

**Problem Set 5, Econ 2100**  
**Fall 2009 (Due Mon. Nov. 2)**

- 1) Suppose you are a peanut farmer in Georgia. Last year, you harvested 9,000 pounds of peanuts and some fruits and vegetables. You sold 8,450 pounds of peanuts to a cookie company for the price of \$1.00 per pound, 400 pounds in a farmer's market for the price of \$1.50 per pound. For the remaining 150 pounds of peanuts, you donated 25 pounds to a food bank, and sold 50 pounds to your neighbor for the price of \$1.00 per pound, and gave 25 pounds to your friend, consumed 10 pounds with your family members, and used 40 pounds for making peanut butter. The total income from the fruits and vegetables was \$500. Yet in growing these peanuts, fruits and vegetables, you spent \$1,500 on fertilizers and other materials. Calculate your contribution to last year's GDP.
- 2) The governments in developed countries such as the US, Canada, UK, and Japan provide free public education. Even the governments in many developing countries such as China, Thailand and Argentina provide free or heavily subsidized education. Discuss why almost all countries in the world provide free public education.
- 3) Here are some data for an economy. Find its GDP. Explain your calculation.

Government purchases of goods and services	360
Compensation of employees	210
Exports	28
Interest and Dividend income	23
Business fixed investment	70
Imports	40
Beginning-of-year inventory stocks	90
End-of-year inventory stocks	97
Private Consumption Expenditures	720
Household saving	25
Household taxes	150

- 4) An economy is described by the following equations:  
 $C = 1500 + 0.6Y$ ,  $I^p = 300$ ,  $G = 1,500$ ,  $NX = 100$ ,
- a) Find the value of the expenditure multiplier in this simple Keynesian model without taxes.
- b) Find the short-run equilibrium output for this economy.
- c) Find the effect on short-run equilibrium output of an increase in government purchase (G) from 1500 to 1600.
- d) Find the effect on short-run equilibrium output of an increase in autonomous consumption from 1500 to 1600.
- e) Find the effect on short-run equilibrium output of a decrease in planned investment ( $I^p$ ) from 300 to 200.
- f) How would your answer in b) change if the marginal propensity to consume (MPC) becomes 0.8? Explain why short-run equilibrium output changes and what drives such a change in this model.
- 5) In the US, household saving rate declined sharply in the middle of 1980s and then in the 1990s. It reached 1.8% of household disposable income in 2004. Based on your knowledge learned from this course, carefully explain if you consider low household saving rate in the US a problem.