Section 1: Gross Domestic Product

Based on reading from Chapter 10 and Lecture 1.

a) What is the definition of GDP?
________________________________________________________________________
________________________________________________________________________

b) What does GNP stand for, and how is it different than GDP?
________________________________________________________________________
________________________________________________________________________

For each, indicate if it makes US GDP go up, go down, or stay the same:

<table>
<thead>
<tr>
<th>Description</th>
<th>up</th>
<th>down</th>
<th>same</th>
</tr>
</thead>
<tbody>
<tr>
<td>A US firm sells a new car to a foreign buyer</td>
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<td></td>
</tr>
<tr>
<td>The government buys a new aircraft carrier</td>
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<tr>
<td>A US firm contracts an Indian firm to handle their telephone customer support</td>
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<tr>
<td>A father stays home to care for his child</td>
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<tr>
<td>A parent hires a nanny to care for their child</td>
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<tr>
<td>A ton of apples are imported and consumed</td>
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<td></td>
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<tr>
<td>A ton of toys are produced and are put in a warehouse awaiting sale</td>
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<tr>
<td>A homeowner rents out a house they had previously occupied to go sail around the world</td>
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<tr>
<td>A new home is produced but not yet sold</td>
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<td></td>
</tr>
<tr>
<td>US consumers import more illegal drugs from foreign countries</td>
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</tbody>
</table>
d) Suppose these were all the economic activities in a small country last year.

1) For each, indicate the dollar value that each contributes to each component of GDP. If an item does not contribute to GDP, write “none”:

<table>
<thead>
<tr>
<th></th>
<th>C</th>
<th>I</th>
<th>G</th>
<th>NX</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Households buy $400 worth of apples.</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Firms sell $300 of lemons to foreigners.</td>
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<td></td>
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<tr>
<td>c) Firms build $900 worth of new houses.</td>
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<td></td>
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<tr>
<td>d) Firms buy $200 of corn from abroad and sell it to households.</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>e) Firms produce $800 of wheat, sell $500 to households, $300 to foreigners.</td>
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<td></td>
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<tr>
<td>f) The government spends $500 on teachers and $200 to build a school.</td>
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<td></td>
<td></td>
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<tr>
<td>g) Firms produce $600 of computers, sell $400 to households and store $200 for next year.</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>h) Firms use $200 of flour to make $600 of bread that is sold to households.</td>
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</tr>
<tr>
<td>i) Parents provide $1000 worth of babysitting for their own children.</td>
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</tr>
<tr>
<td>j) The government builds a dam for $1000.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>k) Accountants provide $500 of services for firms.</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>l) Firms buy $200 of olives from abroad and sell $500 of olive oil to households.</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>m) Children sell $100 of cookies on the roadside.</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

2) What was total consumption in the economy? __________________________

3) What was total investment in the economy? __________________________

4) What was total government purchases in the economy? __________________________

5) What was total net exports in the economy? __________________________

6) What was total GDP in the economy? __________________________
Section 2: Inflation

Based on reading from Chapter 11 and Lecture 2.

a) What is the difference between real and nominal GDP? ______________________________________

b) Suppose the base year is 2005, and the only goods in the economy are apples and bananas. In 2005 both apples and bananas cost $1, and 100 apples and 100 bananas are produced. In 2006, apples cost $20 and bananas cost $5, and 50 apples and 200 bananas are produced.
   1. What is nominal GDP in 2005? _____ In 2006? _____
   2. What is real GDP in 2005? _____ In 2006? _____
   3. What is the GDP deflator in 2005? _____ In 2006? _____
   4. Suppose the fixed basket of goods is 1 apple and 2 bananas. What is the level of the CPI in 2005? _____ In 2006? _____
   5. What is the CPI inflation rate from 2005 to 2006? _____

c) What are the three effects that bias the measurement of CPI?
   i. __________________________
   ii. __________________________
   iii. __________________________

d) Which of the three effects listed in part c does each of the following illustrate?
   1. US households in 2010 spent a larger fraction of their income on televisions than they did in 1950. __________________________
   2. All televisions available in 2010 had higher resolution than any televisions available in 1950. __________________________
   3. In 1950, no US household had a plasma screen television, but in 2010 they are widely available. __________________________

e) Suppose the average television purchased in 1950 cost $200, and the average television purchased today costs $700.
   1. What is the percentage change in the average television price? _____
   2. Taking into account the effects in part c, is this percentage increase likely an underestimate or overestimate of the true change in the cost of televisions? _______ Why? __________________________
f) Suppose CPI is as follows in each year:

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPI</td>
<td>100</td>
<td>99</td>
<td>125</td>
<td>140</td>
</tr>
</tbody>
</table>

Suppose in the year 2007 you are considering a job offer that pays $50,000 in 2007, plus a 10% (compounding) raise in each of the next three years.

1. What nominal salary will you make in each year?

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Salary</td>
<td>$50,000</td>
<td>$55,000</td>
<td>$60,500</td>
<td>$66,550</td>
</tr>
</tbody>
</table>

2. What will your real salary be in each year, using a 2007 base year?

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary in 2007$</td>
<td>$50,000</td>
<td>$55,000</td>
<td>$60,500</td>
<td>$66,550</td>
</tr>
</tbody>
</table>

3. What will your real salary be in each year, using a 2009 base year?

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salary in 2010$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. In what year was your real salary highest? _________

5. Does your answer to 4 depend on the base year selected? _________

6. Suppose instead your contract gave you $50,000 in 2007, plus a cost of living adjustment equal to the percentage change in CPI. Compute the nominal wage in each year.

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Salary</td>
<td>$50,000</td>
<td>$54,900</td>
<td>$61,025</td>
<td>$67,936</td>
</tr>
</tbody>
</table>

7. In what years is this contract better than the original one? _________
Section 3: Long Run US Growth

Please go to the following website: http://research.stlouisfed.org/fred2/ For this part, you will need use of a printer.

1) Let’s begin by finding a basic graph of US GDP over time. In the upper right corner, search for Gross Domestic Product (GDP). This gives a time series graph of GDP.

2) Let’s compare different ways of measuring real GDP. Under the “Add Data Series” tab, search for “Real GDP” and select “Add Series”. What is the base year used for this series? ______

3) Remember that real GDP is computed using nominal GDP and CPI. We can do this manually using the data available. Click the “Add Data Series” tab again, and search again for GDP and select “Add Series”.

4) Now select the “Add Data Series” tab again, this time select “Modify Existing Data Series” below the search field and choose “Data Series 3”, then search for CPI. There are several CPI series available, feel free to pick whichever you like.

5) What is the base year for the CPI series? ______

6) Under the Data Series 3 tab, there is the “Create Your Own Data Transformation” section. Read the instructions for how to do a transformation, and enter the formula for real GDP using CPI and Nominal GDP, then click “Apply”.

7) Print the resulting graph and include it with this homework.

8) Why are Line 2 and Line 3 different? ______________________________________________________
   __________________________________________________________________________

9) What does the fact that Line 1 is growing faster than Lines 2 and 3 tell us about inflation? ______________________________________________________
   __________________________________________________________________________
Section 4: Milton Friedman Program

Please watch the following program by Milton Friedman:
http://www.youtube.com/watch?v=PJWLt1TmAy4

a) What does Friedman believe was the key to Japan’s development?
________________________________________________________________________
________________________________________________________________________

b) What does Friedman believe was primarily responsible for India’s lack of
development
________________________________________________________________________
________________________________________________________________________

c) What is “protectionism”?
________________________________________________________________________
________________________________________________________________________

d) What is “free trade”?
________________________________________________________________________
________________________________________________________________________

e) What are some of the arguments presented in favor of free trade?
________________________________________________________________________
________________________________________________________________________

f) During the debate, what are some arguments presented in favor of
protectionism?
________________________________________________________________________
________________________________________________________________________

g) Write a paragraph or so on whether or not you are convinced by Friedman’s
point of view, and why.
Section 5: Basic Information on Your Assigned Country of Study

What country were you assigned to study? ______________________________

For this section, you will need to find some basic information on this country. You may use any online or library sources that you wish (e.g., the CIA World Factbook, Wikipedia, World Development Indicators, etc.).

Please list your source or sources: ____________________________________________

1) What is your country’s population? __________________

2) What is its GDP in nominal terms (that is, in US dollars)? __________________

3) What is its GDP in purchasing power parity (PPP)? ______________________

Note: In future lectures we will discuss PPP. It controls for differences in prices across countries.

4) Dividing the answers to 3 and 1, what is their GDP per capita? _______________

5) What is US GDP per capita? ____________ What fraction of GDP per capita does your country have compared to the US? ________________

6) Was your country ever controlled by a foreign power? If so, list them and their years of control: _________________________________________________________
________________________________________________________________________

7) What languages are spoken by 10% or more of the population? _______________
________________________________________________________________________

8) What are the predominant religions? ______________________________

9) What form of government does your country currently have? ________________
________________________________________________________________________

10) List three industries that your country has, including natural resources, types of agriculture, manufacturing, etc.: __________________________
________________________________________________________________________
11) Write a paragraph or two describing the recent history of your country, such as recent military conflicts, political instability, violence or other challenges:

12) In your initial study of your country, write a paragraph or two about the barriers to economic well-being that citizens of your country face, such as corruption, crime, ongoing violence, high unemployment, high inflation, etc.