ECON 111-01A Prof. John F. Olson

Introduction to Economics Fall 2015

Homework Problem Set #1

Below are a set of questions/problems drawn from the material in the first three chapters of the Mankiw text. Prepare and submit a set of written responses. You may work and discuss your responses with others, but what you submit must be in your own words. You may hand-in a hard-copy in class or send an MS-Word file attached to e-mail to [jolson@csbsju.edu](mailto:jolson@csbsju.edu) – DUE: Wednesday, Sept. 16th, 2015.

Answers inserted below in *italics*.

1. Identify and explain one significant trade-off you have/had to make this weekend. What is/was the opportunity cost of your choice?

*The example will vary by individual student. The opportunity cost of their choice should be expressed in terms of the value of the next best alternative they chose not to do.*

2. How do prices serve as an “invisible hand” in markets to guide people to make the “best” decisions for themselves?

*Prices, in reflecting opportunity costs, provide incentives to buy (and consume) and sell (and produce). If people are being rational economic decision-makers (trying to make the best decisions for themselves), then they will choose to do things where the expected benefits exceed or are at least equal to the opportunity costs. Thus in markets, consumers will buy goods up to the amount where the last unit purchased equals the price paid; producers/sellers will offer goods up to the amount where the price received equals their cost of producing/selling (to maximize their profit).*

3. Explain the two main causes for market failure and give a concrete (illustrative) example of each.

*Market failure can occur because of: 1) an externality (when actions of a person affect the well-being of a bystander by imposing costs or benefits on the bystander) or 2) the presence of market power (when a market participant can affect/influence the market price). Examples should illustrate each of these.*

4. a. Draw and explain a production-possibilities frontier (ppf) for an economy that produces milk and cookies.

*There should be a well-labelled graph of a ppf, similar to those shown in the text, showing the production of milk and cookies. It can be a straight-line or bowed/curved ppf, depending on whether the opportunity costs are constant or increasing.*

b. What do points inside the ppf represent?

*Points inside the ppf reflect combinations where either resources are not fully employed or are being inefficiently used or both; that is, more of either/both milk and cookies could be produced.*

c. What do points outside the ppf represent?

*Points outside the ppf represent unattainable combinations of milk and cookies – these amounts cannot both be produced.*

d. What do the points on the ppf represent?

*They represent full-employment and efficient use of resources to produce these combinations of milk and cookies.*

e. At any point on the ppf, what does the slope of the ppf represent?

*The slope of the ppf at any point represents the opportunity cost – that is the trade-off of getting more milk (cookies) and less cookies (milk).*

f. What happens to this ppf if disease kills half of the economy’s cows? (Show the new ppf.)

*With the loss of half the economy’s cows, the new ppf reduces maximum milk production by half, while there should be no change in the maximum amount of cookies that can be produced; so the new ppf will be rotated/shifted inwards along the milk-axis, but unchanged on the cookie-axis.*

5. What is the difference between a positive and a normative economic statement? Give an example of each and explain.

*A positive economic statement is an assertion of the way the world is – it may be true or false, but the critical feature is that it may be objectively tested against facts/evidence to assess its validity. A normative economic statement is an assertion of the way the world ought to be, in the sense that it is a value judgement or subjective opinion; one may agree or disagree with it, but the statement’s validity cannot be assessed against facts/evidence. Examples should demonstrate these features.*

6. American and Japanese workers can each produce 4 cars per year. An American worker can produce 10 tons of grain a year, whereas a Japanese worker can produce 5 tons of grain per year. To keep things simple, assume that each country has 100 million workers.

a. For this situation, construct a table showing the amounts of cars and grain each country can produce and what the opportunity costs of a car and a ton of grain are in each country.

*The table should show for the U.S. 400 million cars and 1000 million tons of grain, while for Japan there should be 400 million cars and 500 million tons of grain. In the U.S. the opportunity cost of 1 car is 2.5 tons of grain and the opportunity cost of 1 ton of grain is 0.4 cars. In Japan the opportunity cost of 1 car is 1.25 tons of grain and the opportunity cost of 1 ton of grain is 0.8 cars.*

b. Graph the production-possibilities-frontiers for the American and Japanese economies.

*A pair of well-labelled graphs showing the ppf for the above data – the ppf in each case is a straight-line showing the opportunity cost.*

c. Which country has an absolute in producing cars? In producing grain?

*Neither country has an absolute advantage in producing cars – a worker producing cars is equally productive in each country. In producing grain, the U.S. has an absolute advantage in producing grain.*

d. Which country has a comparative advantage in producing cars? In producing grain?

*Japan has the comparative advantage in producing cars (a lower opportunity cost – 1 car costs 1.25 tons of grain vs. the U.S. where 1 car costs 2.5 tons of grain). In producing grain, the U.S. has the lower opportunity cost (1 ton of grain costs 0.4 cars vs. Japan’s 0.8 cars).*

e. Without trade, half of each country’s workers produce cars and half produce grain. What quantities of cars and grain does each country produce (and have available for consumption)?

*In this case, the U.S. would produce 20 million cars and 500 million tons of grain; Japan would produce 20 million cars and 250 million tons of grain.*

f. Starting from any point/position without trade, give an example in which trade between the U.S. and Japan makes each country better off – that is, having more cars and grain available for consumption that without trade.

*If Japan moves to produce more cars (and less grain), they can use some of these additional cars to purchase (import) grain from the U.S. at a lower cost than they could produce grain themselves; that is, the Japanese could buy grain from the U.S. at a cost between 0.8 cars (the Japanese cost) and 0.4 cars (the U.S. cost) per ton of grain. Similarly, if the U.S. moves to produce more grain (and fewer cars), they can use some of the extra grain to buy (import) cars from Japan at lower cost than they could produce cars; that is, the U.S. could buy cars from Japan at a cost between 2.5 tons of grain (the U.S. cost) and 1.25 tons of grain (the Japanese cost).*

*The main point here is that if there is no trade, then each country is limited to consuming only what they can produce on their own ppf. If you allow for trade to occur, then applying the principle of comparative advantage indicates that countries should produce more of (specialize in) the items for which they have a low opportunity cost compared to other countries and then export that in exchange for imports of items where they have a high domestic opportunity cost (and the other country has a lower opportunity cost). Such free trade exchanges make both countries better off; that is, allowing them to consume greater amounts of both items than they could if there was no trade. Basically, you are taking advantage of the other country’s lower opportunity cost in production of the imported item while they are taking advantage of your lower opportunity in producing the your exported item.*