

**Economics 101 – Prof. Kelly**  
**Fall 2009**  
**Homework #2**  
**Due Wednesday, September 30**

**Directions:**

Write your name, TA name, and section number at the top of each page. Please use a staple if you intend to turn in multiple sheets. Place your homework in the appropriate TA box before class on Wednesday, September 30. Late assignments will not be accepted!

**1. Badgers' practice schedule**

The Badgers football coaching staff is planning the weekly practice schedule for the 2009 season. NCAA regulations allow up to 20 hours of practice per week. The Badgers will split that time between non-football workouts in the weight room, and practicing football plays on the field. Practicing plays is important for winning games this year, while lifting is sure to pay dividends in later seasons, as players get bigger and stronger over time. The team has to do all activities together, for team unity's sake.

Given the above information, please answer the following questions:

- a) At the Badgers' production possibility frontier, what resources will they use, and how much?
- b) What are the possible allocations of those resources?
- c) Graph the Badgers' PPF. On your graph, be sure to label both axes and identify the relevant time period.
- d) Discuss how the Badgers allocation of resources this year will affect their record in 2009. Discuss how the Badgers allocation of resources this year (2009) will affect their record in 2010.
- e) Suppose you are a freshman player on the Badger football team. Which point would you choose on the Badgers 2009 production possibility frontier? Label this point F on your graph. Explain why you selected this allocation of resources.
- f) Suppose that your friend Bubba is a graduating senior on the Badger football team. Which point would Bubba choose on the Badgers 2009 production possibility frontier? Label this point S on your graph. Explain why Bubba would select this point.
- g) Suppose Lump is a lazy player on the Badger football team who plans to quit the team after the 2009 season. Identify a point that could represent Lump's desired production

point on your graph. Label this point L. Explain why this point might represent Lump's preferred point of production for the team.

## 2. Cleaning the house

You live in a house with two roommates, Nick and Cam. Nick and Cam are messy people, and sometimes you are too. The problem is, Nick and Cam despise one another. You are on good terms with each of them, but they realized in August that they're just not a match. Here's the situation: you are about to walk into class when your parents call. They're coming to visit from Waukesha! They'll be at your (very messy) house in 5 minutes. Your room is clean, but Nick's and Cam's are hideous! The whole place has to be clean or the folks won't take you, Nick, and Cam out to The Great Dane for brats. You know that Nick and Cam are both at home, so you pull out your cell phone.

From previous emergency cleanups, you know that Nick can be made to pick up 3 dirty shirts per minute. It also takes him 1 minute to dispose of 2 fast food bags (and any contents that spilled). Cam is slower. Even if forced, he'll only pick up 2 dirty shirts per minute, and cleaning up a bag of fast food garbage takes him a whole minute. To get the place clean in time, you have to maximize the use of Nick's and Cam's time. Neither roommate wants to help the other, and neither one can possibly spend more than 5 minutes on the job. When instructing them to clean up, you have to be persuasive, because they both abhor picking up food, and they really dislike going into each other's rooms. (Remember though, you can't really split up the task of picking up one shirt or the task of picking up one bag.)

Given the above information, please answer the following questions:

- a) Who should specialize in each task? Explain your answer thoroughly.
- b) Nick and Cam are both smart college students who know when they're being duped. Name a rate of exchange between the two of them that will be fair for both, and explain very clearly why you chose it. (Hint: choose an integer value for the price of one bag, measured in shirts).
- c) Suppose there are 11 shirts and 4 bags in Nick's room. There are also 2 shirts and 4 bags in Cam's room. Can they clean it all, each working for only 5 minutes? How will they fairly trade?
- d) Could Nick and Cam have cleaned up the mess described in part (c) if each of them had stuck to their own room for their 5 minutes of work? Explain your answer thoroughly.

### 3. Krugman article

According to Paul Krugman, what are some of the characteristics of a recession of the macroeconomy? What are two different strategies mentioned for dealing with recessions? Krugman tells us that there are (sometimes heated) disagreements among serious economic thinkers. What does this say about economics as a discipline?

### 4. Secondary Badger tickets

Suppose the secondary student ticket market for Badger football tickets is competitive. Ticketholders are the suppliers, and choose to either attend the game themselves or supply the ticket in the market. Non-ticketholders demand tickets. The secondary student ticket market refers to the re-selling of football tickets from the initial owner of the ticket to a new owner.

Given the above information, please answer the following questions:

- a) Give an example of an event that would shift the demand curve for secondary tickets to the Badger football game leftward. Explain your reasoning.
- b) Give an example of an event that would shift the supply curve for secondary tickets to the Badger football game rightward. Explain your reasoning.

### 5. Secondary Badger tickets

Suppose we are still analyzing the competitive secondary student ticket market for Badger football tickets. Assume there are 10,000 tickets in all. This is the quantity demanded by non-ticketholders at price \$0. Suppliers have found that if they're selling for anything less than \$120, some non-ticketholders will demand tickets. Of course, at a price of \$0, no one wants to sell their tickets. The current equilibrium price per ticket in this market is \$72. Assume that both the market demand curve and the market supply curve are linear.

Given the above information, please answer the following questions:

- a) What is the equation expressing dollar price per ticket in terms of quantity demanded (measured in tickets)? Use  $P$  to represent the ticket price, and  $Q_D$  to represent the quantity of tickets demanded. Express your equation in slope-intercept form.
- b) What is the equilibrium quantity in the secondary student ticket market for Badger football tickets?

- c) What is the equation expressing dollar price per ticket in terms of quantity supplied (measured in tickets)? Use  $P$  to represent the ticket price, and  $Q_s$  to represent the quantity of tickets supplied. Express your equation in slope-intercept form.
- d) What if a consumer protection law is enacted such that no one can sell a ticket for more than \$63 (3 times its face value)? Assume that all tickets in the secondary market are sold on eBay, making this consumer protection law completely enforceable. Describe the new equilibrium quantity and price for tickets in this market once this law is enacted. Illustrate your answer with a well-labeled graph. Is there a shortage or a surplus of tickets in this situation? Provide a numerical measure of the shortage or surplus.

## 6. Wooden toothpicks

Assume the market for wooden toothpicks is competitive. Earlier this week, in a nationally published study, 4 out of 5 dentists enthusiastically endorsed the benefits of toothpicking for dental health. At the same time, the government relaxed restrictions on logging, making wood (a raw material used in the production of toothpicks) cheaper.

- a) What will happen to the equilibrium price of wooden toothpicks?
- b) What will happen to the equilibrium quantity of wooden toothpicks?