Problem Set 1
14.02
Due Sept. 20, 1995

1. Once upon a time, there was a country called Land-O-Rhymes. The economy consisted of 2 goods: limes and chimes. This country was completely self-sufficient with no exports or imports. In 1960, the economy produced 20 limes and 50 chimes. The prices (given here in the local currency, vrimes) were 12 and 30 vrimes, respectively. During the next year, the citizens of Land-O-Rhymes were struck by a debilitating citrus virus which induced extreme drowsiness in its victims. Productivity declined. In 1961, the economy produced 15 limes at 15 vrimes each and 30 chimes costing 32 vrimes each.

a) Fill in the following table based on the above information. Note: you may round your answers to the second decimal place.

	1960	1961
Nominal GDP		
Real GDP (in 1960 vrimes)		
GDP deflator(in 1960 vrimes)		
Real GDP (in 1961 vrimes)		
GDP deflator (in 1961 vrimes)		

b) What is the rate of inflation between 1960 and 1961 using 1960 as a base year?

c) What is the percentage change in the GDP deflator between 1960 and 1961 using 1961 as the base year?

d) Why are your answers to b) and c) different?

2. Explain why each of the following purchases is or is not counted as part of GDP.

a) You purchase a used lawn mower at a garage sale.

b) GM purchases tires from Goodyear to equip new Chevrolets.

c) A neighbor hires you to babysit for the evening.

3. In 1986, spending by Americans on personal consumption, private investment and government operations totaled 104 percent of GDP. How is that possible? (Assume inventories are zero).

4. In Chapter 3 of the text, we modelled taxes as fixed. Here we examine the effects of proportional taxes, T=tY, where t is the tax rate. We use the consumption function, C= a + bYD, where YD is disposable income. Assume that investment and government spending are fixed. There are no changes in inventories and the economy is closed.

a) Write down the equation for YD then substitute this into the consumption function. What is the marginal propensity to consume out of disposable income?

b) Solve for the equilibrium level of income in this economy. What is the multiplier? How does this differ from the case where T is fixed?

c) Given your answer in b), what is the equilibrium level of private saving (S) in the economy?

d) Suppose t is increased? What happens to income? Why? What happens to S?

e) Is there some reason to believe that G should vary with Y? Explain.

5. Using the *Economic Report of the President,* refer to the tables concerning GDP and personal consumption. Create and print (using any standard software package) a scatterplot diagram of consumption against GDP. Then, create and print another scatterplot of the change in consumption against the change in GDP.