Group 9 Members

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EE375 : Assignment 2 (Group 9)

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Question 1 :

a) find P^* and Q^*

by $P = MC_S$

$360 - 4Q = 6Q + 2Q$

$360 = 12Q$

$Q^* = 30$

$P^* = 360 - 4(30)$

$P^* = 240$

b) find P_p and Q_p

by $P = MC_p$

$360 - 4Q = 6Q$

$360 = 10Q$

$Q_p = 36$

$P_p = 360 - 4(36)$

$P_p = 216$

c) Find tax level

from tax = external cost

tax = marginal damage

tax = 2Q

use $Q_p = 36$

$\therefore$ Tax $= 2(36) = 72$

d.) Calculate DWL

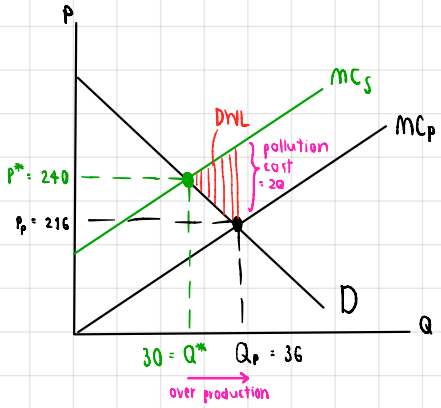
from $\frac{1}{2} \times$ base $\times$ height

$= \frac{1}{2} \times 2Q \times 6$

$= \frac{1}{2} \times 2(36) \times 6$

$= 216$

e.) drawing a graph



Demand Curve : $P = 360 - 4Q$

Supply curve : $MC = 6Q$

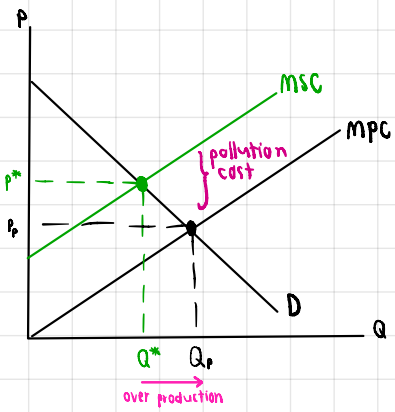
marginal damage : $2Q$

Question 2 :

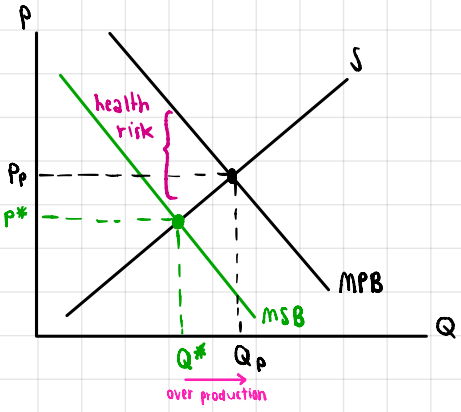
a) increases water pollution = Effect on MC as MSC > MPC → MSC = MPC + water pollution cost

put their neighbors at health risk = Effect on MB as MPB > MSB → MSB = MPB - health risks

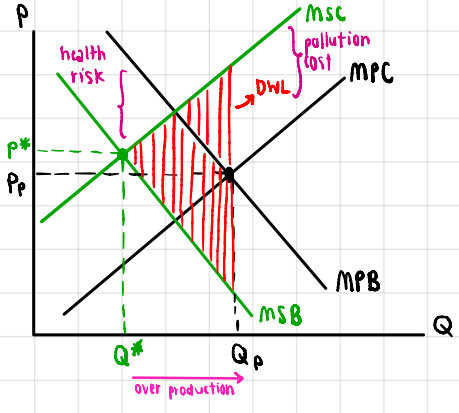
increase water pollution



put their neighbors at health risk



combine



- Cigarette firm will produce at P_p and Q_p if they want to maximize profit. However, it will generate the external cost to the society since it creates the water pollution and the firm will encounter the over production.
- At the optimal level (Q^*, P^*) there will be no external cost and over production since firm produce less, but it will generate the deadweight loss.

b) Implementing a tax is the policy that can reduce deadweight loss. Lower consumer welfare and producer profitability, or "deadweight loss", are consequences of higher cigarette prices. Increased cigarette prices can dissuade cigarette smokers to smoke less. Raising taxes is thus one of the most successful strategies in the tobacco market.