100 points. Allocate your time efficiently.

1. Each of the events below has an impact on the market for bicycles. For each event, which curve is affected (supply or demand for bicycles), what direction is it shifted, and what is the resulting impact on the market clearing price and quantity for bicycles?

   a. An increase in the price of gasoline.

   b. A decrease in income of consumers.

   c. An increase in the price of steel and aluminum used to make bicycle frames.

   d. An environmental movement shifts tastes away from driving automobiles.

   e. A technological advance in the manufacture of bicycles.

   f. A reduction in the price of bicycle helmets.

2. Suppose that an acre of land in Iowa can yield either 50 bushels of wheat or 100 bushels of corn, while an acre of land in Oklahoma can yield either 20 bushels of wheat or 30 bushels of corn.

   a. What is the cost of growing 200 bushels of wheat in Iowa? What is the cost of growing 200 bushels of wheat in Oklahoma? Which state has a comparative advantage in growing wheat?

   b. Which state has a comparative advantage in growing corn?

   c. Suppose that the residents of Iowa eat 200 bushels of wheat and 360 bushels of corn, and that the residents of Oklahoma also eat 200 bushels of wheat and 360 bushels of corn. If there is no trade between the states, how many acres must each state devote to agriculture?

   d. In part c, suppose the states begin to trade, with each specializing in its area of comparative advantage. How many acres of Iowa farmland is freed up for other uses? How many acres of Oklahoma farmland?

3. Residents of your city are charged a fixed weekly fee of $6 for refuse collection. They are allowed to put out as many cans as they wish. The average household disposes of three cans per week in this way.

   Now suppose that your city changes to a “tag” system. Each can of refuse collected must have a tag affixed to it. The tags cost $2 each. What effect do you think the introduction of the tag system will have on the total quantity of trash collected in your city? Explain.

4. You are an economist for the City Subway Commission. Presently the price of a subway ride is $0.80, and 250,000 seats are filled weekly. The Commission has just approved a subway price increase of $0.10 per ride. The Commission wants to know if it can use the opportunity to retire
two aging subway cars that each provides 5,000 seats weekly. An economist informed the Commission that the price elasticity of demand for subway rides is -0.40.

When the price hike goes into effect, can neither, one, or both cars be retired?

5. Early in the development of economic science, social philosophers contemplated what was to them an important question: "How can water, which is quite valuable to use, command such a low price when diamonds which are less useful, command such a high price." This apparent inconsistency between the relative prices and values of water and diamonds became known as the "water-diamond paradox." Please explain how the water-diamond paradox can be resolved.