EXAMINATION #2 VERSION B
"National Income and Product Accounts"
October 3, 2014

INSTRUCTIONS: This exam is closed-book, closed-notes. Simple calculators are permitted, but graphing calculators or calculators with alphabetical keyboards are NOT permitted. Cell phones or other wireless devices are NOT permitted. Point values for each question are noted in brackets. Points will be subtracted for illegible writing or incorrect rounding. Maximum total points are 100.

I. Multiple choice: Circle the one best answer to each question. Please use the margins for scratch work.
[1 pt each, 12 pts total]

(1) The period beginning at the trough of a business cycle and ending at the next peak is called
a.   a boom.
b.   an expansion.
c.   a recovery.
d.   a recession.

(2) Potential GDP does *not* depend on
a.   total hours of all workers
b.   the total money supply.
c.   total economic capital available.
d.   technology or know-how available.

(3) At a peak in the business cycle, which is larger-- actual GDP or potential GDP?
a.   Actual GDP.
b.   Potential GDP.
c.   Actual GDP is roughly equal to potential GDP.
d.   Cannot be determined from information given.

(4) In the early 1930s, the price level in the United States dropped by about 20%. This is an example of
a.   reflation.
b.   hyperinflation.
c.   disinflation.
d.   deflation.

(5) Taxes and government spending are components of
a.   monetary policy.
b.   international trade policy.
c.   fiscal policy.
d.   foreign policy.

(6) Consumption spending in the national accounts does *not* include
a.   spending on cell phone service.
b.   spending on entertainment.
c.   purchases of necessities like food and clothing.
d.   spending on medical care.
e.   Consumption includes all of the above.

(7) Investment spending in the national accounts does *not* include purchases of
a.   new homes.
b.   tractor-trailer trucks.
c.   telecommunications equipment.
d.   certificates of deposit in banks.
e.   new factories.

(8) Government purchases in the national accounts do *not* include
a.   spending on highway construction.
b.   salaries of public school teachers.
c.   pay for members of the armed services.
d.   spending for social security benefits.
e.   spending on national parks.

(9) When GDP is computed by the value-added or production approach, value-added by a company equals its revenues minus
a.   wages and salaries of employees.
b.   spending on intermediate goods.
c.   spending on machinery and equipment.
d.   All of the above.

(10) SAP is a German company with operations all over the world. According to the income approach to computing GDP, SAP's profits from its operations in the United States should
a. be included in U.S. GDP but not in Germany's GDP.
b. be included in Germany's GDP but not in U.S. GDP.
c. be included in both U.S. GDP and Germany's GDP.
d. not be included in U.S. GDP or Germany's GDP.

(11) If nominal GDP increases by 5 percent from one year to the next, while real GDP increases by 2 percent, then the rate of inflation (measured by the GDP price index) is about
a. negative 7 percent.
b. 2 percent.
c. 3 percent.
d. 5 percent.
e. 7 percent.

f. 10 percent.

(12) The rate at which you can buy euros with your dollars is called the
a. real interest rate.
b. trade balance.
c. market exchange rate.
d. purchasing-power parity exchange rate.

II. Problems: Insert your answer to each question in the box provided. Please use the margins and graphs for scratch work. Only the answers in the boxes will be graded. Work carefully—partial credit is not normally given for questions in this section.

(1) [Inflation: 2 pts] According the U.S. Bureau of Labor Statistics, the CPI was 224.9 in 2011 and 229.6 in 2012. Compute the annual rate of inflation over this period to the nearest tenth of a percentage point.

| % |

(2) [Real interest rate: 2 pts] Suppose banks pay an interest rate of 3 percent on deposits and the expected inflation rate is 2 percent. Compute the real rate of interest.

| % |

(3) [Spending approach to GDP: 16 pts] Consider each of the following items sold in 2014. Should the item be counted as part of U.S. GDP for 2014—*YES* or *NO*? If *YES*, in which spending component of GDP—consumption (C), investment (I), government purchases (G), or net exports (X)—does it belong? If *NO*, explain why not.

	Part of U.S. GDP for 2013? *(YES or NO)*	*If YES, then which spending component (C, I, G, or X)?* *If NO, why not?*
a. A 1962 Chevrolet Corvette car, sold to a collector in Missouri.		
b. A Boeing passenger jet, sold to Japan Air Lines.		
c. A share of stock in Microsoft Corporation, sold to a person saving for retirement.		
d. A new computer system, sold to a school district.		

(4) [Components of GDP: 16 pts] The imaginary country of Concrete Land has just four industries: the Raw Concrete Industry, the Building Construction Industry, the Road Construction Industry, and the Birdbath Industry. There are no other goods and no foreign trade. In a recent year:

- The Birdbath Industry produced and sold $800 billion of birdbaths to consumers.

- The Road Construction Industry produced $300 billion of roads for the government.

- The Building Industry produced and sold $50 billion of buildings (a capital good) to each industry (including itself) for a total of $200 billion in sales.

- The Raw Concrete Industry produced and sold, $300 billion to the Birdbath Industry, $100 billion to the Road Construction Industry, and $50 billion of raw concrete to the Building Industry, for a total of $450 billion in sales.

a. Compute the spending components of Concrete Land's GDP.

Consumption (C)	$ billion
Investment (I)	$ billion
Government purchases (G)	$ billion
Total GDP (Y)	$ billion

b. Compute value added by each industry in Concrete Land.

Raw Concrete Industry	$ billion
Building Industry	$ billion
Road Construction Industry	$ billion
Birdbath Industry	$ billion

(5) [Spending approach to GDP: 12 pts] The table below shows data for the United States as reported by the Bureau of Economic Analysis in trillions. [Hint: Some of the data are extraneous and not needed for solving this problem.]

	2012
State and local purchases	$1.9
Compensation of employees	$8.6
Transfer payments	$2.4
Consumption of durable goods	$1.2
Corporate profits	$2.0
Consumption of nondurable goods	$2.5
Personal dividend income	$0.8
Imports	$2.8
National defense purchases	$0.8
Federal nondefense purchases	$0.5
Depreciation (capital consumption of domestic business)	$1.6
Consumption of services	$7.3
Business fixed investment	$2.0
Residential investment	$0.4
Personal interest income	$1.3
Change in inventories	$0.1
Exports	$2.2

a. Compute consumption (C).

$ _____ trillion

b. Compute gross investment (I).

$ _____ trillion

c. Compute net investment.

$ _____ trillion

d. Compute government purchases (G).

$ _____ trillion

e. Does the U.S. have a trade surplus or a trade deficit ?

f. Compute net exports (X).

$ _____ trillion

(6) [GDP, saving, GDP per capita: 6 pts] The table below shows data for the United States as reported by the Bureau of Economic Analysis in *trillions*. [Hint: Some of the data are extraneous and not needed for solving this problem.]

	2009
Transfers	$2.1
Government purchases	$3.1
Consumption	$9.8
Population in millions	307
Investment	$1.9
Personal taxes	$1.1
Net exports	$-0.4

a. Compute GDP.

$ _____ trillion

b. Compute national saving (S).

$ _____ trillion

c. Compute GDP per capita to the nearest dollar.

$ _____

(7) [Stocks v. flows: 8 pts] Are the following quantities stocks or flows? Write "STOCK" or "FLOW" in each box.

a. The number of people in the building at 801 Grand Avenue.

b. The amount of investment spending per year.

c. The number of people leaving the building at 801 Grand Avenue between 5:00 and 6:00 last Friday.

d. The amount of economic capital currently available in the economy.

(8) [Value added: 2 pts] Suppose a bookstore has sales of $700,000 in a year. Over the same year, it pays its employees $120,000, it leases the shop for $40,000, and it purchases $400,000 in books from publishers. Compute the value added by the bookstore.

$

(9) [GDP and real GDP: 8 pts] In an imaginary country, only two final goods are produced, as shown in the following table.

Year	Food		Clothing	
	Price	Quantity	Price	Quantity
2012	$5	10	$4	50
2013	$5	16	$9	50

a. Compute the growth rate of *nominal GDP* (also called "current-dollar GDP") from 2012 to 2013.   %

b. Compute the growth rate of GDP from 2012 to 2013 *in constant 2012 prices*.   %

c. Compute the growth rate of GDP from 2012 to 2013 *in constant 2013 prices*.   %

d. Compute the growth rate of *real GDP* from 2012 to 2013, as it would be computed by the U.S. Bureau of Economic Analysis.   %

(10) [Nominal GDP, real GDP, and inflation: 7 pts] The following table shows data for Israel, in billions of *shekels* the Israeli currency.

Year	Nominal GDP	Real GDP	GDP price index or price deflator (to the nearest tenth)	Rate of inflation (to the nearest tenth of a percentage point)
2008	765	810		
2009	809	820		%
2010	866	866		%

a. [2 pts] Which is the base year for real GDP?

b. [3 pts] Compute the GDP price index for each year, to the nearest tenth, and insert it in the table above. [Hint: The price index should equal 100.0 in the base year.]

c. [2 pts] Compute the rate of inflation for the last two years, to the nearest tenth of a percentage point, and insert in in the table above.

(11) [Using the CPI: 2 pts] According the U.S. Bureau of Labor Statistics, a gallon of gasoline cost $1.09 in January 1990, when the CPI was 127.4. The CPI is now about 238. Compute the price of a gallon of gasoline in 1990 in today's dollars to the nearest cent.

$

(12) [Using market exchange rate: 2 pts] The exchange rate for Singapore dollars is 1.27 per U.S. dollar. Then a laptop computer that costs 800 Singapore dollars will cost how much in U.S. dollars, to the nearest whole dollar?

$

(13) [PPP exchange rate: 2 pts] Suppose a basket of goods bought by a typical consumer that costs 1000 *pesos* in Mexico would cost 230 US dollars in the United States. What is the purchasing-power-parity exchange rate to the nearest hundredth?

Mexican *pesos* per US dollar

III. Critical thinking: Write a one-paragraph essay answering **ONE** question below (your choice). [3 pts]

(1) Which spending component of GDP is most important for *future* economic growth? Justify your answer.

(2) From 1997 to 2013 in Japan, nominal GDP grew more slowly than real GDP. Now in most countries, nominal GDP grows faster than real GDP. What must have happened in Japan to cause this phenomenon? Justify your answer.

Circle the question you are answering. Write your answer below. Full credit requires correct economic reasoning, legible writing, good grammar including complete sentences, and accurate spelling.

[end of exam]