

Econ 101 Discussion Section-Handout 1

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1 Introduction

Welcome to our first discussion, my name is Emilio CUILTY and I am your T.A. Besides being your T.A. I am a second year student of Ph.D. in economics. As you are now I was once an Econ 101 student, and that means that I know how exciting, fun and sometimes hard it is to start learning about economics. The good news is that we are here together to overcome the hard part while keeping the fun part. This means that our discussions will be our tools for reviewing the material covered by Professor Hansen. A typical discussion section will contain an individual quiz, a group quiz and then I will solve more applications for you. As Professor Hansen has mentioned these quizzes will help you to review the material covered in lecture. Why this format? The motivation is that if you have trouble answering the individual quiz, you can help yourself learning from your classmates. If you are a rockstar and can solve the quiz then you can benefit as well teaching your classmates while fixing the great ideas you have learned. Finally I will try to cover hard applications, so you can learn even more and be better prepared for midterms. Nevertheless if at some point you think you need more help to get the full flavor of economics, do not hesitate and attend to my office hours. If this time is not enough we can meet by appointment (with 2 days in advance). Finally if you have a quick question you can send me an email and I will try to answer your doubts as soon as possible. Remember I am also a student, and that implies that I have also homework, midterms and finals! Lets set this rule, I will read your emails only before 8:00 P.M., if you send me an email at 9:00 P.M. you will get my answer until next day.

Super Important Information

Office Hours	Monday	2:00 P.M.-4:00 P.M.	Social Sciences 6473
Email	cardenascuil@wisc.edu		
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The web page will contain the handouts, and the solutions to them. Note that handouts will be also available at learn@UW however, sometimes I add extra problems or comments about the steps.

In my web page you can also find the 2014 fall handouts, these handouts were used for econ101 with Professor Kelly, so if you need more exercises there you can find more

Finally I recommend going to professor Kelly web page <http://www.ssc.wisc.edu/~ekelly/econ101/> there you can find tons of problems and exams with solutions

2 Review

- Opportunity Cost
- Production Possibility Frontiers
- Math review (time permitting)

3 Problems

A) Opportunity cost questions:

1. Larry was accepted at three different universities, and must choose one. Yale costs \$50,000 per year and did not offer Larry any financial aid. Larry values attending Yale at \$60,000 per year. UW-Madison costs \$30,000 per year, and offered Larry an annual \$10,000 scholarship. Larry values attending UW-Madison at \$40,000 per year. Edgewood College costs \$20,000 per year, and offered Larry a full \$20,000 annual scholarship. Larry values attending Edgewood at \$15,000 per year. Which college should Larry attend? What is his opportunity cost of attending this college?
2. Russell and Stephen are taxi drivers who are thinking about switching careers. Russell rents his taxi, fully equipped, from someone else at a rate of \$75/day. Stephen owns his taxi so he does not have to pay rent. Consider the following statement: "All else being equal, Stephen is more likely to continue being a taxi driver since he does not have to pay the cost of renting the taxi and so makes more profit than Russell."

B) Production Possibility Frontiers

1. Jack and Jill each own a farm, where they can each produce milk and bread. In a given day, Jack and Jill can produce gallons of milk and loaves of bread. The maximum amount of either good they can produce if they produce none of the other is given by the following table:

	Gallons of milk per day with no bread	Loaves of bread per day with no milk
Jack	2	6
Jill	10	2

Draw the individual PPFs of Jack and Jill with milk on the x axis. What is the opportunity cost of producing one more gallon of milk for Jack? For Jill? Describe who has the absolute advantage and who has the comparative advantage in which goods. Who should specialize in the production of milk if Jack and Jill trade? Can Jack and Jill each consume 5 gallons of milk and 3 loaves of bread if they trade? What about if they did not trade? (Extension – not assessable) Can you construct a PPF showing how much Jack and Jill can produce in total? Hint: first figure out how much of each good they could make if they made none of the other good. Then figure out who should make the first gallon of milk.

2. Crusoe finds himself stranded on an island. He devotes 10 hours each day to either gathering coconuts or catching fish. Crusoe can gather 4 coconuts in an hour, but he needs 5 hours to catch a single fish. On the other side of the island is Friday. Friday also devotes 10 hours each day to gathering coconuts and fishing. He can gather 3 coconuts per hour and needs only 2.5 hours to catch a fish. Construct a table showing how much each person can produce of each good if they do not produce any of the other good. What is the opportunity cost of catching a fish for Crusoe? For Friday? What is the opportunity cost of gathering a coconut for Crusoe? For Friday? Draw Crusoe's production possibilities frontier with coconuts on the x-axis. Give its equation (with the number of fish on the left hand side). On a separate graph, do the same for Friday. One day, Crusoe and Friday befriend each other and they decide to explore the possibility of trade. For maximum output, who should specialize in coconuts? In fish? Justify your answer using the language of comparative advantage. Who has the absolute advantage in each good?

C) Math Review Questions

1. Suppose a straight line passes through the points (0, 10) and (10, 20). Find the equation of this line.
2. Consider the following two equations, which are straight lines: (I) $y = 2x$ (II) $y = -x + 15$
 - (a) Plot these two lines. Calculate the point where these two lines intersect. Label this point A.
 - (b) Consider shifting line (I) 3 units to the left. What is the equation of this new line? Plot it on your diagram.
 - (c) Let's call this line (I'). Calculate where lines (I') and (II) intersect. Label this point B.
 - (d) Draw a vertical line (i.e. parallel to the Y axis) passing through B. You will observe that this line and lines (I) and (II) form a triangle: calculate the area of this triangle.
3. Repeat the above question using these two equations: (I) $y = 4x + 6$ (II) $y = -2x + 60$