Supply, demand and government policies (Tutorial 4)

Continuous exam 1

- 1)Why is the individual demand horizontal in perfect competition? At what price does the competitive firm make losses and why?

Continuous exam 2

- 2)How is the competitive firm’s short-run supply curve determined and why? How is the competitive firm’s long-run supply curve determined and why?

Key objectives

- Understand profit-maximization behavior of firms (from last tutorial)
- Understanding the efficiency effects of government interventions
- Government actions: price ceiling, price floor, taxes (specific and ad valorem), subsidies
- The role of elasticity in determining tax incidence

Question 3-What is the profit maximizing quantity of production?

- This is question 3 on the exercise sheet on BB.
- What quantity will the firm produce given the following cost and revenue scheme?

Quantity	Total Revenue	Total Cost	Fixed Cost	Variable Cost	Profit	Marginal Revenue	Marginal Cost
0	0	3	3	0	-3	-	-
1	7	5	3	2	2	7	2
2	17	8	3	5	9	10	3
3	27	12	3	9	15	10	4
4	37	17	3	14	20	10	5
5	47	23	3	20	24	10	6
6	57	33	3	30	24	10	10
7	67	47	3	44	20	10	14

Question 4 (Question 8 from Problems and applications on page 186)

The costs of producing smart phones has fallen in the past few years. Let us consider some implications of this fact.

- Use a supply-and-demand diagram to show the effect of falling production costs on the quantity and price of smart phones sold.
- Show what happens to the consumer and producer surplus.
- Assume the supply of smartphones is very elastic. Who benefits most from the falling costs?

Question 2

- Assume the demand for good A is given by P = 3 – 2Q, where P is the price and Q is the quantity demanded. The supply of good A is given by P = 1 + 2Q.
- Find the equilibrium price and the equilibrium quantity.
- Assume that the government imposes and tax of 1 euro on the sellers of the good. What the quantity sold after the tax? What is the price that consumers pay? What is the price that producers receive? Who bears the tax burden the most?
- Draw a graph depicting demand and supply and the price and quantity before and after the tax.
- On your graph in part b above, indicate the area depicting the tax revenue, the consumer surplus after the tax is imposed, the producer surplus after the tax is imposed and the deadweight loss.

Question 2

- equilibrium price and the equilibrium quantity

$$3-2Q^e = 1+2Q^e \rightarrow Q^e = 0.5$$
$$P^e = 3-2Q^e = 1+2Q^e = 2$$

- Assume that the government imposes and tax of 1 euro on the sellers of the good. What the quantity sold after the tax?

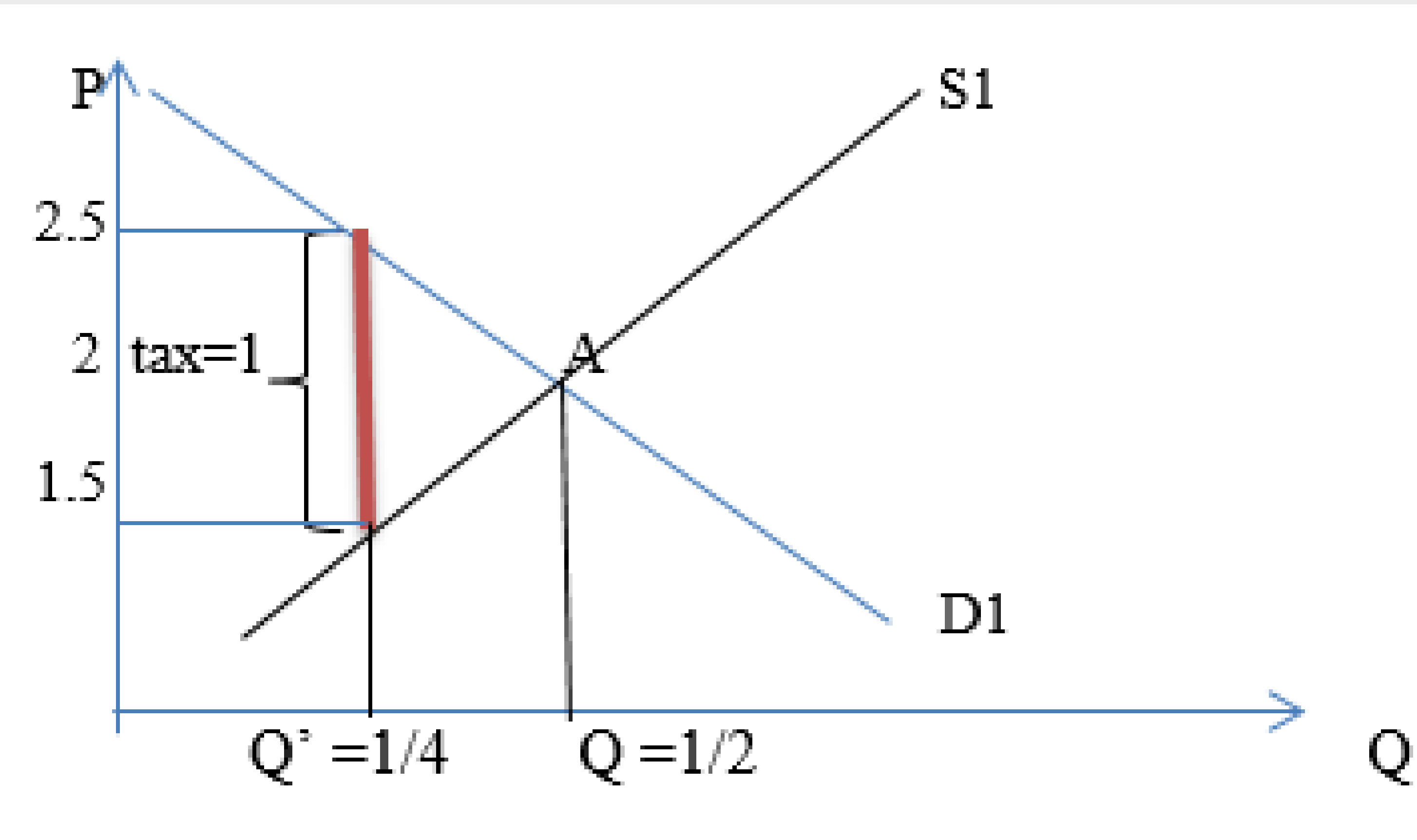
$$tax = P^{cons} - P^{prod} = 3-2Q-1-2Q = 1 \rightarrow 4Q = 1 \rightarrow Q = 0.25$$

- consumers pay 2.5, producers receive: 1.5

$$P^{cons} = 2.5, P^{prod} = 1.5$$

- Who bears the tax burden the most? They will equally share it:

$$T^{cons} = 0.25(P^{cons} - P^e), T^{prod} = 0.25(P^e - P^{prod})$$


P
S1
2.5
2
tax=1
A
1.5
D1
Q' =1/4
Q =1/2
Q

Question 1

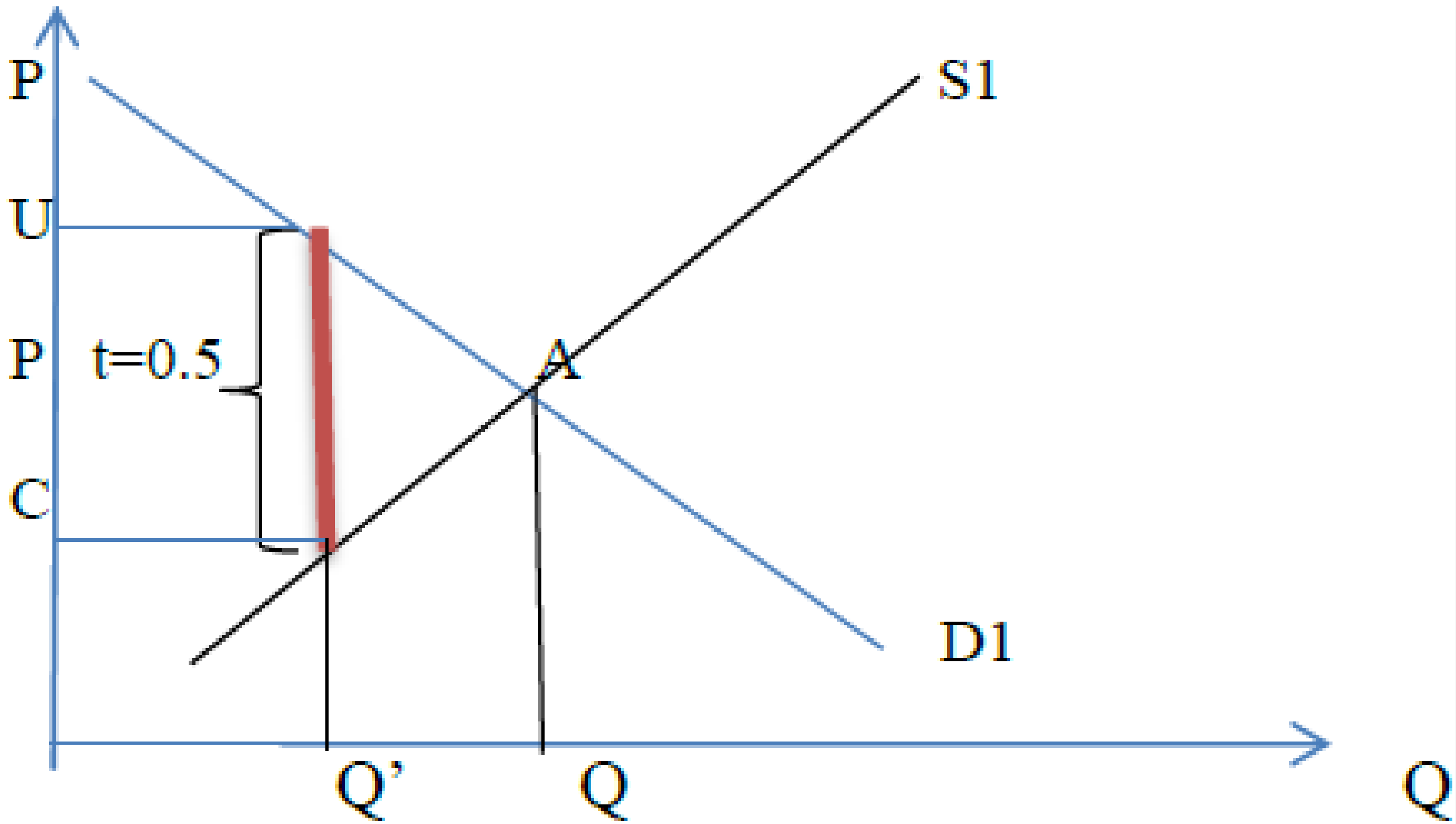
Assume that the market for iPad is at equilibrium. Assume also that the US government imposes a tax on Apple of 0.50p for each iPad sold. If the supply for iPads is described by P = a + bX, where P is the price of an iPad and X is the quantity demanded. In detail, and by using a graph, describe what will happen in the market for iPads;

a. Under unit price elasticity of demand and supply (i.e. Th supply and demand curves have h same slope in absolute terms).

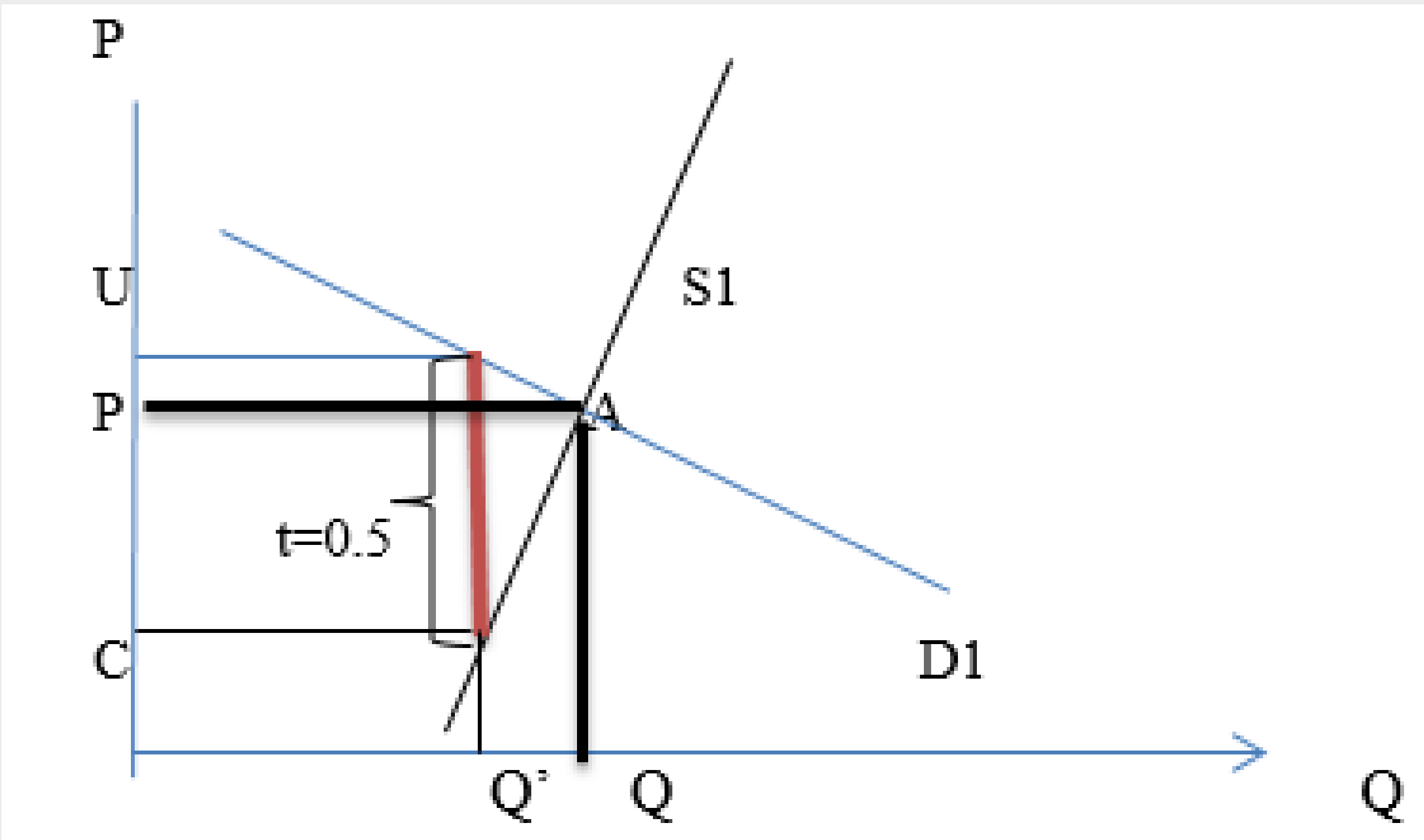
b. Under an elastic demand and inelastic supply.

c. Under inelastic demand and elastic supply.

d. Who bears the tax burden the most?



P
S1
U
P
t=0.5
A
C
D1
Q'
Q
Q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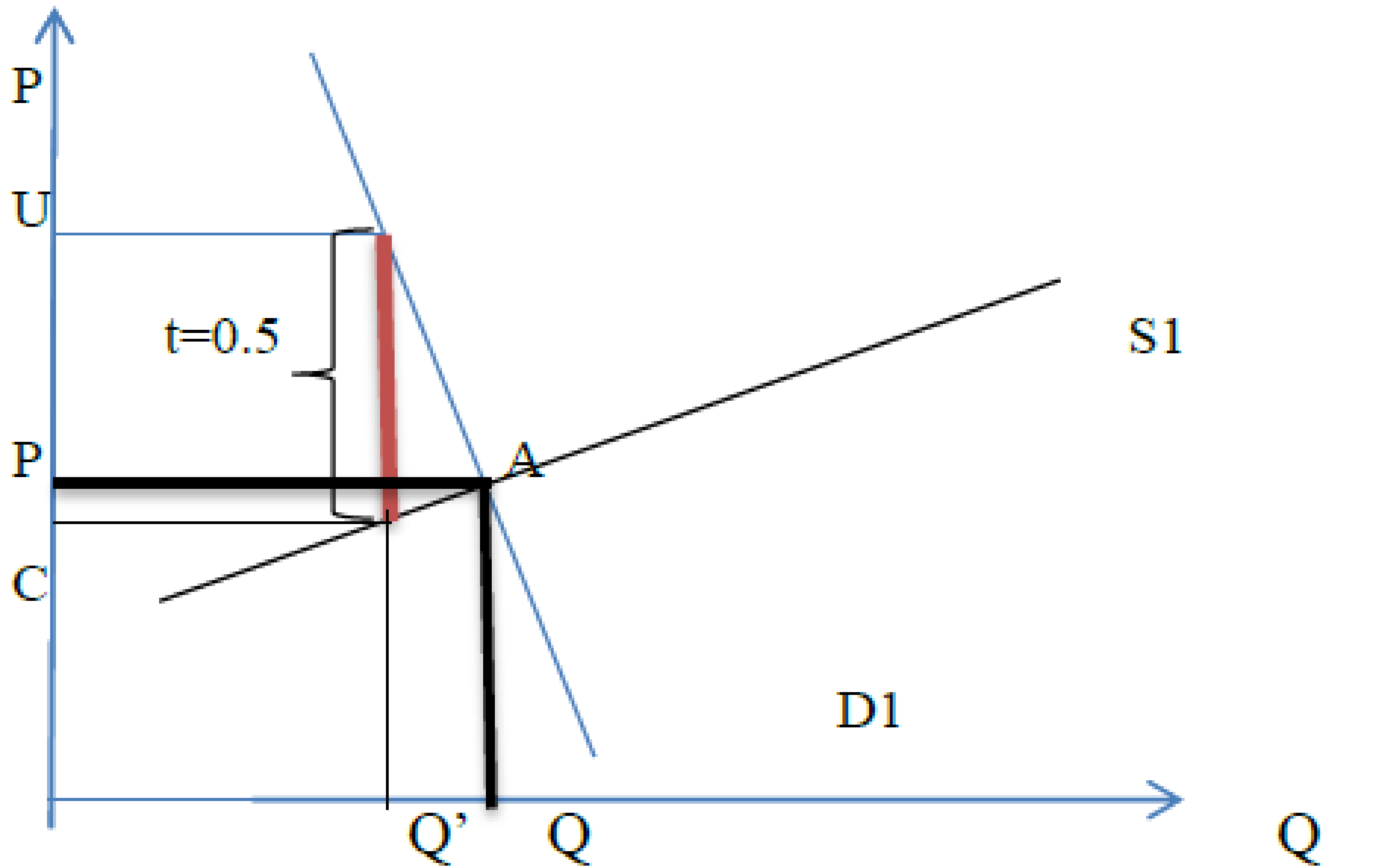

P
U
t=0.5
S1
P
A
C
D1
Q'
Q
Q

Problem 8.2

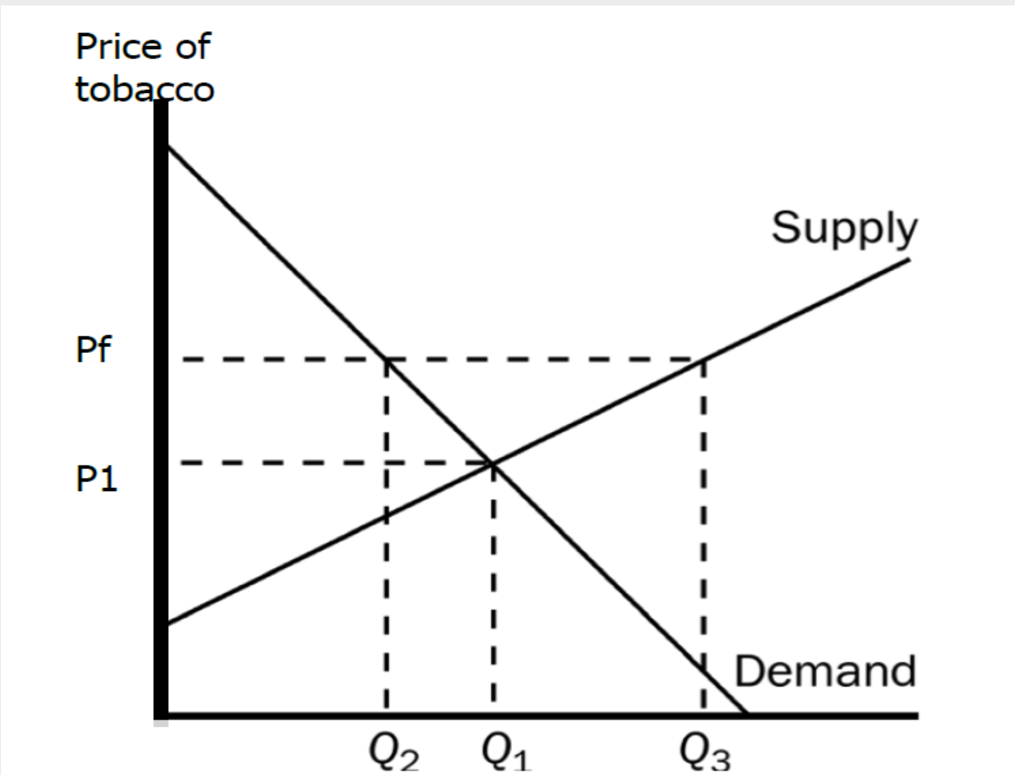
The government has decided that the free market price of tobacco is too low.

a) Suppose the government imposes a binding price floor in the tobacco market. Use a diagram to show the effect on the price and quantity. Is there a shortage or surplus? What does the market outcome depend on?

b) Tobacco producers complain that the price floor has reduced their total revenue. Is this possible? Why?

c) In response to producers’ complaints, the government agrees to purchase all of the surplus tobacco at the price floor. Compared to the basic price floor, who benefits from this new policy? Who loses?

8.2a



There is a surplus at the market: Q_3-Q_2

8.2b

- It depends on the price elasticity of demand. If demand decreased less in relative sense than price increased, their revenue actually must have increased. If demand was elastic, then they are correct. Why?
- Becuse if the demand is price inelastic, say its elasticity is 0.8, then with every 1% increase in price, demand decreases by 0.8% only. Hence the total revenue will increase by roughly 0.2%.
- If elasticity is 1.2, then total revenue will decrease by about 0.2% for every 1% increase in price.

8.2c

- Such a policy would benefit the producers, who would then be able to sell all their goods. The consumers would not be better off, since they would still consume the same amount. The taxpayers would certainly loose, independently if they smoke or not, since the government would need to finance the tobacco purchases from taxes.