1. Assume that a hypothetical study shows that a speed limit of 55 MPH, rather than 65 MPH, on the nation’s highways saves lives and fuels. Is there any cost in keeping the speed limit at 55 MPH?

2. You have just purchased a new Ford Taurus for $20,000, but the most you could get for it if you sold it privately is $15,000. Now you learn that Toyota is offering its Camry, which normally sells for $25,000, at a special sale price of $20,000. If you had known before buying the Taurus that you could buy a Camry at the same price, you would have definitely chosen the Camry. True or false: From what we are told of your preferences, it follows that you should definitely sell the Taurus and buy the Camry. Explain.

3. You won a free ticket to see an Alice Cooper concert that you were willing to pay up to $30 to see. But Richie Kotzen is performing on the same night. Tickets to see Richie cost $40. On any given day, you would be willing to pay up to $60 to see him. Assume there are no other costs of seeing either performer and that you are not income constrained. Given this information, answer the following questions:
   a) What is the opportunity cost of seeing Alice Cooper?
   b) What is the total cost of seeing Richie Kotzen?
   c) What is the economic surplus of going to Alice Cooper’s concert?
   d) What is the economic surplus of going to Richie Kotzen’s concert?
   e) Which concert should you attend? Why?
   f) Suppose that you’ve already bought a ticket to see Richie Kotzen, because you did not know that Alice Cooper would be performing on the same night. A friend of yours just gave you the free ticket to see Alice Cooper and informed you about the time conflict between the two concerts. Which concert should you attend now? Has your decision changed? Why?
   g) Suppose that you’ve already bought a ticket to see Richie Kotzen, but lost it (obviously, this means you will have to buy another ticket if you decide to see him). In addition, assume that this time you did not win the free ticket to see Alice Cooper. Tickets to see Alice Cooper cost $20. Which concert should you attend?
   h) In the original situation, would your decision change if you had lost the free ticket? Why?

4. Explain why the optimal decision happens when marginal benefit equals marginal cost.

5. From the perspective of marginal analysis, why is it irrational to continue to fight a war that has no future prospect of success just because many people have already died from it?

6. In the workplace, it is common to see the following sign posted: “No job is so important and no service is so urgent that we cannot take time to perform our work safely.” What is the problem with this message?
7. Give four reasons for why allocating goods based on willingness-to-pay is probably superior to allocations based on ability-to-pay.

8. The meal plan at university A lets students eat as much as they like for a fixed fee of $500 per semester. The average student there eats 250 pounds of food per semester. University B charges $500 for a book of meal tickets that entitles the student to eat 250 pounds of food per semester. If the student eats more than 250 pounds, he or she pays $2 for each additional pound; if the student eats less, he or she gets a $2 per pound refund. If students are rational (and logically consistent), at which university will average food consumption be higher? Explain.

9. A hypothetical market is composed of three buyers and three sellers. Each buyer’s wtp is given by: wtp1 = $3, wtp2 = $6, and wtp3 = $10. Each seller’s wta is given by: wta1 = $5, wta2 = $8, and wta3 = $12. Find the equilibrium price and the equilibrium quantity. Then, calculate total consumer surplus.

10. Why isn’t knowing the cost of producing a good sufficient to predict its market price?

11. What will happen to the equilibrium price and quantity of fish if fish oils are found to help prevent heart disease?

12. What will happen to the equilibrium price and quantity of apples if apples are discovered to help prevent colds and a fungus kills 10% of existing apple trees?

13. Why doesn’t a tax of $6 increase the price by the same amount? Why doesn’t a subsidy of $6 decrease the price by the same amount?

14. In the cases analyzed in class, why are taxes inefficient? Why are subsidies also inefficient?

15. Why might the loss in total economic surplus directly experienced by participants in the market for a good that is taxed overstate the overall loss in economic surplus that results from the tax?

16. Suppose the weekly demand for a certain good, in thousands of units, is given by the equation P = 8 − Q and the weekly supply of the good is given by the equation P = 2 + Q, where P is the price in dollars.

   a) Find the equilibrium price and quantities;
   b) Calculate consumer surplus, producer surplus, and total economic surplus;
   c) If a price ceiling of $3 is imposed, how many units will be traded?
   d) Suppose a per-unit tax of $2, to be collected from sellers, is imposed in this market. Calculate the new price and quantity;
   e) Calculate the new consumer surplus, the new producer surplus, government revenue, and the deadweight loss;
f) What fraction of the tax is being paid by consumers? What fraction is being paid by sellers?
g) Suppose a per-unit subsidy of $2 is imposed in this market. Calculate the new price and quantity;
h) Calculate the new consumer surplus, the new producer surplus, total government spending, and the deadweight loss;
i) What fraction of the subsidy is being absorbed by consumers? What fraction is being absorbed by sellers?