

Econ 211
Problem Set 1

The Economic Way of Thinking

1. Proctor and Gamble has recently marketed a new product called Olestra, which can be used in place of fat in cooking, but is very low in calories. Thus it will be possible to make low-calorie hamburgers, french fries, milkshakes, and so forth. True or false: The average American will weigh less after this product appears on the market.

2. In the early 1980s, when the Polish people had to stand in long lines in order to purchase most consumer goods, the government ordered that every third place in line be reserved for pregnant women or disabled persons. This was presumably done to reduce their discomfort. Do you think it resulted in less standing in line by pregnant women? Do you suppose any women became pregnant in order to be able to cut into the long lines?

3. A few years ago, Tina ranked three available options as follows:

1st Choice: pay \$21,000 tuition and finish a Master's degree in fine arts at the Ohio State University.

2nd Choice: earn \$19,000 working part-time managing a small local theater and spend her spare time pursuing her theater hobby as a volunteer director of small-theater plays.

3rd Choice: earn \$44,000 working full-time reviewing yellow page advertisements for Ameritech.

What is the minimum value of Tina's opportunity cost for pursuing her first choice? Explain.

4. The acres of grass surrounding the Taj Mahal in Agra, India, are often cut by young women who slice off handfuls with short kitchen blades. Is this a low- or high-cost way to keep a lawn mowed?

5. By taking an airplane one can go from Cleveland to Cincinnati in one hour. The same trip takes five hours by bus. If the air fare is \$150 and the bus fare is \$50, which would be the cheaper mode of transportation for someone who could earn \$10 an hour during this time? For someone who could earn \$40 an hour? \$25 an hour?

6. Suppose that you can get maybe one more year out of your current car, but your parents have encouraged you to go ahead and get a new car now instead of waiting a year. You figure that you'll need about \$5,000 for a downpayment. Option 1: Your parents offer to loan you the \$5,000 at 2% interest for the year. Option 2: You can use \$5,000 from your own savings account, which earns you 2% interest per year. How do the costs to you of these two options compare? Explain.

7. Economists would be more likely to agree on the answers to which of the following questions? Why?

- a) Should tax rates be lowered for the rich?
- b) How would lowering tax rates for the rich affect economic output?
- c) How would an increase in the price of VCRs affect purchases of VCRs?
- d) Should government defense expenditures be reduced?
- e) How would an increase in military spending affect employment?

8. Are the following statements normative or positive?

- a) The government should provide free tuition to all college students.
- b) An effective way to increase the skills of the work force is to provide free tuition to all college students.
- c) The government must provide job training if we are to compete with other countries.
- d) The North American Free Trade Act will increase the skill requirements of workers in the US.
- e) The North American Free Trade Act should not be supported because it will take jobs away from the US.

9. You have waited 30 minutes in a line for the Space Mountain ride at Disneyworld. You see a sign that says, "From this point on your wait is 45 minutes." You must decide whether to continue in line or to move elsewhere. On what basis do you make the decision? Do the 30 minutes you've already stood in line come into play?

10. Suppose that you are an otherwise law-abiding college professor earning \$60,000 a year. Suppose further that you are confronted with the opportunity to steal several new Gateway computers worth an estimated \$150,000. The computers can be sold for \$140,000 on the black market. You know full well that if you get caught and convicted, you could face a prison sentence of 10 years plus a fine of \$5,000. The estimated arrest rate in your state for such crimes is 25% while the conviction rate is around 60%.

- a) Calculate your expected marginal benefit and marginal cost. Assuming that you are a rational thief, would you steal the computers?
- b) Ceteris paribus, what would the jail sentence have to be to make you indifferent between stealing the computers and not?
- c) Ceteris paribus, what would the fine have to be to make you indifferent between stealing and not stealing?
- d) Ceteris paribus, what would the joint probability of arrest and conviction have to be to make you indifferent?

11. Evaluate the following statement: "Increasing the speed limit has, to some degree, compromised highway safety on interstate roads but enhanced safety on non-interstate roads."

12. Suppose you own and run a small business. You spend 40 hours per week managing the operation. By managing the business, you forgo your next best alternative, which is working at a job for someone else that pays \$10 per hour. An accountant calculates all the money costs and revenues from the business and tells you you're making a \$300 profit per week. However, the accountant doesn't include the opportunity cost of your time as part of the money costs because you don't incur any cash outlay to pay for your time. Does it make sense for you to continue in business? Explain your answer.

13. It is well documented in scientific research that smoking is harmful to our health. Smokers have higher incidences of coronary disease, cancer, and other catastrophic illnesses. Knowing this, about thirty percent of young people begin smoking and about twenty-five percent of the US population smokes. Are the people who choose to smoke irrational? What do you think of the argument that we should ban smoking in order to protect these people from themselves?

14. Everyone knows that attending college is expensive. But this cost frequently is calculated incorrectly and, as a result, is understated. The following paragraph describes the financial situation of a student attending a college. In terms of dollars, what is the opportunity cost of attending college for the year?

Sue Student, an aspiring scholar at Marietta College, pays \$17,000 in tuition to her school. She lives on campus and pays \$7,000 for food and rent to her college. Sue also spends \$3,000 on other activities, such as pizza, parties, and parking her car. She buys \$600 of textbooks per year and makes car payments of \$3,600 in a year. Sue is not working this year while in college; but if she did not go to college, she had a job lined up that would have paid her \$19,000. If she worked this year, she would have spent \$7,000 on food and rent, as well as an additional \$3,000 on other expenses. Sue would, of course, have made her car payments of \$3,600 even if she did not go to college.

15. Fact 1: California currently has a "three strikes and you're out" law which raises the penalties for criminals convicted of a third felony offense to a mandatory prison sentence of 25 years to life.

Fact 2: An article in the Los Angeles Times reported that some law-enforcement officials have blamed the law for an increase in the level of violence committed by third-time offenders.

Reconcile Fact 1 and Fact 2.

16. Determine in which factor-of-production category --land, labor, or capital-- each of the following items belongs.

- a) A new office building.
- b) A deposit of coal.
- c) The inventory of auto supplies in an auto supply store.
- d) Land reclaimed from the sea in Holland.
- e) A trained mechanic.
- f) An automated computer system.

17. On a circular flow diagram, show the flows in which the following items occur:

- a) labor hired by firms
- b) land rented to businesses
- c) computers sold by firms to governments and households
- d) taxes paid by households and firms
- e) wages paid by firms
- f) unemployment benefits
- g) profit paid to entrepreneurs

Production Possibilities and Trade

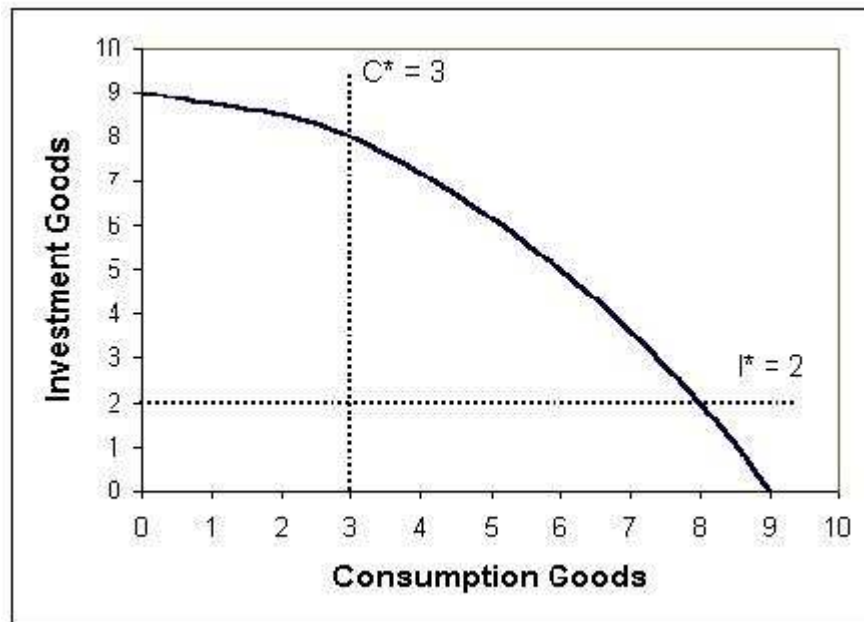
18. Plot the production possibilities curve given by the following data (plot Health Care on the horizontal axis):

Combination	Health Care	All Other Goods
A	0	100
B	25	90
C	50	70
D	75	40
E	100	0

- Calculate the opportunity cost of Health Care in going from combination A to combination B; from B to C; C to D; D to E.
- If this economy produced 75 units of Health Care and 30 units of All Other Goods (AOG), would it be solving the "how" problem efficiently?
- If at some later date this economy produced 75 units of Health Care and 45 units of AOG, what would you conclude has happened?

19. Ben can prepare 15 drinks per hour or grill 5 dinners per hour. J-Lo can prepare 20 drinks per hour or grill 8 dinners per hour. If Ben and J-Lo were to work in a bar and grille, who would prepare drinks? Who would prepare the dinners? Would J-Lo do both? Explain.

20. Consider the PPF below. C^* represents the economy's subsistence level of consumption; if consumption drops below C^* , some people will starve. I^* represents the level of investment necessary to replace worn out equipment and keep the PPF in its present position; with less investment, the PPF will shrink next year, with more investment the PPF will grow.



a) Redraw the above diagram on the answer sheet. Make sure you label your graph completely. Indicate where the economy will produce for each of the following goals:

- Grow as rapidly as possible without starving its citizens.
- Enjoy as much consumption as possible without reducing its PPF in the future.
- Produce C^* or more of consumption goods and I^* or more of investment goods.

b) Suppose that a severe disaster forces the country's PPF to shift in until it is barely possible to produce the combination of I^* and C^* . Draw the economy's new PPF, and answer the questions for part (a) again. (Draw the new PPF on the same chart used above.)

21. The table below summarizes the production possibilities for two countries. Complete the table and answer the questions below.

Country	Output per Hour		Opportunity Cost of ...	
	Tons of Steel	Bushels of Wheat	1 ton of steel	1 bushel of wheat
US	6	60		
South Korea	3	6		

a) Indicate which country has the absolute advantage (greatest output efficiency) in:

Steel:

Wheat:

b) Indicate which country has the comparative advantage (lowest opportunity cost) in:

Steel:

Wheat:

c) If there were trade between these two countries, indicate which country would tend to...

export steel and import wheat:

export wheat and import steel:

d) Now suppose that the US and South Korea agree to trade 10 tons of steel for 50 bushels of wheat, and that the US then switches 1 hour of labor from steel to wheat and South Korea switches 4 hours of labor from wheat to steel. Complete the following table.

	US		South Korea	
	Steel	Wheat	Steel	Wheat
Production Change:	-6	+60		
Trade:	+10	-50		
Consumption Change:				

22. Countries A and B both produce golf balls and golf clubs. The table shows what each country can produce at full employment.

Country A		Country B	
Balls	Clubs	Balls	Clubs
1200	0	900	0
1000	50	750	25
800	100	600	50
600	150	450	75
400	200	300	100
200	250	150	125
0	300	0	150

a) Graph the PPFs of each country (put Golf Clubs on the horizontal axis).

b) Do both PPFs exhibit constant costs?

c) Which country has the absolute advantage in Golf Balls? In Golf Clubs?

d) Which country has the comparative advantage in Golf Balls? In Golf Clubs?

e) If trade between these two countries were to take place, which country would export Golf Balls? Which country would export Golf Clubs? Explain why.