Econ_101_Spring 2007_IVY Tech College
Homework_08_Chapte_08: Solutions

1. A three person city is considering a fireworks display. Bertha is willing to pay $100 for the proposed fireworks display; Marian is willing to pay $30; Sam is willing to pay $20. The cost of the fireworks display is $120.
   a. Will any single citizen provide the display on his or her own?
   No. The $120 cost exceeds any one of the individual benefits (willingness to pay).
   b. If the cost of the fireworks display is divided equally among the citizens, will a majority vote in favor of the display?
   No. Per person cost (120 / 3= 40) will exceed both Marian's and Sam's willingness to pay, hence, they will vote it down.
   c. Describe a transaction that would benefit all three citizens.
   Bertha makes an agreement with the other two to charge them a $20 admission each and provides the fireworks display by herself.

3. Use a supply and demand graph to show a situation in which the equilibrium quantity of a polluting good is 20 tons, but a pollution tax decreases the equilibrium quantity of the good to zero. Is this situation likely to occur?
   The demand curve intersects the supply curve at 20 units per day. The pollution tax shifts the supply curve by such a large amount that the supply curve lies entirely above the demand curve. For this to occur, the spillover cost from the pollutant must be very high, the cost of abatement must be very high, and the demand for the good must be relatively low.

5. Use the notion of adverse selection to explain a classic quip from Groucho Marx: "I won't join any club that is willing to accept me as a member."
   Suppose Groucho wants to join a social club to associate with people who are richer than he is, and he assumes that the other people join the club for the same reason. A club will invite him to join only if he would increase the average income of the club. In other words, Groucho will only be invited to join groups in which most people are poorer than he is, clubs with an adverse selection of people. The same reasoning applies if Groucho wants to associate with people who are wittier than he is, and he assumes other people feel the same way.

8. Scientists have recently developed new genetic tests that could be used by an insurance company to determine whether a potential customer is likely to develop certain diseases. Discuss the tradeoffs associated with allowing insurance companies to use these tests.
   Like the lie detector, the genetic tests eliminate the adverse selection problem, this time for insurance companies. The insurance companies will charge higher prices to those who are likely to contract diseases, and lower prices to those who are not.

11. Many professional athletes purchase insurance against career-ending injuries. Would you expect the insured players to act differently from those who don't have insurance?
   Yes. Insured athletes are likely to play less carefully, knowing that the insurance company will compensate them for a career-ending injury.