

Eco 1104F Assignment 2

Answer Key

Question 1 (16 Points)

(2 points) A) Rearrange Demand function:

$$P = 55 - \frac{1}{2}Q_d$$

Since the demand function measures private benefit, we can add the external benefits to get the total social benefit function

Social value function is

then $P = 60 - \frac{1}{2}Q_d^s$

1 point
for description
of what we are
doing

(It is fine if they
show adding 5 to
the $P = Q_d$ function)

1 point

B)
(3 points)

Private market equilibrium is
where $Q_d = Q_s$ ← 1 point

$$110 - 2P = 2P$$

$$110 = 4P$$

$$P^* = 27.5$$
 1 point

$$Q_s = 2P$$

$$Q^* = 2(27.5)$$

$$Q^* = 55$$
 1 point

The private market equilibrium for
Rose bushes will be 55 rose bushes
sold for a price of \$27.50

C)

Socially optimal equilibrium where

$$Q_d^s = Q_s$$
 1 point

$$60 - \frac{1}{2}Q = \frac{1}{2}Q$$

$$Q^s = 60$$
 1 point

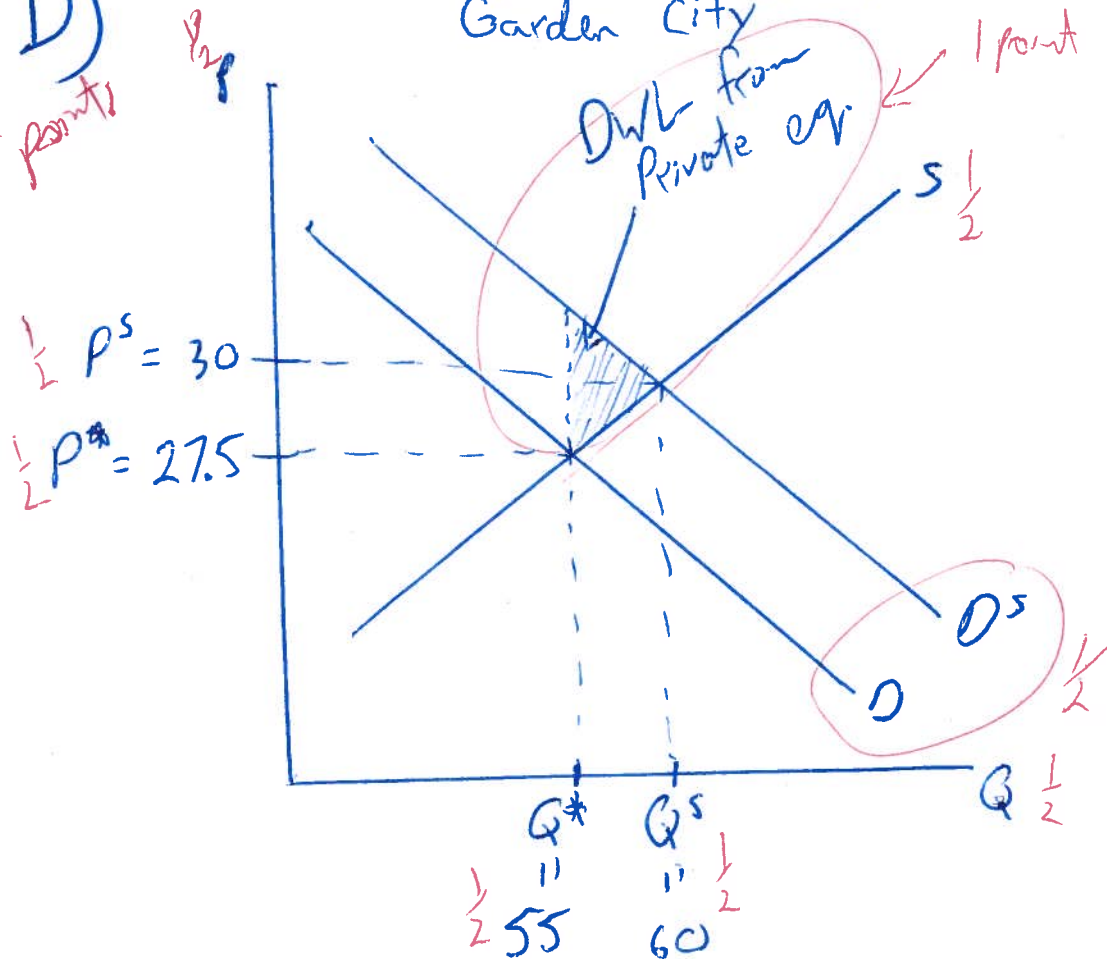
$$Q^s = 2P^s \Rightarrow 60 = 2P^s$$

$$P^s = 30$$
 1 point

The socially
optimal amount
of rose bushes is
60. They will
sell for a
price of \$30

market for Rose Bushes in Garden City

D) 5 points



A) The town should offer a subsidy of \$5 to everyone who

E) The town should offer a \$5 per rosebush for everyone that buys and plants them. [\$5 is equal to the social benefit of planting an additional rose bush. This will internalize the positive externality, and the socially optimal number of rose bushes will be planted.]

Question 3 (18 points)

2 points

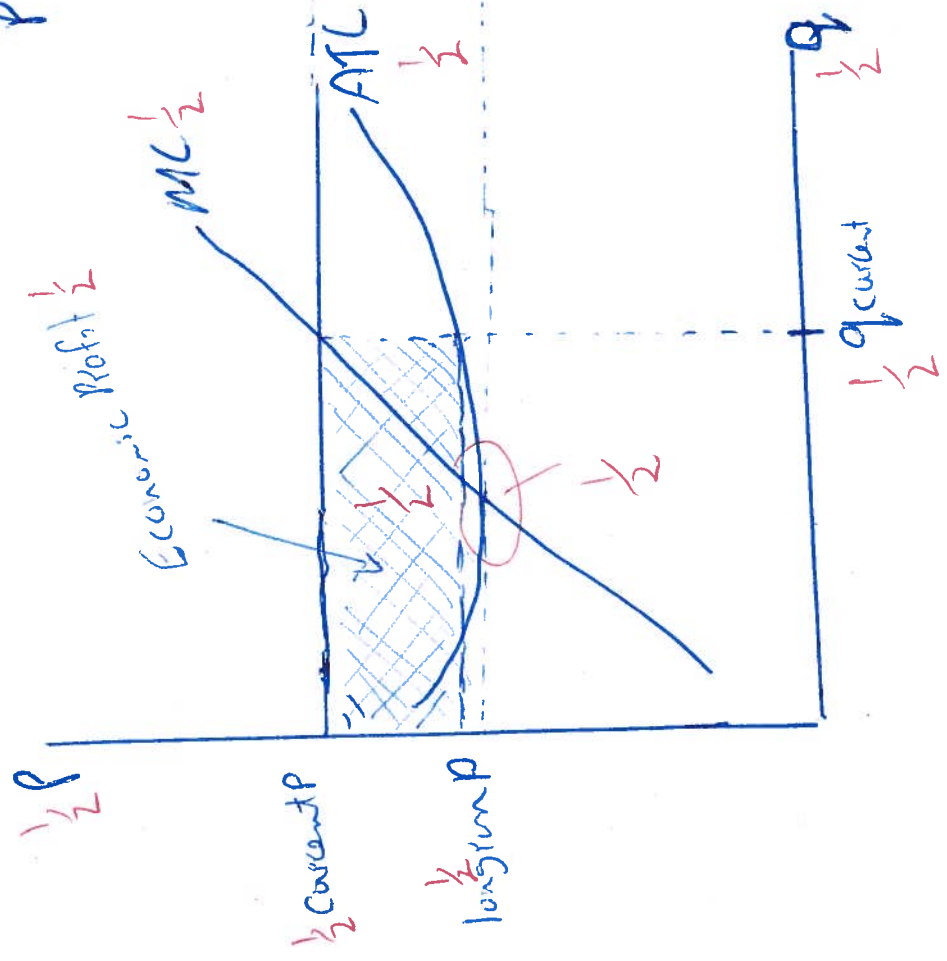
A)

If Susan and I are making an economic profit, that that means our current price is higher than our average total cost. 1 point

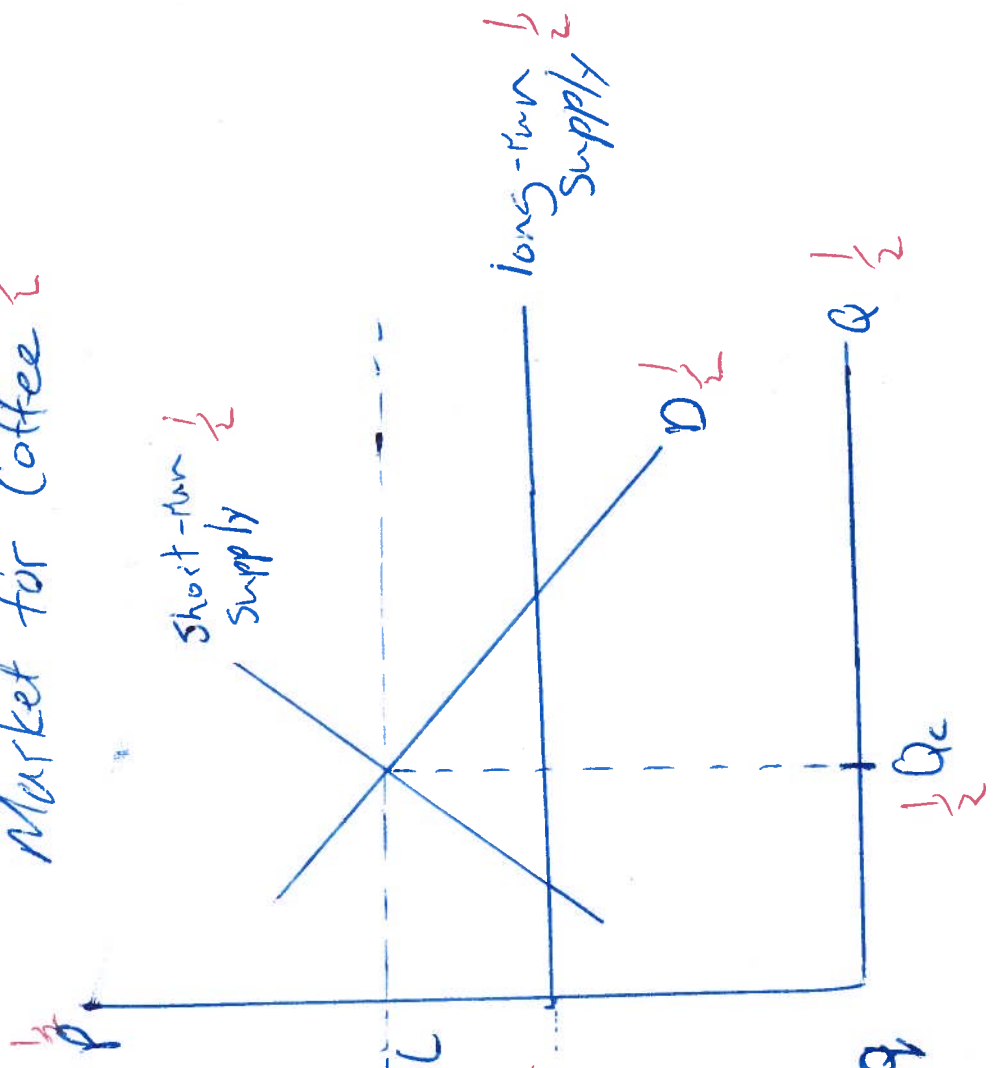
We are not producing where ATC is minimized. If price is above ATC, then we have incentive to increase ~~production~~ production past the point where ATC is lowest up to the point where $MC = Price$. 1 point

Q1
Costly

b) My small coffee shop



Market for Coffee



c) ^{2 points} [I expect ^{1 point} that the economic profit would not last.] [If there is an unusually large profit to be made from opening a coffee ^{1/2 point} shop, then several people will do so.] [As more coffee shops are opened, the supply will increase, competition ^{1 point} will increase, and the price will be lowered. As market price falls, so to will my Economic profit.]

d) ^{4 points} [More coffee shops being opened would ~~the~~ ^{1 point} increase supply] [which would be represented by shifting the short-run market supply curve, (in the market diagram) right. The supply curve ^{2 points} will shift to the point where short-run supply, long-run supply, and demand all intersect at the same place. As supply shifts, the market price will move down.] [Since I am a price taker, I will not be able to ^{1 point} charge more than the market price, and my price will fall as well.]

* If they show with a graph that is fine

E) ^{1/2 point} (In the long run, I would expect coffee sales at my shop to go down.)

Currently I am producing more than the cost minimizing amount due to the ~~temp~~ ^{1/2 point} ~~current~~ current high price

As price goes down, I will produce less until I reach the point where I am producing at the lowest possible Average total cost.