

Lab #7
Agricultural and Resource Economics
(ARE 012)

Name: _____

Section #: _____

This lab assignment is worth 100 points. Unless instructed differently, you are to complete the lab during the lab period. Late lab assignments will not be accepted without an excused absence. Please let the lab instructor know if you need any help with this lab. Good Luck!

Purpose of Lab:

This assignment will examine the functions of an economic system and teach you how to use the opportunity cost of an activity in making decisions.

Assignments:

I. Examining the Functions of an Economic System. Answer the questions below. You may want to refer to your notebook, lecture notes, and textbook.

1. What are the five functions of an economic system as discussed in class? Identify and describe each function in detail.

2. One of the functions of an economic system is to *Provide for the Maintenance and Growth of the System*. An example of this function is as follows:

- a) Anti-Trust laws to prevent monopolies from taking advantage of consumers
- b) using prices to ration consumption
- c) assembling the factors of production to produce a good or service
- d) a government tax break on capital investments
- e) none of the above

3. A cabinetmaker decides that he will have an employee specialize in joinery. This decision represents the following function of an economic system:

- a) distributing resources, commodities, and proceeds from production
- b) organizing the production process
- c) determining what commodities to produce and how much to produce
- d) restricting consumption to the supply of resources and commodities available over time
- e) none of the above

4. A doctor usually makes more money than a mechanic. This observation reflects the following function of an economic system:

- a) determining what commodities to produce and how much to produce
- b) organizing the production process
- c) providing for the maintenance and growth of the system
- d) distributing resources, commodities, and proceeds from production
- e) none of the above

5. Consumer sovereignty refers to the following function of an economic system:

- a) determining what commodities to produce and how much to produce
- b) organizing the production process
- c) providing for the maintenance and growth of the system
- d) distributing resources, commodities, and proceeds from production
- e) none of the above

6. One of the functions of an economic system is to *Restrict Consumption to the Supply of Resources and Commodities Available Over Time*. An example of this function is as follows:

- a) the government sets a price floor, which is a minimum price for the product
- b) a law that forbids the high *slotting fees* charged by some grocery stores
- c) an increase in prices which forces some people out of the market
- d) all of the above
- e) none of the above

II. Using the Opportunity Cost of an Activity in Making Decisions. The term "opportunity cost" refers to the highest valued benefit that is foregone by choosing one alternative rather than another.

For example, let's assume that the most profitable use for a plot of land is raising corn. The next most profitable use for the land is raising soybeans. Under these circumstances, the opportunity cost of planting corn is equal to the profit that is foregone by not planting soybeans. This is because the maximum benefit that is foregone when the farmer plants corn is the profit that is lost by not planting soybeans.

In making decisions, you should consider the opportunity cost of an activity and all non-monetary benefits and costs associated with the decision. For example, let's suppose that a college professor is earning \$50,000 per year. He or she could make \$60,000 per year working for a bank. Under these circumstances, the opportunity cost of working in academia as a professor is \$60,000 per year, which is the highest valued benefit that is foregone in the professor's current job.

Should the professor take the job at the bank? We cannot answer this question without additional information. The answer depends on the *net benefit or loss* of the decision and all non-monetary benefits and costs associated with the decision.

The net benefit or loss of an employment decision is calculated as follows:

$$\text{Net Benefit or Loss} = \text{Income in Present Job} - \text{Opportunity Cost of Present Job}$$

The net benefit or loss of the professor taking the job at the bank is -\$10,000:

$$\text{Net Benefit or Loss} = \$50,000 - \$60,000 = -\$10,000$$

At this point, the professor needs to decide if the non-monetary benefits that he or she would sacrifice by leaving academia are worth \$10,000 plus the non-monetary benefits that he would gain by working at a bank.

There are several non-monetary benefits associated with working in academia. Many professors feel that academia offers them less stress, fewer rules and regulations, and more variety in their work than most jobs. The professor will have to put a dollar value on these non-monetary benefits before he or she can make a career decision. This assessment is not easy.

There are several non-monetary benefits associated with working at a bank. For one, the professor would probably value the thrill or satisfaction that he or she would get from using his or her skills to increase the bank's profit (i.e., by putting his or her economics training to work). The professor will have to put a dollar value on these non-monetary benefits before he or she can make a career decision. Once again, this assessment is not easy.

In the end, the professor will have to decide if the \$10,000 additional income earned from working at a bank and the non-monetary benefits of working at a bank will compensate him or her for the non-monetary benefits that he or she has in academia. If the answer is yes, the professor should take the job at the bank. If the answer is no, the professor should stay in the classroom.

Answer the questions below. You may want to refer to your notebook, lecture notes, and textbook.

1. What is a likely candidate for the opportunity cost of raising catfish in Cherokee, North Carolina?

- a) the value of operating an amusement park in Paris
- b) the value of stock car racing with Richard Petty's old pit crew
- c) the value of operating a campground
- d) the value of installing Otis elevators in Chicago
- e) all of the above

2. What is a likely candidate for the opportunity cost of selling insurance?

- a) the value of being a physician at Dade County Regional Hospital
- b) the value of raising corn
- c) the value of playing a tenor sax in the N.C. Symphony
- d) the value of managing Wal-Mart
- e) all of the above

3. Let's suppose that you have a job that pays \$25,000 per year in your hometown of Spivey's Corner, North Carolina. You are offered a job in Denver, Colorado that pays \$40,000. What is your opportunity cost of working in Spivey's Corner?

- a) \$ 5,000
- b) \$15,000
- c) \$25,000
- d) \$40,000
- e) insufficient information to work problem

4. In reference to the last question, should you take the job in Denver? Explain your answer.

5. In reference to question 3, let's assume that you decline the job in Denver. What can you imply about the non-monetary benefits of working in Spivey's Corner?

- a) non-monetary benefits are \$5,000
- b) non-monetary benefits are \$10,000
- c) non-monetary benefits are > \$15,000
- d) non-monetary benefits are \$25,000
- e) insufficient information to work problem

6. Let's suppose that you earn \$18,000 raising tobacco. If you did not farm, assume you could earn \$15,000 per year working at a garden center, or \$17,000 per year working as an assistant to your brother-in-law who is a plumber, or \$12,000 during the spring and summer working as a carpenter and \$7,000 during the fall and winter storing travel trailers for a local campground and selling oysters. What is your opportunity cost of growing tobacco?

- a) \$ 1,000
- b) \$15,000
- c) \$17,000
- d) \$18,000
- e) \$19,000

7. In reference to the last question, what is your opportunity cost of working as a carpenter during the spring and summer and storing travel trailers for a local campground and selling oysters during the fall and winter?

- a) \$ 1,000
- b) \$15,000
- c) \$17,000
- d) \$18,000
- e) \$19,000

8. Let's assume that you live and work in Spruce Pine, North Carolina, which is in the mountains. You are offered a job at Wrightsville Beach that pays the same salary as your present job. You would like to live at the beach so that you can pursue your favorite sport of surfing. On the other hand, you do not really like the heat and humidity at the beach. If you decide to work at Wrightsville Beach, which one of the following statements is likely to be true :

- a) the beach has more sand than the mountains
- b) the non-monetary costs of high temperatures and humidity is greater than the non-monetary benefits of surfing
- c) the non-monetary costs of high temperatures and humidity is less than the non-monetary benefits of surfing
- d) you prefer shrimp to boiled peanuts
- e) insufficient information to work problem

9. Answer the questions below using the following information. You may want to refer to chapter 8 entitled "**What's Your Time Worth**" in *Everyday Economics*.

Let's suppose that you earn \$9.00 per hour. We will assume that you value your free time at 45% of your current wage rate.

One of your friends plans to cut down three eastern aromatic cedar trees on her property, which will amount to approximately 140 board feet of lumber. Your friend will give you one-half of the lumber if you will help her cut the trees and run the timber through the saw mill.

The cost of eastern aromatic cedar is \$1 per board foot. It would take you 18 hours to cut the trees and mill the lumber. Your friend will pay all of the direct costs associated with this project.

- a) What is the market value of your share of the lumber?

b) What is the opportunity cost of your time in cutting and milling the timber?

c) Is this deal in your best interest? Explain your answer.

12. Let's suppose that your house needs a new roof. You could hire a roofer to replace the roof for \$2,000 or do the work yourself. We will assume that you opt to re-roof the house yourself.

The cost of your roofing supplies is \$950. You spend 2 1/2 weeks researching the project, removing and disposing of the old shingles, and putting on the new roof (i.e., a work week is 40 hours).

Your wage rate is \$15 per hour. We will assume that you value your free time at 50% of your current wage rate.

a) How much money did you save by doing the roof yourself considering only the cost of roofing supplies and the estimate from the roofer?

b) How many hours did you spend re-roofing your house?

c) What was the value of your time on an hourly basis in re-roofing your house?

d) Did you make a good decision in doing your own roof? Explain your answer.

e) Your neighbor was fascinated by the fact that you did your own roof. He or she would like to know if it is in his best interest to re-roof his or her home.

Let's assume that your neighbor values his or her free time at 55% of his or her wage rate. It would take your neighbor 120 hours to do his or her roof. He or she would save \$1,100 by doing the work himself or herself compared to a roofer's estimate.

At what *threshold* wage rate would you recommend that your neighbor re-roof his or her home? That is, you want to say to your neighbor, "You should re-roof your home if your wage rate is \$_____ or lower." You need to fill in the blank.

To help you get started, I recommend that you compute your neighbor's savings per hour in doing his or her own roof.

13. Let's suppose that a friend lets you pick all of the butter beans that you want at his farm. You pick 3 bushels of beans in 8 hours. The price of a bushel of butter beans at your local Farmer's Market is \$10.

a) What is the market value of the butter beans that you pick?

b) What was the value of your time on an hourly basis in picking the butter beans?

c) Let's suppose that your wage rate is \$10 per hour. Estimate the percentage of your wage rate at which you value your free time. That is, you want to be able to say, "I value my free time at _____ % of my wage rate. You need to fill in the blank.

14. There is no such thing as a free lunch. This statement means that there is a cost to every activity. Think about this statement for a moment. Can you name an activity that is free? I doubt it.

Answer the questions below using the following information. You may want to refer to chapter 5 entitled "**Why There's No Free Lunch**" in *Everyday Economics*.

a) Let's suppose that you are purchasing a new truck. You could pay for the truck with cash that you have invested in a mutual fund or finance the truck for 60 months at 5.9%. What should you do? Explain your answer.

b) In addition to your tuition and books, what is the cost to you of attending college? Is attending college a good decision? Does your answer depend on whether you are evaluating this question in the short run or long run? Explain your answers.

c) Herman is thinking about replacing the masonite siding on his house this summer. He has a medium-sized one and a half story home with a detached, two-car garage. Herman would work on this project on weekends and after work on weeknights. On the other hand, he could hire a vinyl siding firm to do this work for \$18,000. Advise Herman on how to decide if he should do the work or hire someone.