Homework 3
Due Tuesday February 24, 2014
Economics of Sustainability
K Foster, Colin Powell School CCNY, Spring 2015

You are encouraged to form study groups to work on these problems. However each student must hand in a separate assignment: the group can work together to discuss the papers and comment on drafts, but each study group member must write it up herself/himself. When emailing assignments, please include your name and the assignment number as part of the filename.

1. What are the names of people in your study group?

2. Provide some interesting and creative examples of
   a. Negative externalities from consumption and social policies to affect these
   b. Negative externalities from production and social policies to affect these
   c. Positive externalities from consumption and social policies to affect these
   d. Positive externalities from production and social policies to affect these

3. Consider the market for a product with an output that pollutes the air. The industry's Supply curve (only including private internal costs) can be represented as $Q_S = P_S$. The demand can be approximated as $Q_D = 80 - P_D$. The industry's marginal external costs from pollution occur as MEC = Q.
   a. What is the privately chosen equilibrium quantity and price, when neither demanders nor suppliers take account of external costs?
   b. What is the MSC, the marginal social cost (the vertical sum of MC and MEC)?
   c. What is the social optimum level of production of this good? What is the deadweight loss created by a lack of government action?
   d. Suppose the government introduced a tax (per unit of output) to try to move closer to optimum. (Recall that this means that $P_D = P_S + Tax$.) What tax would reduce DWL the most?
   e. If the government instead restricted the level of output through regulation, what regulation should be set?
   f. Can you suggest any alternate policies (perhaps a tax on production over a particular level)?