TOTAL SCORE_____ **MC____**
EXE 1____
EXE 2____

Econ 002- INTRO MACRO Prof. Luca Bossi February 12, 2015
MIDTERM #1 – SOLUTIONS

My signature below certifies that I have complied with the University of Pennsylvania's Code of Academic Integrity in completing this examination. In particular, I declare that I have not used a graphing calculator to complete this exam.

_____ _____
Student Name (printed) **PennID**

_____ _____ _____
Your Signature **Date** **Your TA Name (printed)**

INSTRUCTIONS

The exam is closed book. The exam is composed of 21 multiple choice questions and two exercises. Unless stated otherwise, all multiple choice questions are worth 3 points (the total is 60 points for the multiple choice part). The exercises are worth 20 points each (the total is 40 points for the exercise part). You can detach the answer sheet for the MC part at the end of the exam if this is more comfortable for you. If that is the case, be sure to put your name on it and to tell your TA to staple it back to the exam when finished. If you do not fill in the MC part on time and request extra time at the end of the exam to write the answers up, a proctor will take your name and you will receive a penalty of 5 points. Please follow the instructions as to how to submit your exam at the end of the 60 minutes. If you do not follow those instructions and/or delay your exam submission, a proctor will take your name and you will receive a penalty that will depend on your (miss)behavior.

ANSWER ALL QUESTIONS. TOTAL POINTS = 100. TOTAL TIME = 60 minutes

Provide your answers on the exam sheet directly. Read all questions very carefully. Write legibly.

EXAM TAKING POLICY

If you need to use the restroom, raise your hand and wait for the proctor to come to you. Only one person can be out of the examination room at a time, and the proctor will hold onto your exam papers while you are out at the restroom.

FOR THE DURATION OF THE EXAM, AND WITH THE EXCEPTION OF YOUR ALLOWED SCIENTIFIC CALCULATOR, YOU HAVE TO TURN OFF EVERYTHING ELSE THAT HAS A POWER BUTTON. NO CELL PHONES. NO BOOKS. NO NOTES. NO HELP SHEETS. NO TALKING TO EACH OTHER. NO ASKING THE PROCTORS ANY QUESTION OR HELP TO SOLVE THE EXAM. YOU CANNOT CONNECT TO THE INTERNET.

WRITE IN PENCIL OR IN PEN AS YOU LIKE, BUT IF YOU WRITE IN PENCIL THERE IS NO POSSIBILITY TO ASK FOR RE-GRADING. PLEASE WRITE YOUR NAME ON THE FIRST PAGE OF THE EXAM AND ON THE MC BUBBLE PAGE.

PLEASE DO NOT START THIS EXAM UNTIL INSTRUCTED TO DO SO.

GOOD LUCK!

MULTIPLE CHOICE QUESTIONS

Identify the letter that best completes the statement or answers the question. Mark your answer (fill in the letter of your choice) in the answer bubble sheet for the MC provided on the last page of the exam.

1) Suppose your management professor has been offered a corporate job with a 30 percent pay increase. He has decided to take the job. For him, the marginal
a. benefit of leaving was greater than the marginal cost.
b. cost of leaving was greater than the marginal benefit.
c. benefit of teaching was greater than the marginal cost.
d. All of the above are correct.

2) The residents of country A earn $500 million of income from abroad. Residents of other countries earn $200 million in country A. The earnings that Country A residents earn abroad are accounted for in country A's
a. GNP which is larger than GDP in country A.
b. GNP which is smaller than GDP in country A.
c. GDP which is larger than GNP in country A.
d. GDP which is smaller than GNP in country A.

3) Which of the following transactions does *not* take place in the markets for the factors of production in the circular-flow diagram?
a. Jason provides plumbing services for a plumbing company and receives an hourly wage from the company for his services.
b. Jennifer works as a marriage counselor and her clients pay her on a per-hour basis for her services.
c. Brody owns several shopping malls and receives rent payments from the companies that operate those malls.
d. Bree sells advertising for a newspaper and receives a commission from the newspaper company for each advertisement that she sells.

4) A U.S. grocery chain purchases olive oil from Tunisia and sells it to U.S. consumers. In which of the following is this transaction included?
a. U.S. consumption and U.S. imports
b. U.S. consumption but not U.S. imports
c. U.S. imports but not U.S. consumption
d. neither U.S. consumption nor U.S. imports

5) Which of the following is *not* a reason that paying efficiency wages may increase a firm's profit?
a. Efficiency wages increase worker health and therefore increase worker productivity.
b. Efficiency wages decrease worker turnover and therefore decrease hiring and training costs.
c. Efficiency wages decrease worker shirking and therefore increase worker productivity.
d. Efficiency wages decrease a country's natural rate of unemployment and therefore increase its standard of living.

6) During the third quarter of 2006, a firm produces consumer goods and adds some of those goods to its inventory. During the fourth quarter of 2006, the firm sells the goods at a retail outlet, with the result that the value of its inventory at the end of the fourth quarter is smaller than the value of its inventory at the end of the third quarter. These actions affect which component(s) of fourth-quarter GDP?
a. These actions affect only consumption, and they affect consumption positively.
b. These actions affect only investment, and they affect investment positively.
c. These actions affect consumption positively and investment negatively.
d. These actions affect both consumption and investment positively.

7) Consider the following three items of spending by the government: (1) the federal government pays a $500 unemployment benefit to an unemployed person; (2) the federal government makes a $2,000 salary payment to a Navy lieutenant; (3) the city of Bozeman, Montana makes a $10,000 payment to ABC Lighting Company for street lights in Bozeman. Which of these payments contributes directly to government purchases in the national income accounts?

a. only item (1)
b. only item (2)
c. only items (1) and (2)
d. only items (2) and (3)

8) James owns two houses. He lawfully rents one house to the Johnson family for $10,000 per year. He lives in the other house. If he were to rent the house in which he lives, it has been estimated that he could earn $12,000 per year in rent. How much do the housing services provided by these two houses contribute to GDP?

a. $0
b. $10,000
c. $12,000
d. $22,000

9) Suppose an economy produces only iPhones and bananas. In 2010, 1000 iPhones are sold at $300 each and 5000 pounds of bananas are sold at $3 per pound. In 2009, the base year, iPhones sold at $400 each and bananas sold at $2 per pound. For 2010,

a. nominal GDP is $315,000, real GDP is $410,000, and the GDP deflator is 76.83.
b. nominal GDP is $410,000, real GDP is $315,000, and the GDP deflator is 130.16.
c. nominal GDP is $315,000, real GDP is $410,000, and the GDP deflator is 130.16.
d. nominal GDP is $410,000, real GDP is $315,000, and the GDP deflator is 76.83.

10) During a presidential campaign, the incumbent argues that he should be reelected because nominal GDP grew by 12 percent during his 4-year term in office. You know that population grew by 4 percent over the period and that the GDP deflator increased by 6 percent during the past 4 years. You should conclude that real GDP per person

a. grew by more than 12 percent.
b. grew, but by less than 12 percent.
c. was unchanged.
d. decreased.

11) In 1931, President Herbert Hoover was paid a salary of $75,000. Government statistics show a consumer price index of 15.2 for 1931 and 207 for 2007. President Hoover's 1931 salary was equivalent to a 2007 salary of about

a. $5507.
b. $1,021,382.
c. $1,140,000.
d. $15,525,000.

12) Suppose some unemployed people search for jobs only at places where they are unlikely to be hired, so that they can still qualify for unemployment benefits. These people are officially counted as unemployed. If these individuals were counted as out of the labor force instead of as unemployed, then

a. both the unemployment rate and labor-force participation rate would be higher.
b. both the unemployment rate and labor-force participation rate would be lower.
c. the unemployment rate would be lower and the labor-force participation rate would be higher.
d. the unemployment rate would be higher and the labor-force participation rate would be lower.

13) Assume most athletic apparel bought by U.S. consumers is imported from other nations. If all else is constant, an increase in the price of foreign-made athletic apparel will cause the U.S.

a. consumer price index and GDP deflator to increase by exactly the same amount.
b. GDP deflator to increase more than the consumer price index.
c. consumer price index to increase more than the GDP deflator.
d. GDP deflator to decrease less than the consumer price index.

14) Over the last few decades, Americans have chosen to cook less at home and eat more at restaurants. This change in behavior, by itself, has

a. reduced measured GDP.
b. not affected measured GDP.
c. reduced measured GDP only to the extent that the value of the restaurant meals is greater than the value of meals previously cooked at home.
d. increased measured GDP by the full value of the restaurant meals minus the value of the ingredients that Americans used to be buying to make their own meals.

15) In Tomato Land tomato seeds are free, farmers sell tomatoes to factories for $100. Factories sell ketchup to supermarkets for $150. Supermarkets sell ketchup to consumers for $300.

a. The value added by the supermarkets is $50.
b. The total value added is $300.
c. The value added by the factories is $150.
d. The value added by the supermarkets is $250.

16) President Luke Skywalker is running for re-election against Senator Han Solo. Skywalker proclaims that more people are working now than when he took office. Solo says that the unemployment rate is higher now than when Skywalker took office. You conclude that

a. both of them could be telling the truth if the labor force grew faster than employment.
b. both of them could be telling the truth if the labor force participation rate and the labor force both fell.
c. both of them could be telling the truth if the labor force grew slower than employment.
d. one of them must be lying.

17) Other things the same, an increase in wages above their equilibrium level

a. increases frictional unemployment but leaves the natural rate of unemployment unchanged.
b. increases frictional unemployment and increases the natural rate of unemployment.
c. increases structural unemployment but leaves the natural rate of unemployment unchanged.
d. increases structural unemployment and increases the natural rate of unemployment.

18) An anti-smoking campaign in Moscow, Russia, causes Muscovites to smoke less and chew more gum. Tobacco companies lay off workers, while chewing gum manufacturers employ more workers. This is an example of

a. structural unemployment created by efficiency wages.
b. structural unemployment created by sectoral shifts.
c. frictional unemployment created by efficiency wages.
d. frictional unemployment created by sectoral shifts.

19) The consumer price index was 225 in 2006 and 234 in 2007. The nominal interest rate during this period was 6.5 percent. What was the real interest rate during this period?

a. 2.5 percent
b. 4.0 percent
c. 6.76 percent
d. 10.5 percent

20) (2 POINTS) According to the assigned reading I gave you: "Are Greeks lazy?" In 2008:

a. The average German worker put in more hours on the job that the average Greek worker.
b. The average Dutch worker put in more hours on the job that the average Spanish worker.
c. The average Italian worker put in more hours on the job that the average German worker.
d. None of the above.

21) (1 POINT) We studied how to use a price index such as the CPI to compare dollar figures across time. In particular during a class this past few weeks we applied that method to check with an example whether the US minimum wage at the federal level had kept up for inflation between 1962 and 2014. We found it did not. Professor Bossi used a particular adjective to describe the fact that the US minimum wage did not keep up with inflation. He told repeatedly students in attendance to write down that adjective as students would be tested on it. The term used by Professor Bossi to qualify that finding was:

a. Extravagant.
b. Puzzling.
c. Paradoxical.
d. Obvious.

To get full credit in the exercises below you really need to show your work. If you write just a number as the answer and even if that number is correct you will not get full credit in the exercise unless you show fully the formulas and your work (how you got that number and the steps involved in your computation).

EXERCISE I (20 points total)

You have the following Information about a generic country:

	Produced and Consumed in the Country		Imported and Consumed in the Country	
	Books		Pencils	
	Quantity	Price	Quantity	Price
2009	1	2	3	4
2010	2	4	2	3
2011	3	3	5	7

	Produced and Consumed in the Country		Produced and Exported	
	Papers		Beers	
	Quantity	Price	Quantity	Price
2009	1	2	5	1
2010	3	5	10	2
2011	6	2	7	4

a) (12 POINTS) Complete the following table, show the general formulae that you use with enough detail such that all your numbers can be justified (Use 2 decimals when needed.):

	Base year is 2009			
	Real GDP	Nominal GDP	GDP Deflator	Inflation based on GDP deflator
2009				
2010				
2011				

b) (8 POINTS) Complete the following table, show the general formulae that you use with enough detail such that all your numbers can be justified (Use 2 decimals when needed.):

	Basket: For every relevant good use only one unit, base year is 2009		
	Cost of the Basket	CPI	Inflation based on CPI
2009			
2010			
2011			

PAPER FOR YOUR USE

Answers:

a) For the calculation of the GDP only the produced goods must be taken into account. This means that you should use only books, paper and beers, but not pencils. If you think of the expenditure formula (Y=C+I+G+EXP-IMP), then C must include Pencils and those will be also subtracted as IMP such that you also end with only the three produced goods. Recall that you do not have any information of 2008 prices, so, the inflation in 2009 cannot be calculated irrespective of the fact that you are using GDP deflator or CPI to compute it (this is very different than saying that the inflation is 0% which is a mistake!)

	Base year is 2009			
	Real GDP	**Nominal GDP**	**GDP Deflator**	**Inflation based on GDP deflator**
2009	9	9	100	Not Available
2010	20	43	215	115%
2011	25	49	196	-8.84%

b) The first step is to choose the appropriate basket. One item of each relevant good means one unit of each consumed good, no matter where it was produced! So the basket has one book, one pencil and one paper BUT NOT BEERS! As before, the inflation for 2009 is not available. Do not confuse the cost of the basket with the CPI.

	Basket: For every relevant good use only one unit, base year is 2009		
	Cost of the Basket	**CPI**	**Inflation based on CPI**
2009	8	100	Not Available
2010	12	150	50%
2011	12	150	0%

EXERCISE II (20 points total)

Suppose we know the following information about the labor market in Alphabet Town (AT):

- The unemployment rate for AT is 20%.
- There are 120,000 women working in AT.
- The labor force participation rate for men is 25%.
- There are three times as many employed women as men in AT.
- Of the men who are in the labor force, 5 out of 6 are actually employed.

To answer the following questions, you can assume that the adult population in AT is equally divided between men and women.

a) (6 POINTS) Find the number of men who are of working age.

b) (7 POINTS) How many unemployed people are there in AT?

c) (7 POINTS) What is the unemployment rate for men and for women in AT? (Use 2 decimals).

PAPER FOR YOUR USE

Answers:

a) Since we know there's 3 times as much women working as men working, the number of employed men is 40,000 (=120,000/3). Thus, we also know that the total number of men in the labor force is 6/5*40,000 = 48,000. Given that the labor force participation rate for men is 25%, this means that the total number of men of working age is 48,000*4 = 192,000.

b) We know that there are 40,000 employed men and 120,000 employed women, so the total number of employed people is 160,000. To find the total unemployed, we use the unemployment rate.
Recall that: unemployment rate = #Unemployed / (#Employed + #Unemplyed)
So we know that:
0.2 = #Unemployed /(160,000 + #Unemployed)
Solve for #Unemployed:
32,000 + 0.2*#Unemployed = #Unemployed
#Unemployed = 40,000

c) We know that there are 48,000 men in the labor force. We also found that 40,000 of them are employed. So 8,000 must be unemployed. The Unemployment Rate for men is then 8,000/48,000 = 16.67%.
Since there is a total of 40,000 unemployed people in AT, and 8,000 of them are men, 32,000 must be women. The Unemployment Rate for women is 32,000 / (32,000+120,000) = 21.05%

MARK CLEARLY (FILL IN) THE LETTER OF YOUR CHOICE FOR THE MULTIPLE CHOICE QUESTIONS <u>ONLY THIS PAGE WILL BE GRADED FOR THE MC PART.</u>

1.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
2.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
3.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
4.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
5.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
6.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
7.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
8.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
9.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
10.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
11.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
12.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
13.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
14.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
15.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
16.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
17.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
18.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
19.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
20.	Ⓐ	Ⓑ	Ⓒ	Ⓓ
21.	Ⓐ	Ⓑ	Ⓒ	Ⓓ