Problem Sets 2

1. In a market-based economy, most of valuable resources are allocated through mutually beneficial exchange, either with monetary payment or in the form of barter. However, not all valuable goods and services can be allocated through market exchange (e.g. rights to college education or marriage).
   1) What is the competitive criterion in the market place? What are the "rules of the game" associated with market transactions? For the smooth functioning of the market, which is more essential– competitive criterion or rules of the game?
   2) Can you provide an example in which market exchange is unable to allocate resources effectively? What is the competitive criterion in this case? What are the relevant "rules of the game"?
   3) Suppose it becomes possible to apply market mechanism to allocate the resource in your example, how do you evaluate the equity and efficiency level of applying market mechanism versus the criterion otherwise?

2. Opportunity Costs and Applications
   1) What is the opportunity cost of attending a small liberal arts college? What is the opportunity cost of attending a college in a rural area?
   2) If college education is the choice for the youth to thrive in the future, why did Bill Gates drop out of Harvard in his second year? Why did not LeBron James even go to college after high school? Apply the concept of opportunity cost to explain.
   3) After college, you plan to start your own business in NYC. Instead of taking a loan from some bank, suppose you can borrow $100,000 from your uncle without paying any interest. What is the opportunity cost to your uncle of lending $100,000 to you?
   4) What is the opportunity cost of holding cash in your pocket? What is the opportunity cost of putting all your savings in your bank's checking account?
   5) Where is your dream place or country to live outside the U.S.? Suppose you already finish college and work full time, what is the opportunity cost if you emigrate to your dream country?

3. In one hour, Biwei can either produce four apples or six bananas. Biwei works 8 hours a day in total.
   1) What is the opportunity cost of producing one apple in terms of banana? One banana?
   2) What is the opportunity cost of producing one apple measured in units of time? One banana?
   3) Splitting his total time equally into producing both goods, how many units would Biwei produce?
   4) Derive and graph the equation for Biwei's daily production possibilities frontier. [Extra: 0.2]

4. Biwei's production possibilities are indicated by the following table:

Alternative Daily Production Possibilities		
Oats		Soybeans
10	and	0
9	and	0.2
8	and	0.4
7	and	
6	and	
5	and	
4	and	
3	and	
2	and	
1	and	
0	and	2

1) Compute the missing data, assuming linear interpolation gives his production possibilities.
2) For each increment of oats, he incurs a uniform sacrifice of soybeans. The ratio between these two changes is called the rate of transformation between oats and soybeans. This rate also yields his opportunity cost of oats (in terms of soybeans). What is the opportunity cost of a bushel of oats?
3) What is the opportunity cost of a bushel of soybeans?
4) If that opportunity cost is constant for all combinations, then production is said to involve constant cost. Does this example reveal constant costs?
5) Graph Biwei's production possibility, with oats on the horizontal scale.
6) On the graph, label as point I the output that has an equal number of bushel of oats and of soybeans.
7) What is the number of bushels of each in (6)?
8) Which is the larger output: (1.67 oats, 1.67 soybeans) or (5 oats, 1 soybean)? Explain. [Extra: 0.2]