Econ 362 Hanes Fall 2024 Final exam

The exam has 57 multiple choice questions for 1 point each, and 22 points of written questions, for a total of 79 points. Good luck! Hint: skip over the questions that are relatively hard to answer, and come back to those later after you have answered the easier ones.

1) Which of the following indicates total dollar income of U.S. residents?
a) Real GDP b) Nominal GDP c) Real GNP (GNI) d) Nominal GNP (GNI) e) None of the above

2) Which of the following indicates total dollar value-added of enterprises located in the U.S.?
a) Real GDP b) Nominal GDP c) Real GNP (GNI) d) Nominal GNP (GNI) e) None of the above

3) Here is some information about a factory that makes shoes. What is value added for this factory?

Revenue from sales of shoes	$10
Wages and salaries of employees	$5
Cost of leather	$1
Cost of fuel to run the factory	$2
Rent paid to factory building owner	$2

Value added is
a) $0 b) $1 c) $2 d) $3 e) None of the above

4) What's bigger, nominal GDP or nominal GNP (GNI)?
a) GDP is bigger b) GNP is bigger c) They must be equal d) Either one can be bigger - it depends.
e) They are measured in different units, so they can't be compared.

5) What's bigger, nominal GDP or nominal NDP (net domestic product)?
a) GDP is bigger b) NDP is bigger c) They must be equal d) Either one can be bigger - it depends.
e) They are measured in different units, so they can't be compared.

6) Which of those people would not be counted as unemployed in our national statistics, but is certainly unemployed on the theoretical concept of unemployment?
a) Harry does not have a job. He is a full-time college student.
b) Melissa owns and manages a Burger King franchise.
c) Aloysius is a recent high-school graduate who does not have a job. He applies for many jobs and goes on many job interviews. He will take a job that pays $100,000 a year, but not a job that pays less than that.
d) Cecilia was an autoworker until the plant shut down. She has not applied for any jobs or had any interviews recently because no employer within commuting distance of her town is hiring. She will take the first job she is offered, at any wage.
e) Harrison is a recent college graduate who does not have a job. He spends all of his time in his mother's basement watching cartoons and huffing aerosols.

7) Which of those people would be counted as unemployed in our national statistics, but is not unemployed on the theoretical concept of unemployment?
a) Harry does not have a job. He is a full-time college student.
b) Melissa owns and manages a Burger King franchise.
c) Aloysius is a recent high-school graduate who does not have a job. He applies for many jobs and goes on many job interviews. He will take a job that pays $200,000 a year, but not a job that pays less than that.
d) Cecilia was an autoworker until the plant shut down. She has not applied for any jobs or had any interviews recently because no employer within commuting distance of her town is hiring. She will take the first job she is offered, at any wage.
e) Harrison is a recent college graduate who does not have a job. He spends all of his time in his mother's basement watching cartoons and huffing aerosols.

8) When a country breaks up into two countries, total real GDP of the two countries together is usually about the same as the real GDP of the original country before the break-up. This shows aggregate production functions have which property?
a) Cobb-Douglas form b) Euler's theorem c) Diminishing marginal product d) Constant returns to scale
e) None of the above

The following information is for 9) - 12). Look at the following data on prices and quantities in an economy.

	Peanut butter		Jelly	
Year	Quantity	Price	Quantity	Price
2002	5	10	100	1
2003	4	11	110	2

9) Which of the lines below gives you the formula for a *Laspeyres price index* for 2003, base year 2002?

a) $[(4\times11)+(110\times2)]$ / $[(4\times10)+(110\times1)]$

b) $[(5\times11)+(100\times2)]$ / $[5\times10)+(100\times1)]$

c) $[(11\times4)+(2\times110)]$ / $[(11\times5)+(2\times100)]$

d) $[(10\times4)+(1\times110)]$ / $[(10\times5)+(1\times100)]$

e) None of the above

10) Which of the lines below gives you the formula for a *Laspeyres quantity index* for 2003, base year 2002?

a) $[(4\times11)+(110\times2)]$ / $[(4\times10)+(110\times1)]$

b) $[(5\times11)+(100\times2)]$ / $[5\times10)+(100\times1)]$

c) $[(11\times4)+(2\times110)]$ / $[(11\times5)+(2\times100)]$

d) $[(10\times4)+(1\times110)]$ / $[(10\times5)+(1\times100)]$

e) None of the above

11) Which of the lines below gives you the formula for a *Paasche price index* for 2003, base year 2002?

a) $[(4\times11)+(110\times2)]$ / $[(4\times10)+(110\times1)]$

b) $[(5\times11)+(100\times2)]$ / $[5\times10)+(100\times1)]$

c) $[(11\times4)+(2\times110)]$ / $[(11\times5)+(2\times100)]$

d) $[(10\times4)+(1\times110)]$ / $[(10\times5)+(1\times100)]$

e) None of the above

12) Which of the lines below gives you the formula for a *Paasche quantity index* for 2003, base year 2002?

a) $[(4\times11)+(110\times2)]$ / $[(4\times10)+(110\times1)]$

b) $[(5\times11)+(100\times2)]$ / $[5\times10)+(100\times1)]$

c) $[(11\times4)+(2\times110)]$ / $[(11\times5)+(2\times100)]$

d) $[(10\times4)+(1\times110)]$ / $[(10\times5)+(1\times100)]$

e) None of the above

13) Which of the following would *not* be included in the construction of a CPI for the United States?
a) Prices of U.S.-produced automobiles
b) Prices of U.S. medical services
c) Tuition rates charged by New York state universities
d) Prices of televisions produced in the country of Taiwan, sold in the U.S.
e) All of the above would be included in that price index

14) Which of the following would *not* be included in the construction of a GDP price index for the United States?
a) Prices of U.S.-produced automobiles
b) Prices of U.S. medical services
c) Tuition rates charged by New York state universities
d) Prices of televisions produced in the country of Taiwan, sold in the U.S.
e) All of the above would be included in that price index

15) Suppose an economy has this aggregate production function: $Y = 10 + 6K^{1/3}L^{2/3} + 2L$
What is the marginal product of *labor* in the economy? Hint: take the derivative in the space below!
a) $4K^{1/3}L^{-1/3} + 2$ b) $4K^{1/3}L^{-1/3}$ c) $2K^{-1/3}L^{-2/3}$ d) $10 + 4K^{1/3}L^{-2/3} + 2$ e) None of the above

16) Suppose an economy has this aggregate production function: $Y = 10 + 6K^{1/3}L^{2/3} + 2L$
What is the marginal product of *capital* in the economy? Hint: take the derivative in the space below!
a) $4K^{1/3}L^{-1/3} + 2$ b) $4K^{1/3}L^{-1/3}$ c) $2K^{-2/3}L^{2/3}$ d) $10 + 4K^{1/3}L^{-2/3} + 2$ e) None of the above

17) Suppose I asked you to use the "Z method" to determine whether the following production function has constant returns to scale: $Y = 10 + K^{1/2}L^{1/2}$. What is the first line of math you would write down? Hint: write down the first line in the space below, then choose the answer that matches what you wrote.

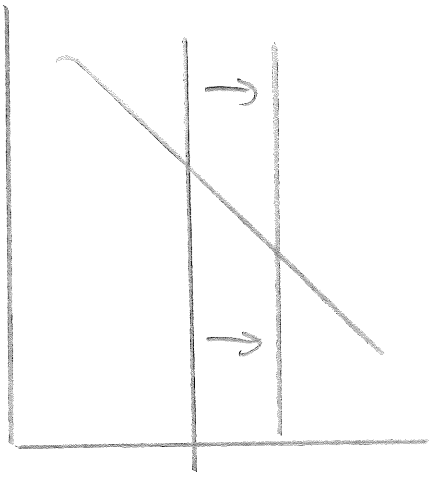
a) $Z(10 + \bar{K}^{1/2}\bar{L}^{1/2}) = Z * 10 + (Z\bar{K})^{1/2}(Z\bar{L})^{1/2}$
b) $Z(10 + \bar{K}^{1/2}\bar{L}^{1/2}) = 10 + Z\bar{K}^{1/2}Z\bar{L}^{1/2}$
c) $10 + Z(\bar{K}^{1/2}\bar{L}^{1/2}) = 10 + (Z\bar{K})^{1/2}(Z\bar{L})^{1/2}$
d) $Z(10 + \bar{K}^{1/2}\bar{L}^{1/2}) = 10 + (Z\bar{K})^{1/2}(Z\bar{L})^{1/2}$
e) None of the above

18) Given the information below, what was the average percent rate of growth of real GDP in the economy?
Share of national income going to owners of capital: 1/3
Average annual growth in total factor productivity (A): 1 %
Average annual growth in capital stock 9%
Average annual growth in labor input 6%

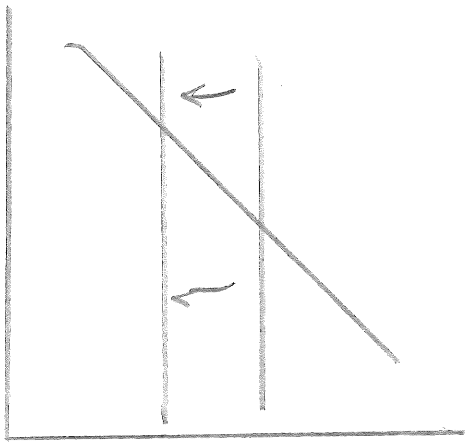
a) 7 % b) 8% c) 9% d) 10% e) None of the above

The following information is for 19) - 22). Consider a closed economy in which *output is always held equal to potential output (natural rate) by a suitable adjustment of the real interest rate.* Look at the four "loanable funds" graphs below. I will ask you to tell me which graph corresponds to a particular event. More than one event may correspond to a given graph. Also, an event may correspond to none of the graphs. Hint: write down the equation for S in the space below and use it to figure out your answers.

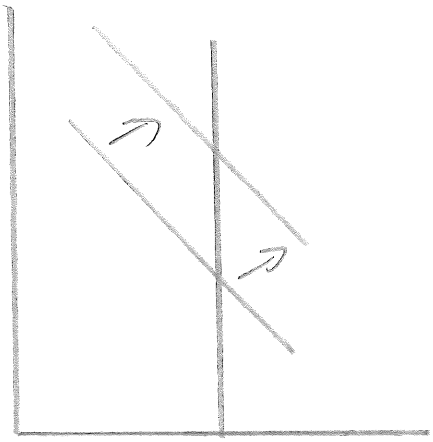
a)



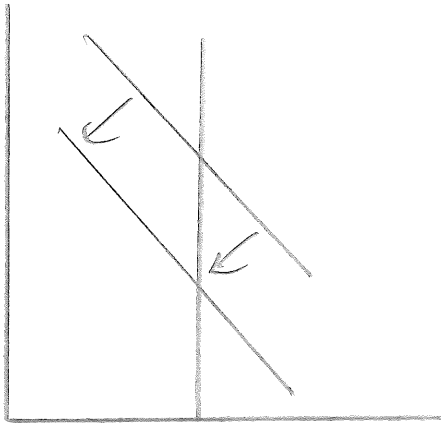
b)



c)



d)



Which graph could correspond to each of the following events?

19) There is an increase in government purchases of goods and services $\overline{G}$.

a) b) c) d) e) None of the above

20) There is an increase in taxes net of transfers $\overline{T}$.

a) b) c) d) e) None of the above

21) There is an increase in the amount of food and clothing people would want to buy at any given level of disposable income. a) b) c) d) e) None of the above

22) There is an increase in the natural rate of output $\overline{Y}$.

a) b) c) d) e) None of the above

23) The Fed's inflation target is 2 percent in the Personal Consumption Expenditure (PCE) price index. The target is specified in the PCE price index *not* the Consumer Price Index (CPI). This might be because:
a) The PCE price index measures changes in prices of all final goods and services produced in America, while the CPI only measures prices of goods and services purchased by Amerrican households
b) The PCE price index measures prices of consumer goods produced within U.S. borders, while the CPI includes prices of imported consumer goods
c) The PCE price index is constructed using a Laspeyres formula, while the CPI is constructed using a Fisher ideal formula
d) The PCE price index is constructed using a Fisher formula, while the CPI is constructed using a Laspeyres formula
e) None of the above is true

24) Three price indexes, A, B and C, were all constructed from the same data on prices and quantities. A was constructed using the Paasche formula (quantities from the most recent year). B used the Laspeyres formula (quantities from the initial year). C is Fisher (geometric average of A and B). Which price index is likely to show a higher rate of price inflation on average over many years, in order from highest to lowest?
a) A, B, C b) C,B,A c) A, C, B d) B, C, A e) B, A, C

25) Consider two small open economies. Economy A has had a trade surplus for many years. Economy B has had a trade deficit. Think about GDP versus GNP (or GNI, gross national income) in the two economies. Which is the following is likely to be true?
a) In A, GNP>GDP; in B, GNP<GDP.
b) In A, GNP<GDP; in B, GNP>GDP.
c) In A, GNP>GDP; in B, GNP>GDP.
d) In A, GNP<GDP; in B, GNP<GDP.
e) Any of these possiblities is equally likely.

26) For many years, the government of China enforced a "one child policy" that reduced birth rates. What would be the effect of such a policy in the Solow model of economic growth?
a) Higher y, higher MPK (marginal product of capital).
b) Higher y, lower MPK.
c) Lower y, higher MPK
d) Lower y, lower MPK.
e) None of the above

27) Consider two closed economies, A and B. In A, the government has run a surplus ($T>G$) in most years. In B, the government has run a deficit ($G>T$) in most years. What would you expect to observe to be true for economy A, relative to economy B?
a) Higher y, higher MPK (marginal product of capital).
b) Higher y, lower MPK.
c) Lower y, higher MPK
d) Lower y, lower MPK.
e) None of the above

The following information is for 28) - 29). Consider the long-run equilibrium rate of unemployment in an economy. Like the model we used in class,
U is the number of unemployed people in the economy.
L is the number of people in the labor force (which is fixed, does not grow over time).
E is the number of employed people.
u is the unemployment rate (expressed as a fraction or decimal).
Also like the model we used in class, the number of unemployed people who become employed in a period is fU where f is a fraction less than one. *Unlike* in class, two kinds of people enter the pool of unemployed in a period: formerly employed people who lose their jobs, and young people completing full-time education. The number of employed people becoming unemployed in a period is sE (as in class). The number of young people completing education and entering unemployment in a period is nL (this is growth in the labor force).

28) Suppose I asked you to derive the long-run equilibrium unemployment rate in this economy.What is the first line of math you would write down? Hint: write down the first line in the space below, then choose the answer that matches what you wrote.

a) $fU = sE + nL$
b) $fU = sE$
c) $fU = nL$
d) $fU + nL = sE$
e) None of the above

29) Starting from your answer to 31), derive the long-run unemployment rate u in the space below. What is u?

a) $u = \frac{s}{f+s}$ b) $u = \frac{s+n}{1+f}$ c) $u = \frac{n}{f+s}$ d) $u = \frac{s+n}{f+s}$ e) None of the above

30) Assuming that the Solow model of economic growth is true for all countries, which of the following countries is likely to have the highest output per worker in the long run?

	Savings rate	Depreciation rate	Population growth rate
Country A	15%	10%	3%
Country B	10%	10%	5%
Country C	5%	10%	3%
Country D	5%	12%	3%
Country E	10%	12%	3%

a) Country A. b) Country B. c) Country C. d) Country D. e) Country E.

31) Assume that the Solow model of economic growth is true for all countries. In some of the following economies, an increase in the savings rate will *increase* long-run steady-state consumption per worker. In others, an increase in the savings rate will *decrease* long-run steady-state consumption per worker. In which countries will an increase in the savings rate *increase* long-run steady-state consumption per worker?

	Savings rate	Production function
Country A	12%	$Y = 120K^{1/10}L^{9/10}$
Country B	12%	$Y = 75K^{1/4}L^{3/4}$
Country C	20%	$Y = 200K^{1/2}L^{1/2}$
Country D	20%	$Y = 45K^{1/4}L^{3/4}$

a) A b) A,B c) A,B,C d) A,B,D e) B,C,D

32) Consider the immediate effect on consumption per person c of an increase in the savings rate s in the Solow model, versus the effect that will prevail in the very long run. Which of the following is true?
a) May or may not reduce c immediately; may or may not reduce c in long run
b) Increases c immediately and in the very long run
c) Decreases c immediately and in the very long run
d) May or may not decrease c immediately, increases c in the very long run
e) none of the above

33) Think about the graph we use to describe the Solow model of economic growth. Why is the $f(k)$ line "concave" (bowed down) rather than straight or "convex" (bowed up)? Because of:
a) constant returns to scale
b) diminishing marginal product of capital
c) diminishing marginal product of labor
d) a constant savings rate
e) none of the above

The following information is for 34)-36). Consider an economy described by the Solow model of economic growth.
The per-worker production function is $y = Ak^{1/2}$
The savings rate is 15 percent.
The depreciation rate is 10 percent.
The rate of population growth is 2 percent.

34) What is the "marginal product of capital" in this economy? Hint: do the math to find it in the space below, then find the correct answer among the choices.

a) $\frac{1}{2}k^{1/2}$ b) $-\frac{1}{2}k^{1/2}$ c) $\frac{1}{2}Ak^{1/2}$ d) $-\frac{1}{2}Ak^{1/2}$ e) None of the above

35) Suppose that I asked you to find the "golden rule" value of k for this economy. What is the first line of math you would write down? Hint: write down the first line in the space below, then choose the answer that matches what you wrote.

a) $.15Ak^{1/2} = .10k$
b) $.15Ak^{1/2} = (.10+.02)k$
c) $.15 * A\frac{1}{2}k^{-1/2} = .10+.02$
d) $A\frac{1}{2}k^{-1/2} = .10+.02$
e) None of the above

36) Suppose that I asked you to find the long-run steady state (long-run equilibrium) value of k for this economy. What is the first line of math you would write down? Hint: write down the first line in the space below, then choose the answer that matches what you wrote.

a) $.15Ak^{1/2} = .10k$
b) $.15Ak^{1/2} = (.10+.02)k$
c) $.15 * A\frac{1}{2}k^{-1/2} = .10+.02$
d) $A\frac{1}{2}k^{-1/2} = .10+.02$
e) None of the above

This information is for 37- 40). Consider an *open* economy economy where:

$Y = C + I + G + NX$

$C = a + b(Y - T)$

$I = c - dr$

$G = \overline{G}$

$T = \overline{T}$

$NX = n - j\epsilon$

In the last equation, n is a constant, j is a coefficient and ϵ is a variable: it is the real exchange rate.

From these equations, derive an equation that gives real GDP Y as a function of r, ϵ and any other relevant variables. That is, get an equation with Y alone on the left-hand side and no Y on the right-hand side. Do this in the space below. Then answer the questions.

37) Suppose the real exchange rate ϵ increases by 3 units (e.g. from 11 to 14) while the real interest rate r, $\overline{G}$ and $\overline{T}$ all remain the same. What is the resulting change in Y? The change in Y is equal to:

a) -3 b) $-j*3$ c) $-\frac{1}{1-b}*3$ d) $-\frac{j}{1-b}*3$ e) None of the above

38) Suppose the real interest rate r increases by 3 units (e.g. from 11 to 14) while the real exchange rate ϵ, $\overline{G}$ and $\overline{T}$ all remain the same. What is the resulting change in Y? The change in Y is equal to:

a) -3 b) $-j*3$ c) $-\frac{1}{1-b}*3$ d) $-\frac{j}{1-b}*3$ e) None of the above

39) Suppose $\overline{G}$ increases by 3 units (e.g. from 150 to 153) while the real interest rate r, the real exchange rate ϵ and $\overline{T}$ all remain the same. What is the resulting change in Y? The change in Y is equal to:

a) 3 b) $j*3$ c) $\frac{1}{1-b}*3$ d) $\frac{j}{1-b}*3$ e) None of the above

40) Suppose $\overline{G}$ and $\overline{T}$ *both simultaneously* increase by 3 units (e.g. $\overline{G}$ increases from 150 to 153 while $\overline{T}$ increases from 100 to 103 units), while the real interest rate r and the real exchange rate ϵ remain the same. What is the resulting change in Y? The change in Y is equal to:

a) 3 b) $j*3$ c) $\frac{1}{1-b}*3$ d) $\frac{j}{1-b}*3$ e) None of the above

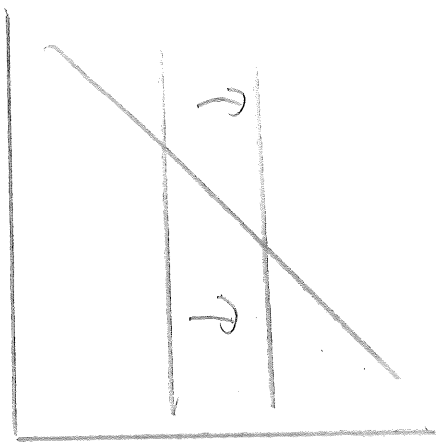
41) What are the three functions of money? Pick them out from the following list, write down the Roman numerals, then choose your answer below.

I) Real interest rate
II) Store of value
III) Unit of account
IV) Nominal interest rate
V) Reserve requirement
VI) Sacrifice ratio
VII) Medium of exchange

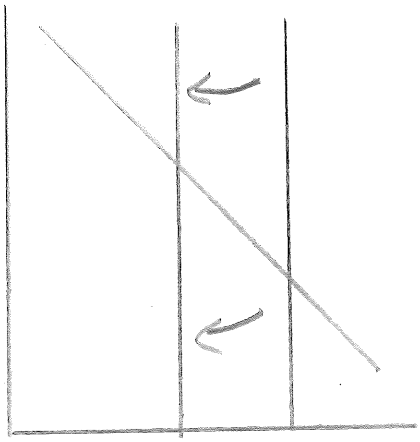
a) I, II, III b) II, III, IV c) II, IV, VI d) II, IV, VI e) None of the above

The following is for 42) - 46). Look at the four graphs below. They are graphs of supply and demand for *real money balances*. I will ask you to tell me which graph corresponds to a particular event. More than one event may correspond to a given graph. Also, an event may correspond to none of the graphs.

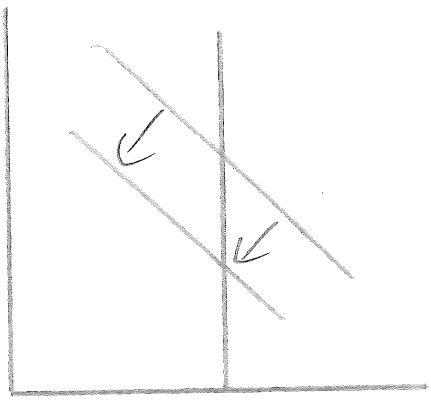
a)



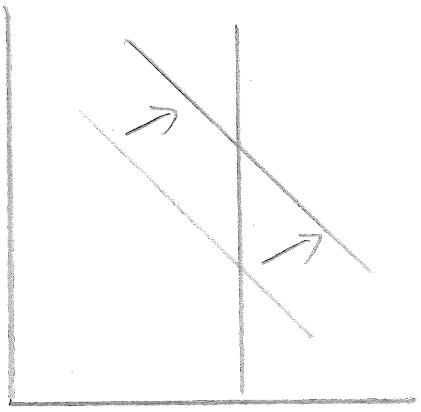
b)



c)



d)



42) Increase in M^S (no change in P). a) b) c) d) e) None of the above

43) Increase in P (no change in M^S). a) b) c) d) e) None of the above

44) M^S doubles while P also doubles. a) b) c) d) e) None of the above

45) Increase in Y. a) b) c) d) e) None of the above

46) People start holding more cash to prepare for natural disasters. a) b) c) d) e) None of the above

The following information is for 47) - 51). Think about a closed economy with an expectations-augmented Phillips curve and an IS curve. The economy's natural rate of interest is 3 percent. Its natural rate of unemployment (or NAIRU) is 6 percent. There are no "supply shocks."

47) Suppose expected inflation is 2 percent, and realized inflation this year is 1 percent. What do you know about the unemployment rate this year?
a) It must be equal to 6 percent.
b) It must be less than 6 percent.
c) It must be greater than 6 percent.
d) That information does not imply anything about the unemployment rate.
e) None of the above.

48) Suppose expected inflation is 2 percent, and realized inflation this year is 3 percent. What do you know about real GDP this year?
a) It is equal to potential GDP (the natural rate of output)
b) It is greater than potential GDP (the natural rate of output)
c) It is less than potential GDP (the natural rate of output)
d) That information does not imply anything about real GDP
e) None of the above.

49) Suppose expected inflation is 2 percent, and realized inflation this year is 3 percent. What do you know about the real interest rate this year?
a) It is equal to 3 percent
b) It is greater than 3 percent
c) It is less than 3 percent
d) That information does not imply anything about the real interest rate.
e) None of the above.

50) Suppose expectations are "anchored:" no matter what inflation was last year, people's expected value for future inflation is *four* percent. Under which of the following circumstances might this year's realized inflation π turn out to be equal to *five* percent?
a) Output is equal to the natural rate of output.
b) The real interest rate r is greater than 3 percent.
c) The real interest rate r is less than 3 percent.
d) The real interest rate r is equal to 3 percent.
e) None of the above

51) Suppose expectations are "adaptive" and last year's rate of inflation was *four* percent. Under which of the following circumstances might this year's realized inflation π turn out to be equal to *five* percent?
a) Output is equal to the natural rate of output.
b) The real interest rate r is greater than 3 percent.
c) The real interest rate r is less than 3 percent.
d) The real interest rate r is equal to 3 percent.
e) None of the above

The following information is for 52)-57). Consider an economy in which the central bank chooses an interest rate and adjusts the money supply as needed to keep the interest rate at that chosen value. The central bank always tries to keep inflation exactly equal to a target inflation rate of 2 percent. The natural rate of unemployment (NAIRU) $\overline{u}$ (or u^n) is 6 percent. The central bank always knows the true value of potential output $\overline{Y}$. There are no "supply shocks." Think about the value that the central bank will choose for *r* in each situation below. Given that choice for *r*, what will happen in the economy?

52) The public's expected value for future inflation is 2 percent. Government purchases, taxes net of transfers and other determinants of spending all turn out to be as the central bank expected when it set the interest rate. Results for *u* and π :
a) u = 6 percent, inflation = 2 percent
b) u< 6 percent, inflation > 2 percent.
c) u > 6 percent, inflation < 2 percent.
d) u = 6 percent, inflation > 2 percent.
e) u = 6 percent, inflation < 2 percent.

53) The public's expected value for future inflation is 1 percent. Government purchases, taxes net of transfers and other determinants of spending all turn out to be as the central bank expected when it set the interest rate. Results for *u* and π :
a) u = 6 percent, inflation = 1 percent
b) u< 6 percent, inflation > 1 percent.
c) u > 6 percent, inflation < 1 percent.
d) u = 6 percent, inflation > 1 percent.
e) None of the above.

54) The public's expected value for future inflation is 3 percent. Government purchases, taxes net of transfers and other determinants of spending all turn out to be as the central bank expected when it set the interest rate. Results for *u* and π :
a) u = 6 percent, inflation = 3 percent
b) u< 6 percent, inflation > 3 percent.
c) u > 6 percent, inflation < 3 percent.
d) u = 6 percent, inflation > 3 percent.
e) None of the above.

55) The public's expected value for future inflation is 2 percent. Government purchases turn out to be *more* than the central bank expected when it set the interest rate. Results for *u* and π :
a) u = 6 percent, inflation = 2 percent
b) u< 6 percent, inflation > 2 percent.
c) u > 6 percent, inflation < 2 percent.
d) u = 6 percent, inflation > 2 percent.
e) None of the above.

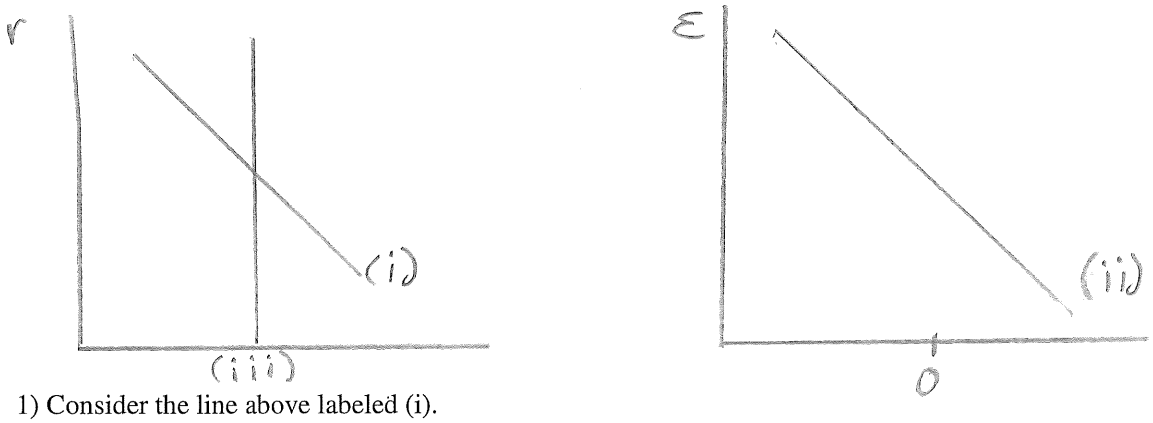
56) Suppose that the public's expectations are "anchored" at 2 percent. *Last* year government purchases turned out to be more than the central bank expected when it set the interest rate. Given what the central bank will do *this* year, what is likely to be true in the economy *this* year?
a) u = 6 percent, inflation = 2 percent
b) u< 6 percent, inflation > 2 percent.
c) u > 6 percent, inflation < 2 percent.
d) u > 6 percent, inflation = 2 percent.
e) None of the above.

57) Now suppose that in this economy the public's expectations are "adaptive." *Last* year government purchases turned out to be more than the central bank expected when it set the interest rate. Given what the central bank will do *this* year, what is likely to be true in the economy *this* year?
a) u = 6 percent, inflation = 2 percent
b) u< 6 percent, inflation > 2 percent.
c) u > 6 percent, inflation < 2 percent.
d) u > 6 percent, inflation = 2 percent.
e) None of the above.

Written questions. All the written questions are about the country of Mercia, which is a small open economy.

Suppose that in Mercia the investment function is $I = 3 - \frac{1}{3}r$, the consumption function is $C = 7 + \frac{3}{4}(Y - T)$, exports are given by a function $X = 14 - \frac{1}{4}\epsilon$, and imports are given by a function $IM = 10 + \frac{1}{4}\epsilon$.

Suppose you describe Mercia using the two graphs below:



1) Consider the line above labeled (i).

a) 1 pt.What is the slope of this line? _____.

b) 1 pt. What is the vertical-axis intercept of this line? _____.

2) Consider the line above labeled (ii).

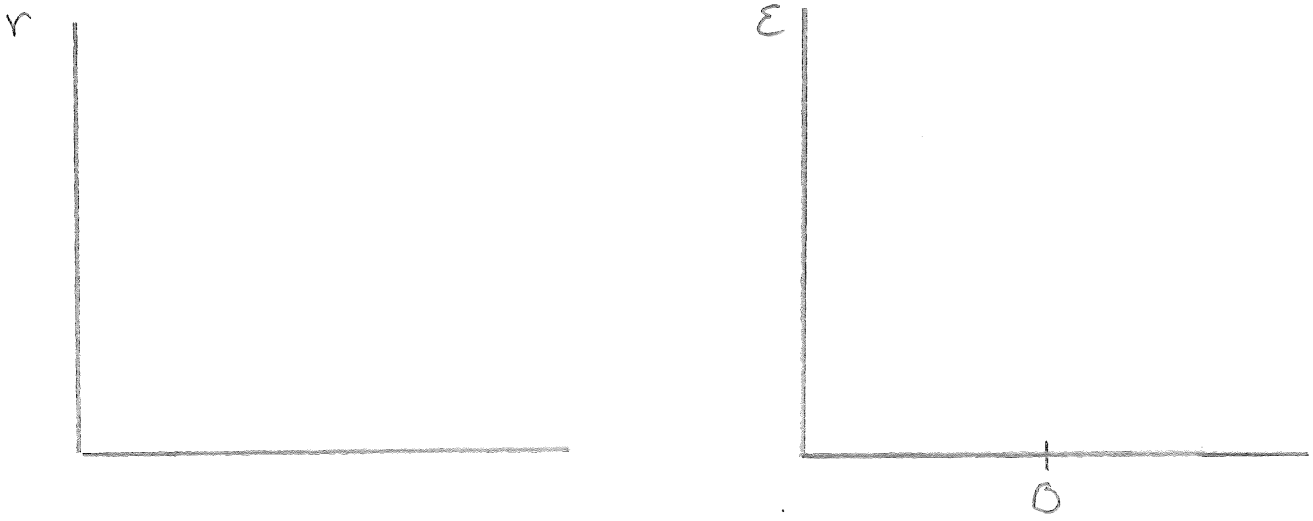
a) 1 pt. What is the slope of this line? _____.

b) 1 pt. What is the vertical-axis intercept of this line? _____.

3) 2 pts. Consider the line above labeled (iii). What happens to this line if *G* and *T* both increase by exactly 8 units, so that there is no change in the government budget deficit *(G-T)*? Be exact. That is, if you say the line shifts left, say exactly how much it shifts left; if you say it shifts right, say exactly how much. Of course, if you say it doesn't shift, that is all you need to say.

The line does this: _____

3) 8 pts. Suppose that Mercia has had a trade deficit for many years. The king of Mercia doesn't like this. He imposes tariffs on Mercian imports, that is special taxes paid by people importing foreign-produced goods into Mercia.
On the graphs below, show the situation in Mercia "before" the tariffs (remember there is a trade deficit), and after. Mark any variables that change with subscripts, a "1" for "before" and a "2" for "after." Assume that the imposition of imports was accompanied by a reduction in other taxes so that there was no change in Mercian taxes-net-of-transfer *T*.
As a result of the tariff,
- what happens to Mercia's net exports NX? _____ (increase, decrease, no change)
- what happens to Mercia's exports X? _____ (increase, decrease, no change)



4) 8 pts. Again suppose that Mercia has had a trade deficit for many years. The king of Mercia doesn't like this. But instead of imposing tariffs, the king raises Mercian income taxes, without changing government purchases of goods and services. On the graphs below, show the situation in Mercia "before" the increase in taxes (remember there is a trade deficit), and after. Mark any variables that change with subscripts, a "1" for "before" and a "2" for "after." As a result of the tax increase,
- what happens to Mercia's net exports NX? _____ (increase, decrease, no change)
- what happens to Mercia's exports X? _____ (increase, decrease, no change)