

NAME: \_\_\_\_\_

**Cooleconomics.com**  
**Principles of Macroeconomics**

**Exam 1 Answers**

**Instructions (Read Carefully and Follow Precisely):**

You have 50 minutes to complete this closed-notes, closed-book, 100-point exam. (You may use a 1-sided 8.5x11" notes sheet and a calculator whose memory and programming are cleared.)

You may not collaborate with any other person in any way on this exam.

Write legibly and coherently, please. **You MUST show all calculations to receive any credit for answers that require calculations** (Answers might not be whole numbers). Label all axes, curves, and points on graphs. Good luck!

**1. (25 points)** BuffyLand is a fake economy in which only 2 goods are produced--wheat and corn. Below is some BuffyLand economic information. Fill in the blank spaces.

<u>Year</u>	<u>Wheat</u>		<u>Corn</u>		<u>Nominal GDP</u>	<u>Real GDP</u>	<u>GDP Deflator</u>
	<u>Price</u>	<u>Quantity</u>	<u>Price</u>	<u>Quantity</u>			
1998	20	<u>6</u>	40	200	<u>8120</u>	8120	100
1999	50	40	<u>7.50</u>	400	5000	<u>16800</u>	<u>29.762</u>

The hourly minimum wage remained constant at \$5/hour from 1998 to 1999 in BuffyLand. Calculate by how much the purchasing power of the minimum wage changed from 1998 to 1999. (Be specific, and clearly indicate whether the purchasing power *increased* or *declined*.)

Precise change in purchasing power of the minimum wage 236%

We can convert the 1999 nominal minimum wage to a real minimum wage:

$$1999 \text{ real minimum wage} = 100 \times \$5/29.762 = \$16.80$$

$$\% \text{ increase in real minimum wage} = (\$16.80 - 5)/5 = 236\%$$

Calculations (required):

**2. (10 points)** Indicate (no explanations required) whether each of the following people is frictionally unemployed or structurally unemployed or cyclically unemployed or not officially unemployed.

a) A poorly educated former telephone operator, replaced by a machine, looking for work.

**structural**

b) A woman with good job skills who cannot find a job due to a sluggish economy.

**cyclical**

c) A 17 year old with good job skills looking for a job.

**frictional**

d) A welfare recipient with good job skills who is not looking for work.

**not officially**

e) A man with obsolete job skills who has given up trying to find work.

**not officially**

**3. (10 points)** Name 2 costs of inflation; describe each cost in one or two sentences each.

**Shoe leather costs: Wasted time allocating wealth between cash and interest-bearing assets when inflation is high.**

**Menu costs: Waste of resources raising advertised prices due to inflation**

**Unexpectedly high inflation capriciously redistributes purchasing power from lenders to borrowers.**

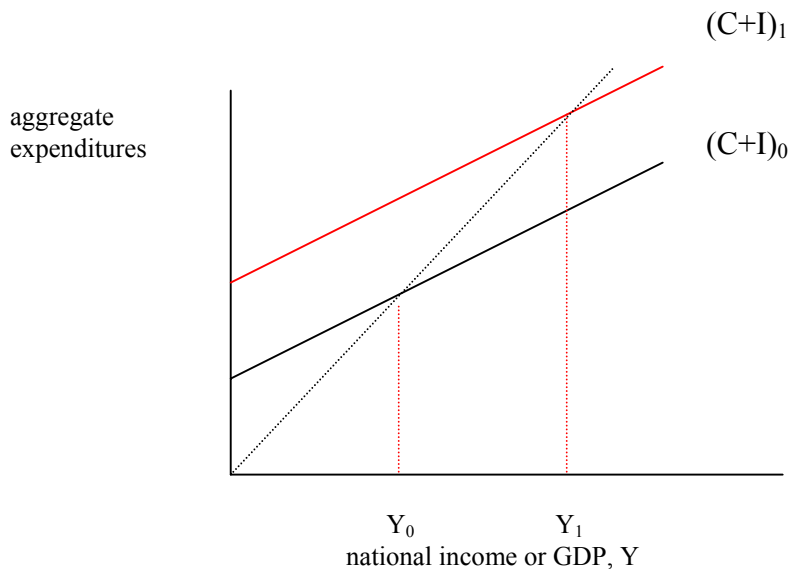
**Uncertainty of high, unstable inflation makes planning difficult, reducing long term economic growth.**

**4. (20 points)** In a fake economy with no government or foreign sector, a fake politician exclaims: “If everyone decides to save a smaller chunk of their income, then it will cause our economy to shrink in the short run.” You will now critique the politician’s claim.

a) Will a lower savings rate cause the economy to shrink in the short term? Carefully explain why or why not, using information and terminology from class.

**No. Lower savings rates free up income for more consumption expenditures, and increased aggregate expenditures causes the economy to grow in the short term—not shrink.**

b) Illustrate the effects of a lower savings rate on equilibrium in the economy using an aggregate expenditures graph. Carefully and fully label your graph.



c) What will likely happen to total personal savings in this fake economy in the short run? Will it *increase*, *decline*, or *stay the same*? Fully explain using information and terminology from class; your grade depends almost entirely upon your explanation.

**Nothing will happen to total savings. The paradox of thrift tells us that a change in the savings rate (modeled as a change in the MPC in the consumption function) does not cause personal savings,  $S$ , to change. In addition, we know that investment = savings in this type of economy, and since nothing has happened to change investment, savings will stay constant.**

**5. (10 points)** Behold the following information on a fake economy:

Compensation of employees	2000
Disposable personal income	2500
Gross private domestic investment	200
Depreciation	300
Transfer Payments	400
Interest payments by consumers to business	30
Net Exports	250
(net) indirect business taxes	55
Personal savings	500
Net interest	200
Personal transfer payments to foreigners	120
Government purchases	720
Net factor payments to rest of world	40
Government transfer payments	640
Imports	210

Using some of the above information, calculate:

GDP \_\_\_\_\_ NI \_\_\_\_\_

Calculations (required):

$$\text{GDP} = C + I + G + (\text{EX}-\text{IM})$$

$$\text{GDP} = C + 200 + 720 + 250$$

what is C?

$$C = Y_d - S - \text{personal transfers to foreigners}$$

$$- \text{interest payments by consumers to business}$$

$$C = 2500 - 500 - 120 - 30$$

$$C = 1850$$

$$\text{GDP} = 1850 + 200 + 720 + 250 = 3020$$

$$\text{NI} = 3020 - 40 - 300 - 55 = 2625$$

**6. (25 points).** An economy with no government or foreign sector is represented below.

$$C = 500 + .6Y \quad I = 400$$

Calculate the following:

Equilibrium gross domestic product \_\_\_\_\_

Equilibrium personal consumption expenditures \_\_\_\_\_

Equilibrium personal savings \_\_\_\_\_

Change in investment required to achieve full employment GDP of 4000. \_\_\_\_\_

(Along with your specific numerical response, clearly indicate whether investment must *increase* or *decline*)

$$Y = C + I = 500 + .6Y + 400 = 900 + .6Y$$

$$Y = 900 + .6Y$$

$$.4Y = 900 \rightarrow Y = 900/.4 = 2250$$

$$C = 500 + .6(2250) = 1850$$

$$S = Y - C = 400$$

$$\text{change in } I \times 1/(1-\text{slope of AE}) = \text{change in GDP}$$

$$\text{change in } I \times 2.5 = 1750$$

$$\text{change in } I = 1750/2.5 = +700 \text{ (an increase of 700)}$$

Carefully depict equilibrium national income on a graph below:

