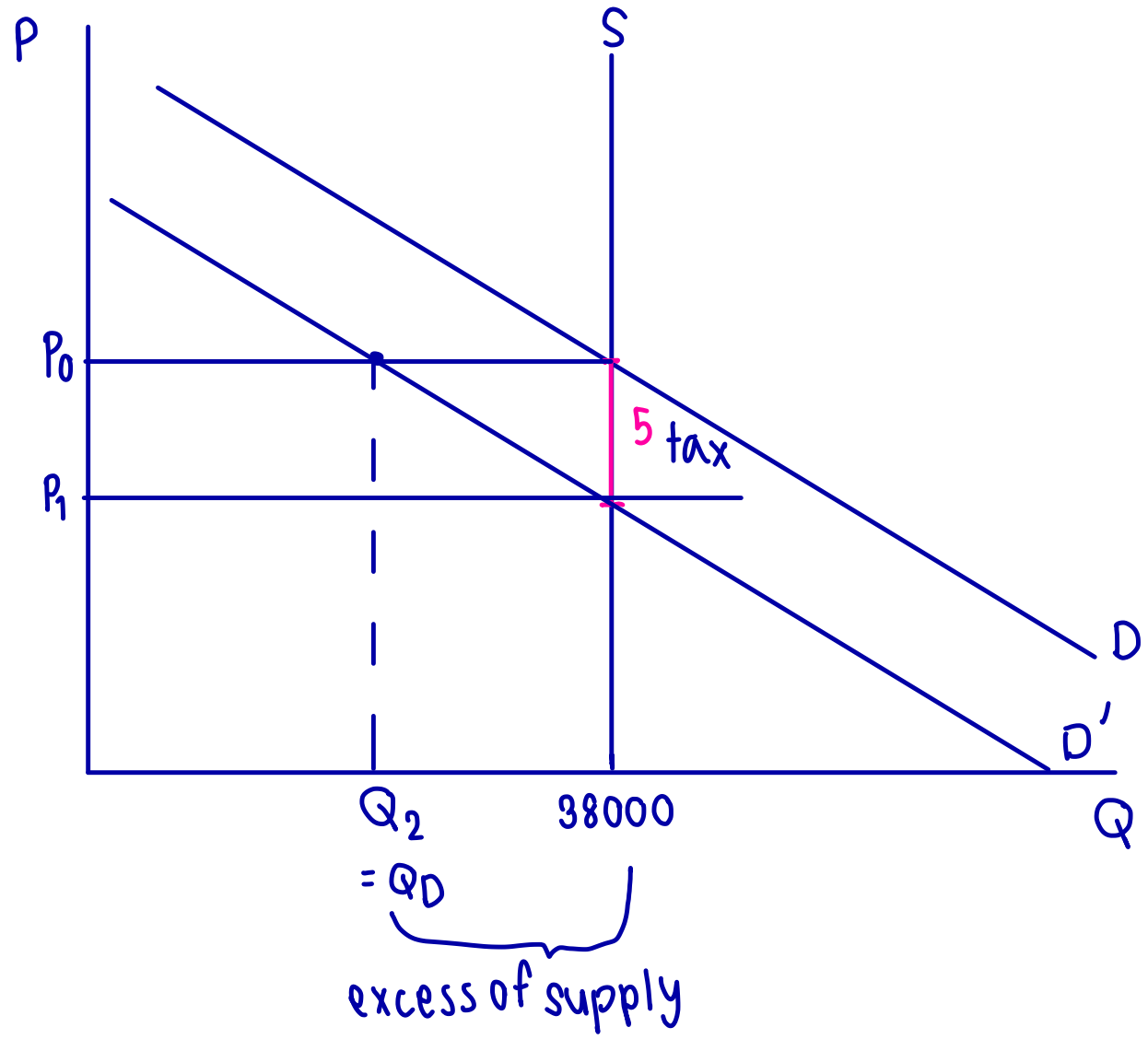
9.



According to the graph, the original price and quantity is P_0 and Q = 38000.

After there is a tax levied for 5 bath / tickets it makes demand decrease from D shifts D' at P_0.

Now the quantity demand is at Q_1 but quantity supply is still the same at $Q = 38000$ so there is an excess supply $38000 - Q_1 => 0$. The price will be falling until there is no excess supply.

Price after taxation of consumer is the same at P_0, however the seller recieve less price for 5 bath at P_1 instead.

Therefore, the tax burden is fully at seller.

$$\frac{n_S}{|n_D|} = \frac{5}{0} = 0$$

0 is perfectly inelastic so buyer fully bear with tax.

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Does a shortage or surplus (or neither) develop? What are the price, quantity supplied, quantity demanded, and size of the shortage or surplus?

a) $2P = 300 - P$

$3P = 300$

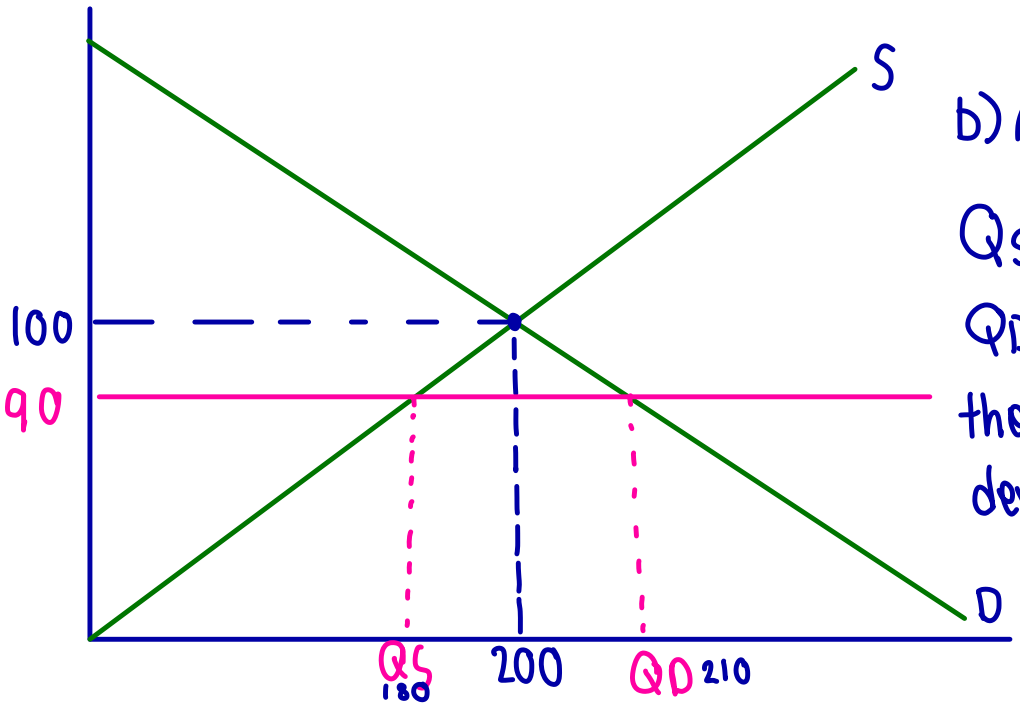
$P = 100$

$Q = 2(100) = 200$

At equilibrium (200, 100)

$P = \frac{1}{2}Q^3$

$P = 300 - Q^D$



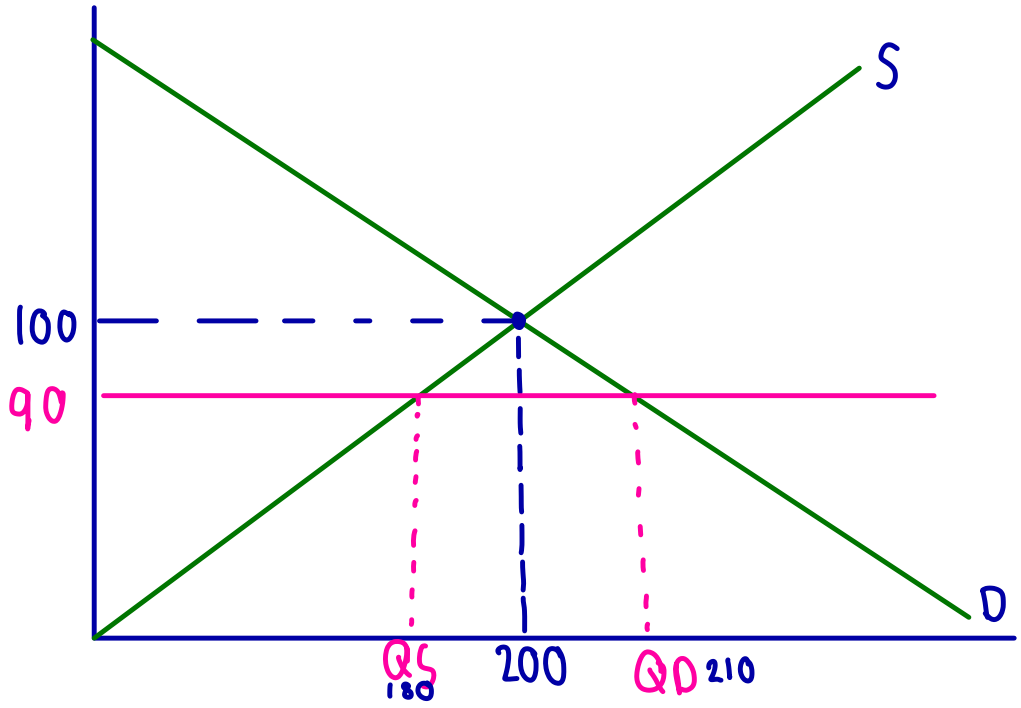
b) At $p = 90$

$Q_S = 2(90) = 180$

$Q_D = 300 - (90) = 210$

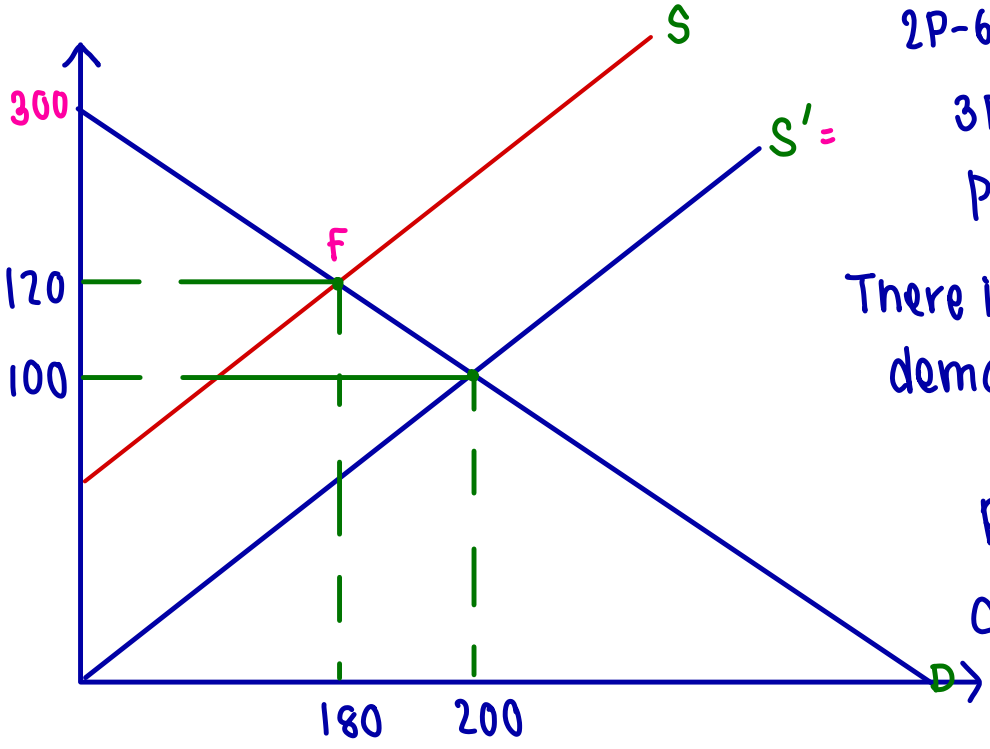
there is an excess demand $Q_D - Q_S > 0$ $(210 - 180 = 30)$

c)



when government creat price floor there would not be any shortage or surplus b/c there is no effect.

d)



equilibrium

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

$2P-60 = 300-P$

$3P = 360$

$P = 120, Q = 180$

There is an excess demand at 200-140 =60 so the price will keeps decreasing until there is no excess