ECON 010 - Principles of Macroeconomics
Drake University, Spring 2026
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Signature: ______________________________

Printed name: ______________________________

EXAMINATION 4 VERSION B
"Short-Run Business Cycles"
April 30, 2026

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 pts each, 22 pts total]

(1) Most economists believe that business cycles are usually caused by fluctuations in
a. aggregate demand.
b. the population.
c. aggregate supply (that is, potential GDP).
d. the labor force.
e. the capital stock.

(2) When the unemployment rate is less than the natural rate of unemployment,[1] GDP is usually
a. less than potential GDP.
b. equal to potential GDP.
c. more than potential GDP.
d. equal to the unemployment rate.

(3) Which is said to have "momentum" in the short run?
a. the money supply.
b. the interest rate.
c. GDP.
d. the rate of unemployment.
e. the rate of inflation.

(4) The slope of Keynes's consumption function is called the
a. savings rate.
b. participation rate.
c. marginal propensity to consume.
d. multiplier.

(5) Keynes argued that in a recession, the government should
a. make no changes to spending or taxes so as to stabilize the economy.
b. cut spending.
c. increase spending.
d. raise taxes to eliminate any government deficits.

(6) According to Keynes, an increase in government purchases causes a further increase in
a. the money supply.
b. the inflation rate.
c. consumption.
d. investment.
e. net exports.

(7) The "paradox of thrift" in Keynes's model is that if consumers suddenly begin saving more, then in the short run,
a. consumption spending will rise.
b. imports will rise.
c. the money supply will decrease.
d. GDP will fall.

(8) According to Keynes's model, the smaller the marginal propensity to consume,
a. the bigger the government-purchases multiplier.
b. the smaller the government-purchases multiplier.
c. The marginal propensity to consume is unrelated to the multiplier.

[1] Also called the "noncyclical rate of unemployment."

(9) The "permanent income hypothesis" implies that a permanent tax cut is ______________ a temporary tax cut for increasing consumption spending.
a. more effective than.
b. less effective than.
c. just as effective as.
d. Cannot be determined from information given.

(10) A decrease in U.S. GDP will tend to decrease Japan's
a. investment.
b. government purchases.
c. imports.
d. exports.

(11) Suppose the interest rate in the U.S. increases but interest rates in the rest of the world remain unchanged. Then the exchange rate (the price of a dollar in terms of foreign currency) will
a. decrease.
b. increase.
c. remain unchanged.
d. cannot be determined from information given.

(12) The spending category most sensitive to the interest rate is
a. consumption of nondurables.
b. government purchases.
c. residential investment.
d. consumption of services.

(13) If the dollar depreciates against other currencies, then foreigners will
a. find U.S. exports cheaper and buy more of them.
b. find U.S. exports more expensive and buy less of them.
c. neither of the above.

(14) Under a monetary policy rule typical of most countries, if inflation rises, the central bank will
a. raise taxes.
b. reduce government spending.
c. increase the real interest rate.
d. increase the money supply.

(15) According to the standard model of economic fluctuations, the inflation rate eventually rises if
a. actual GDP is greater than potential GDP.
b. the actual unemployment rate is greater than the natural rate of unemployment.[2]
c. exports exceed imports.
d. population growth exceeds output growth.
e. taxes exceed government spending.

(16) Suppose GDP initially equals potential GDP. Then taxes are increased sharply. What happens *first*, according to the standard model of economic fluctuations?
a. the inflation rate decreases.
b. the interest rate decreases.
c. GDP decreases.
d. the unemployment rate decreases.
e. exports decrease.

(17) According to the standard model, a recession caused by tightened monetary policy eventually results in
a. lower inflation.
b. higher inflation.
c. the same inflation rate as before.

(18) If the central bank first relaxes monetary policy and then tightens it, the economy will experience
a. a tax cut.
b. an increase in the long-run rate of economic growth.
c. a complete boom-bust cycle.
d. a price shock.

(19) A "price shock" is a rise in inflation
a. that is deliberately intended to get the economy moving again.
b. that is invisible to consumers.
c. that voters disapprove of.
d. that is unrelated to the output gap.

(20) "Countercyclical fiscal policy" means
a. increasing spending and decreasing taxes in recessions and the opposite in booms.
b. decreasing spending and increasing taxes in recessions and the opposite in booms.
c. taking actions that move the economy in a counterclockwise circle.
d. policy that discourages the use of motorcycles.

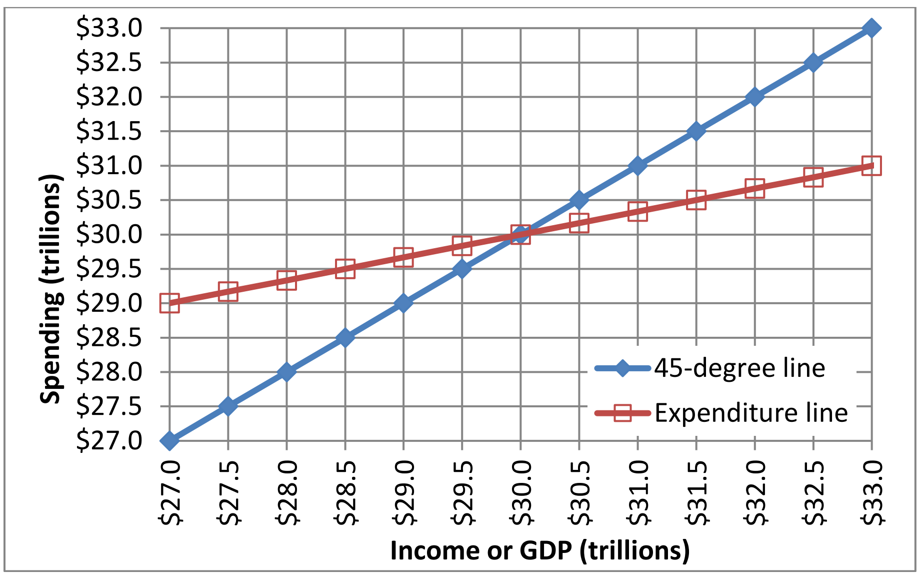
[2] Also called the "noncyclical rate of unemployment."

(21) "Quantitative easing" means
a. gradual implementation of fiscal policy so as not to disturb markets.
b. lowering interest rates.
c. adjusting numbers to fit the problem at hand.
d. massive purchases of bonds by the central bank.

(22) Some people thought that the rise in inflation in 2022 was caused by fiscal policy, responding to the COVID recession, that was too strong. However, it now seems more likely that the rise in inflation was caused by
a. tightened government budgets.
b. a collapse of international trade.
c. quantitative easing at the Fed.
d. a temporary price shock to global supply chains.

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) [Keynesian cross, Keynesian multipliers: 12 pts] The following is a Keynesian cross diagram, including a 45-degree line and an expenditure line.



a. What is the current level of real GDP—that is, the point of "spending balance"? | $ trillion |

Suppose government purchases for defense spending *increase* by **$ 1 trillion**.

b. Does the expenditure line shift *up or down* in the short run? | |

c. By how much (measured vertically)? | $ trillion |

d. Does GDP *increase or decrease* in the short run? | |

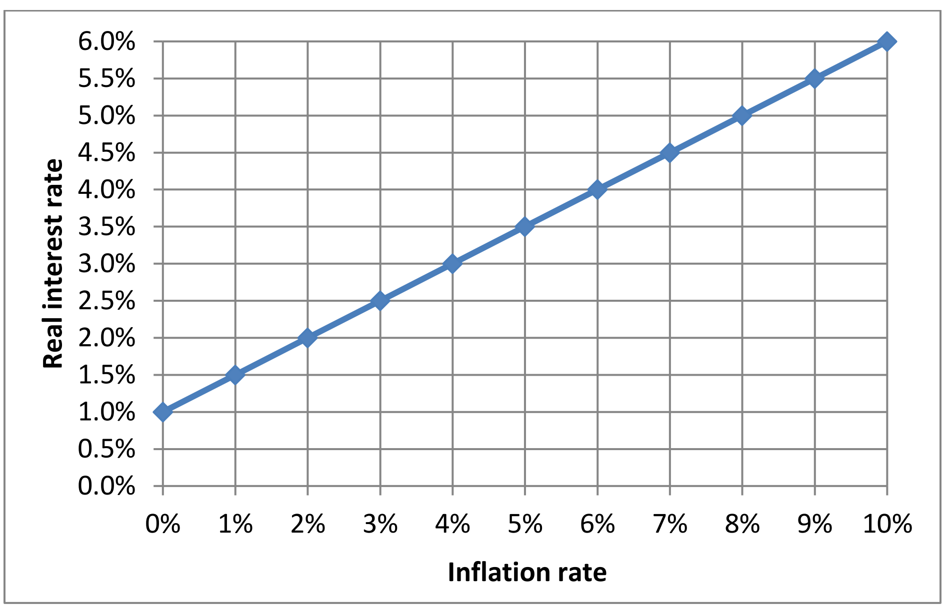
e. By how much? | $ trillion |

f. Compute the government-purchases multiplier from your previous answers to this problem. | |

(2) [Consumption function, Keynesian cross, Keynesian multipliers: 16 pts] Suppose the marginal propensity to consume is 0.8 and the marginal propensity to import is 0.05 . Assume no other spending components of GDP are affected by aggregate income.

a. Compute the slope of the consumption function.	
b. Compute the slope of the expenditure line in the Keynesian cross diagram.	
c. Compute the government-purchases multiplier.	
d. By how much does GDP increase in the short run if government purchases (G) increase by $ 300 billion?	$ billion
e. How much of an increase in government purchases is required to raise GDP by $ 300 billion?	$ billion
f. Compute the tax-cut multiplier.	
g. How much of a tax cut is required to raise GDP by $ 300 billion?	$ billion
h. Suppose taxes and government purchases are to be increased simultaneously by exactly the same amount. What amount is required to raise GDP by $ 300 billion?	$ billion

(3) [Monetary policy rule: 10 pts] Suppose the central bank follows the monetary policy rule depicted below.



Assume GDP equals potential GDP and suppose the inflation rate is now **5 %**.

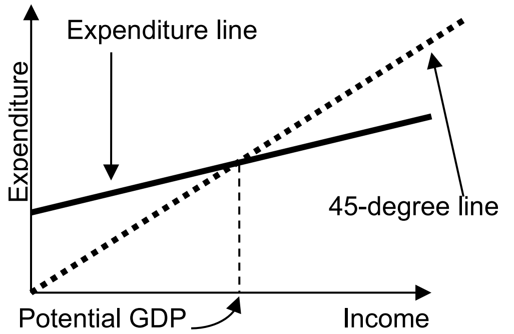
a. What level of the *real* interest rate will the central bank set?	%
b. What level of the *nominal* interest rate does this imply?	%
c. Suppose monetary policy is "relaxed." Does that mean that the policy rule curve shifts *up*, shifts *down*, or remains *unchanged*?	
d. In the *short run*, will GDP *increase, decrease*, or remain *unchanged*?	
e. In the *short run*, will the inflation rate *increase, decrease*, or remain *unchanged*?	

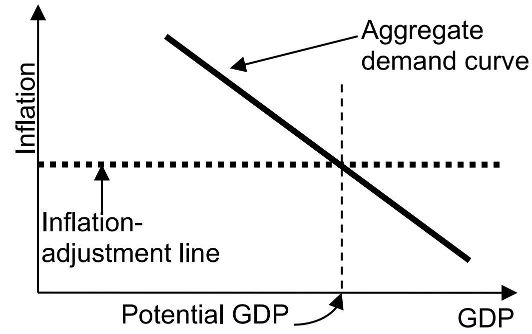
(4) [How business cycles begin: 20 pts] Assume GDP initially equals potential GDP and consider the *short-run* consequences of each scenario in the left column. Indicate whether and how the scenario shifts the expenditure line in the Keynesian cross diagram. Then indicate whether and how it shifts the "aggregate demand" (AD) curve in the diagram used in Taylor and Weerapana's textbook in the *short run*. Indicate whether the scenario is likely to cause a recession, a boom or neither (assuming GDP was initially equal to potential GDP).

	Expenditure line shifts *up, down* or *unchanged?*	AD curve shifts *left, right,* or *unchanged?*	Causes *recession, boom,* or *neither?*
a. Consumers become worried about the future and reduce their spending.			
b. Taxes are increased to reduce the budget deficit.			
c. New leadership at the Federal Reserve decides to "relax" monetary policy.			
d. Government purchases are decreased.			

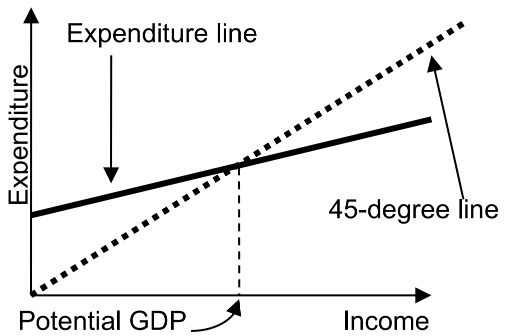
For each of these four scenarios, draw the shifts in curves on the next page.

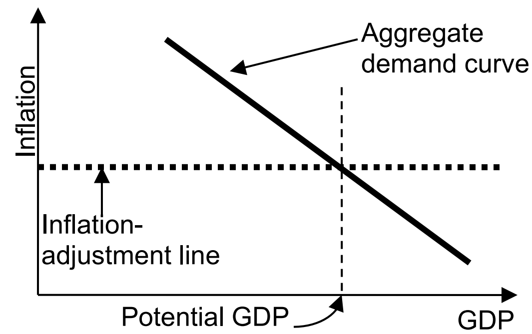
a. Consumers become worried about the future and reduce their spending.



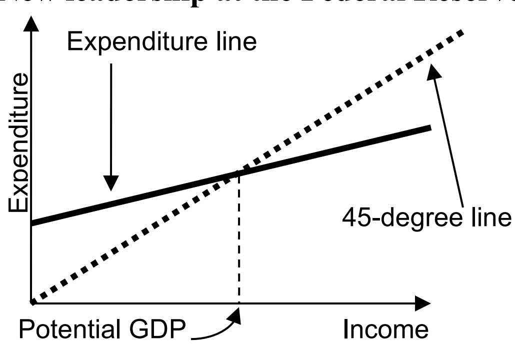


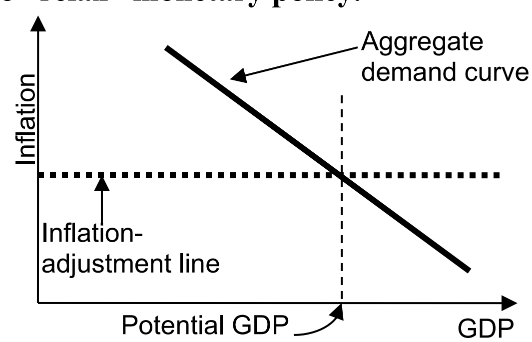
b. Taxes are increased to reduce the budget deficit.



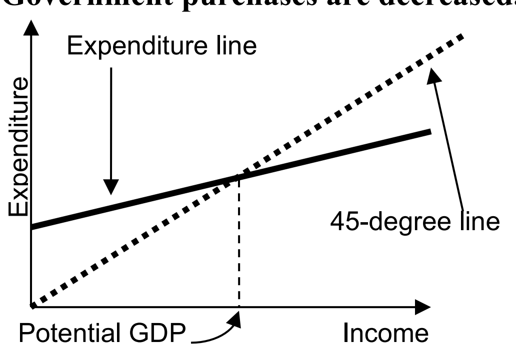


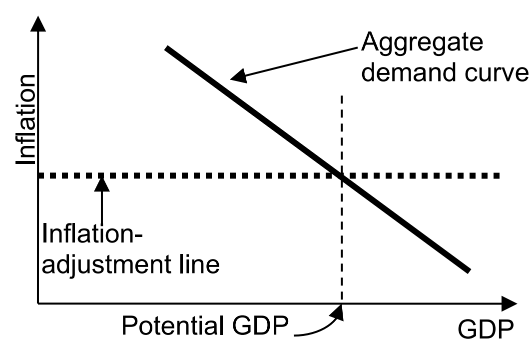
c. New leadership at the Federal Reserve decides to "relax" monetary policy.



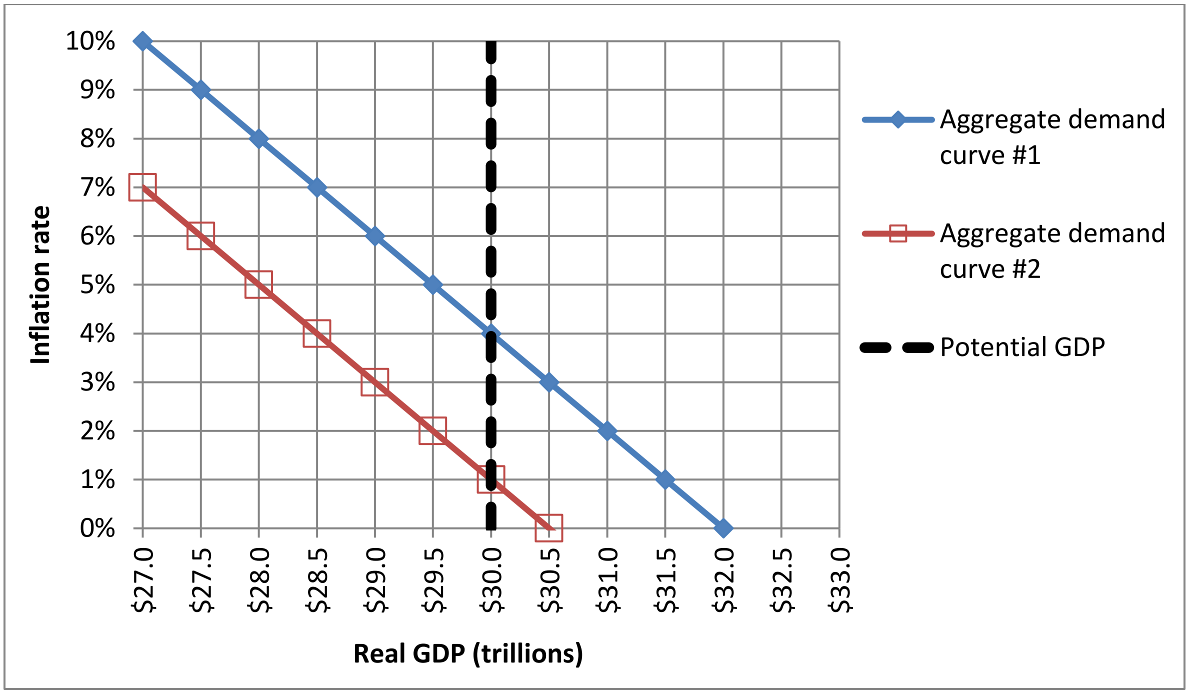


d. Government purchases are decreased.





(5) [Inflation adjustment: 16 pts] Consider the following graph of the macroeconomy, similar to those in the textbook by Taylor and Weerapana. Suppose that the aggregate demand curve is currently at "aggregate demand curve #1" and the inflation rate is currently **4%. [**Hint: Begin by drawing the "inflation adjustment" line.]



a. What is the current level of real GDP?	$ trillion
b. Is the unemployment rate currently *greater* than the natural rate, *less* than the natural rate, or *equal* to the natural rate of unemployment[3]?	

Now suppose the government passes a large tax increase and the aggregate demand curve shifts to "aggregate demand curve #2."

c. What is the level of real GDP in the short run?	$ trillion
d. What is the inflation rate in the short run?	%
e. Is the unemployment rate *greater* than the natural rate, *less* than the natural rate, or *equal* to the natural rate of unemployment in the short run?	
f. What will be the level of real GDP in the long run?	$ trillion
g. What will be the inflation rate in the long run?	%
h. Is the unemployment rate *greater* than the natural rate, *less* than the natural rate, or *equal* to the natural rate of unemployment in the long run?	

[3] Also called the "noncyclical rate of unemployment."

III. Critical thinking: Write a one-paragraph essay answering *one* question below (your choice). [4 pts]

(1) Consider the following statement. "Everyone deserves a chance to work. The goal of the Federal Reserve should be to reduce unemployment to zero." Do you agree or disagree? Why?

(2) Suppose the U.S. Constitution were amended to require that the federal budget be balanced every year. Would this make it *easier* or *more difficult* to prevent recessions and booms? Why?

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]