EE375: Applied Economics for Natural Resources and Environment
Assignment 2 (Group)
Due on Tuesday August 30, 2022

Question 1:

Suppose that the demand curve derived from marginal benefit associated with a consumption of chocolate is 360 – 4Q and the marginal cost of chocolate production is 6Q. The marginal damage from pollutions generated by chocolate production is 2Q

a) Find the social optimum or efficient production level (P*, Q*)
b) Find the private equilibrium price and quantity when external costs could be ignored by firms
c) What tax level should be set to achieve the efficient/social optimal
d) Calculate deadweight loss from externalities in this case
e) Drawing a graph to illustrate the result from a) to d)

Question 2:

The production of cigarettes increases water pollutions while the consumption of cigarettes can put their neighbors at health risks (Hint: Impact on social marginal benefits as a whole)

a) Explain how externalities in this case create inefficiencies in the cigarette market and draw a graph to illustrate your explanation, including the market equilibrium for cigarettes at i) socially optimal level, P* and Q*; ii) private optimal level (P_p and Q_p) when externalities are not internalized by both firms and consumers and; iii) the deadweight loss area.
b) What policies could be considered to reduce deadweight loss in this case and describe the effects of such policies in the cigarette market.