Principles of Macroeconomics (Econ 001)
Drake University, Fall 2012
William M. Boal

Signature: _____

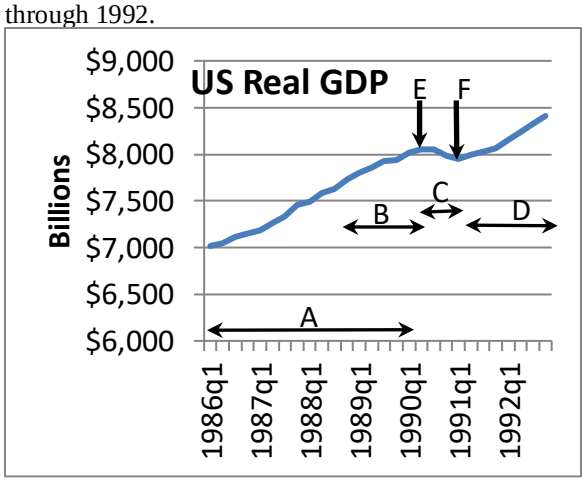
Printed name: _____

EXAMINATION #2 VERSION B
"National Income and Product Accounts"
October 9, 2012

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. [1 pt each, 9 pts total]

The next two questions refer to the following graph, which shows a U.S. business cycle from 1986 through 1992.



(1) A *boom* is marked in the graph above by the letter
a. A.
b. B.
c. C.
d. D.
e. E.
f. F.

(2) A *trough* is marked in the graph above by the letter
a. A.
b. B.
c. C.
d. D.
e. E.
f. F.

(3) At the trough of a business cycle, actual GDP is
a. above potential GDP.
b. below potential GDP.
c. equal to potential GDP.
d. cannot be determined from information given.

(4) In recent years, Japan experienced a *negative* inflation rate of around -1%. This is an example of
a. reflation.
b. recession.
c. disinflation.
d. deflation.

(5) Fiscal policy does *not* concern
a. taxes.
b. government spending.
c. the money supply.
d. government borrowing.
e. All of the above are part of monetary policy.

(6) Investment spending in the national accounts does *not* include purchases of
a. business software.
b. trucks and heavy equipment.
c. new factories.
d. corporate bonds.
e. new homes.

(7) Government purchases in the national accounts do *not* include
a. salaries of public school teachers.
b. pay for members of the armed services.
c. welfare programs such as Temporary Aid for Needy Families.
d. spending on national parks.
e. spending on highway construction.

(8) If a country's national savings are equal to its investment spending (I), then the country must have
a. a trade surplus.
b. a trade deficit.
c. zero net exports.
d. cannot be determined from information given.

(9) The exchange rate was 46 Indian rupees per U.S. dollar in 2010, and 53 rupees per U.S. dollar in 2012. Clearly, the
a. dollar appreciated against the rupee.
b. rupee depreciated against the dollar.
c. both of the above.
d. none of the above.

II. Problems: Insert your answer to each question in the box provided. Use graphs and margins 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) [Macroeconomic record: 8 pts] Which of the following show an upward trend in the U.S. over the last 50 years? Which show no particular long-run trend? Write "TRENDED" for items with a long-run upward trend. Write "NOT TRENDED" for other items.

a. The Consumer Price Index.		e. The interest rate.	
b. Population.		f. Nominal GDP.	
c. The unemployment rate.		g. Real GDP per capita.	
d. Productivity.		h. The inflation rate.	

(2) [Inflation: 2 pts] According the U.S. Bureau of Labor Statistics, the CPI was 217.330 in December 2009, and was 220.414 in December 2010. Compute the annual rate of inflation over this period to the nearest tenth of a percentage point.

%

(3) [Real interest rate: 2 pts] Suppose banks pay an interest rate of 5 percent on deposits and the expected inflation rate is 2 percent. Compute the real rate of interest.

%

(4) [Spending approach to GDP: 16 pts] Consider each of the following items sold in 2012. Should the item be counted as part of U.S. GDP for 2012—*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 2012? (YES or NO)	*If YES, then which spending component (C, I, G, or X)? If NO, why not?*
a. A 1967 Chevrolet Corvette, made in Michigan, purchased by a collector in West Des Moines.		
b. A Boeing passenger jet, made in Washington State last February, purchased by an Asian airline.		
c. A bulldozer, made in Illinois last June, purchased by a construction company in Des Moines.		
d. A new high school, built by a school district in eastern Iowa last spring.		

(5) [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 Raw Concrete Industry produced and sold $50 billion of raw concrete to the Building Industry, $50 billion to the Road Construction Industry, and $100 billion to the Birdbath Industry for a total of $200 billion in sales.
- The Road Construction Industry produced and $300 billion of roads for the government.
- The Birdbath Industry produced and sold $900 billion of birdbaths to consumers.
- The Building Industry produced and sold $100 billion of buildings (a capital good) to each industry (including itself) for a total of $400 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

(6) [Investment spending: 4 pts] The table below shows data for the United States as reported by the Bureau of Economic Analysis. [Hint: Some of the data are extraneous and not needed for solving this problem.]

	2008
Corporate profits	$1.2 trillion
Compensation of employees	$8.1 trillion
Residential investment	$0.5 trillion
Borrowing by nonfinancial corporate businesses	$0.3 trillion
Exports	$1.8 trillion
Personal dividend income	$0.8 trillion
Business fixed investment	$1.7 trillion
Change in private inventories	$-0.1 trillion
Depreciation ("consumption of fixed capital, private")	$1.5 trillion
Personal consumption expenditures, durable goods	$1.1 trillion

a. Compute gross investment (I). $ trillion

b. Compute net investment. $ trillion

(7) [Stocks v. flows: 4 pts] Are the following quantities stocks or flows? Write "STOCK" or "FLOW" in each box.

a. The number of houses built in Des Moines from January 1, 2010 to June 30, 2010.

b. The amount of investment spending in the U.S. in 2009.

c. The number of houses in Des Moines as of July 1, 2010.

d. The amount of economic capital in the U.S. on January 1, 2010.

(8) [Spending components of GDP: 8 pts] The table below shows data for the United States as reported by the Bureau of Economic Analysis. [Hint: Some of the data are extraneous and not needed for solving this problem.]

	2002
Personal current transfer receipts	$1.2 trillion
Consumption	$7.4 trillion
Social Security and other social insurance payments	$1.2 trillion
Gross investment	$1.6 trillion
Government purchases	$2.0 trillion
Imports	$1.4 trillion
National defense	$0.4 trillion
Exports	$1.0 trillion

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

b. Compute net exports (X). $ trillion

c. Compute GDP. $ trillion

d. Compute national saving (S). $ trillion

(9) [Value added: 2 pts] Suppose a coffee shop has sales of $150,000 in a year. Over the same year, it pays its employees $40,000, it leases the shop for $10,000, and it purchases $90,000 in ingredients. Compute the value added by the coffee shop. $

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

Year	Food		Shelter	
	Price	Quantity	Price	Quantity
2010	$2	25	$5	10
2011	$2	31	$7	10

a. Compute the growth rate of *nominal GDP* (also called "current-dollar GDP") from 2010 to 2011. ____ %

b. Compute the growth rate of GDP from 2010 to 2011 *in constant 2010 prices*. ____ %

c. Compute the growth rate of GDP from 2010 to 2011 *in constant 2011 prices*. ____ %

d. Compute the growth rate of *real GDP* from 2010 to 2011, as it would be computed by the U.S. Bureau of Economic Analysis. ____ %

(11) [Real GDP and inflation: 12 pts] Fill in the six blanks in the following table. Compute the GDP deflator to the nearest tenth. Compute the inflation rate to the nearest tenth of a percentage point.

	2006	2007	2008
Nominal GDP	$13,377 billion	$_____ billion	$14,292 billion
Population	299 million	302 million	_____ million
Real GDP	$12,959 billion	$13,206 billion	$_____ billion
Real GDP per capita	$_____	$43,774	$43,219
GDP deflator (or price index)	_____	106.23	108.58
Annual inflation rate		_____%	2.22%

(12) [Using the CPI: 2 pts] Volkswagen sold the Beetle car in 1970 at a price of about $2,000. In that year, the CPI was about 39. The CPI is now about 230. Compute the price of 1970 Beetle in today'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 4000 bahts in Thailand would cost $100 in the United States. What is the purchasing-power-parity exchange rate? bahts per US dollar

(14) [Using market exchange rate: 2 pts] Suppose the exchange rate for British pounds is 0.62 pounds per U.S. dollar. Then a software program that costs 50 pounds in Britain will cost how much in U.S. dollars, to the nearest whole dollar? $

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

(1) Which usually grows faster in a country—real GDP or real GDP per capita? Explain your reasoning.

(2) Suppose the value of final goods and services produced annually in Country A is identical to that in Country B: $3 trillion. However, Country A has few very rich people or very poor people, while income and wealth are more unequal in Country B. On the other hand, Country A has major pollution problems, while Country B has almost no pollution. Which country has higher GDP? Justify your answer.

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

[end of exam]