

3. Assume that in the country of Zeta, the civilian noninstitutional population aged 16 and over is 1,000,000. The labor force participation rate is 70%, the unemployment rate is 9%, and the natural rate of unemployment is 5%.

(a) Calculate the number of people in Zeta that are unemployed. Show your work.

(b) Is the economy of Zeta currently experiencing a recessionary gap, an inflationary gap, or no output gap? Explain.

(c) Consumer goods and capital goods are produced in the country of Zeta. Draw a correctly labeled graph of the production possibilities curve for Zeta. Indicate a point, labeled A, that represents the current state of Zeta's economy.

(d) If some individuals who are counted as unemployed in Zeta stop looking for work, what will happen to each of the following?

- (i) The labor force participation rate. Explain.
- (ii) The unemployment rate

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

STOP

END OF EXAM

2. The table below shows macroeconomic data for Country A.

Year	Nominal GDP	GDP Deflator	Population
2020	40,000	100	100
2021	88,000	200	110

(a) Calculate each of the following for Country A in year 2021. Show your work.

- (i) Real GDP
- (ii) Real GDP per capita

(b) Based solely on the data provided, has the standard of living for the average person in Country A increased, decreased, or stayed the same between 2020 and 2021 ? Explain.

(c) How would an increase in government spending on education affect economic growth in Country A? Explain.

(d) Assume that Country A produces consumer goods and capital goods. Draw a correctly labeled production possibilities curve for Country A, and show the effect of the increase in government spending on education on your graph.

Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

2. The European Union and the United States are trading partners.
- If the current account balance is zero, will an increase in United States real income result in a current account surplus, deficit, or no change? Explain.
 - Draw a correctly labeled graph of the foreign exchange market for the euro. On your graph, show the effect of the increase in United States real income on the value of the euro relative to the United States dollar.
 - Now assume interest rates increase in the European Union.
 - What is the effect of the increase in interest rates in the European Union on the demand for the United States dollar? Explain.
 - Based on your answer to part (c)(i), what is the effect on the value of the United States dollar relative to the euro?

3. Sweden and Norway use equal quantities of resources to produce food and capital goods. The table below shows the maximum possible production of food OR capital goods for each country.

Country	Food	Capital Goods
Sweden	50	100
Norway	30	120

- Draw a correctly labeled graph of the production possibilities curve for Sweden. Place food on the horizontal axis and capital goods on the vertical axis. Plot the relevant numerical values on the graph.
- On your graph in part (a), indicate the following.
 - A point that represents an efficient level of production, labeled E
 - A point that represents an inefficient level of production, labeled I
 - A point that represents an unattainable level of production, labeled U
- Assume Sweden moves from producing 20 units of food and 60 units of capital goods to producing 30 units of food and 40 units of capital goods. What will happen to economic growth in Sweden in the future?
- Which country has the comparative advantage in the production of capital goods? Explain.
- Based on the table above, identify a specific number of units of capital goods that could be traded for 10 units of food and be mutually beneficial.

STOP

END OF EXAM

2. Assume the economy of Ucheland is currently at full employment. The government of Ucheland reduces the tax rate on household interest earnings.
- What will happen to private savings in Ucheland?
 - Draw a correctly labeled graph of the loanable funds market, and show the effect of the change in private savings identified in part (a) on the equilibrium real interest rate.
 - Given the real interest rate change identified in part (b), answer the following questions.
 - What is the short-run effect on aggregate demand? Explain.
 - What is the long-run effect on potential real gross domestic product in Ucheland? Explain.

3. Countries face trade-offs between producing consumer goods and producing capital goods.

- Country X takes one hour to produce a unit of consumer goods and two hours to produce a unit of capital goods. Country Y takes two hours to produce a unit of consumer goods and four hours to produce a unit of capital goods. Which country has a comparative advantage in the production of consumer goods? Explain.

The following table shows labor-market data for Country X.

Employed	180,000
Frictionally unemployed	10,000
Structurally unemployed	5,000
Cyclically unemployed	5,000
Not in the labor force	100,000

- Calculate the unemployment rate in Country X. Show your work.
- Calculate the labor force participation rate in Country X. Show your work.
- Draw a correctly labeled graph of the production possibilities curve for Country X, with consumer goods on the horizontal axis and capital goods on the vertical axis. Indicate a point on your graph, labeled Z, that reflects the current level of unemployment.

STOP

END OF EXAM

2. Assume that an economy is in long-run equilibrium. Assume that consumers wish to hold less money because they use credit cards more frequently to purchase goods and services than cash.
- (a) Draw a correctly labeled graph of the money market and show the effect of the reduced holdings of money on the equilibrium nominal interest rate in the short run.
- (b) Based on the change in the interest rate in part (a), what will happen to each of the following in the short run?
- (i) Prices of previously issued bonds
- (ii) The price level and real income. Explain.
- (c) With a constant money supply, based on your answer to part b(ii), will the velocity of money increase, decrease, or remain the same, or is the change indeterminate?
- (d) If the central bank wishes to reverse the change in the interest rate identified in part (a), what open market operation would it use?

3. A country is at full employment and produces two types of goods: consumer goods and capital goods.
- (a) Draw a correctly labeled graph of the production possibilities curve, with consumer goods on the horizontal axis and capital goods on the vertical axis. Indicate a point on your graph, labeled X, that represents full employment and a possible combination in which both goods are being produced.
- (b) Assume there is an increase in the country’s national savings. Draw a correctly labeled graph of the loanable funds market, showing the change in the real interest rate from the increase in savings.
- (c) On the same graph from part (a), show another point, labeled Z, that represents full employment and a new combination of consumer goods and capital goods consistent with the increase in the country’s national savings.
- (d) Referring to your answer to part (c), will the long-run aggregate supply curve shift to the right, shift to the left, or remain the same? Explain.

STOP

END OF EXAM

2. The following is the balance sheet of First Superior Bank.

Assets		Liabilities and Equity	
Reserves	\$200	Demand deposits	\$2,000
Loans	\$1,800	Equity (net worth)	\$0

Assume that the required reserve ratio is 10 percent.

- (a) What is the dollar value of new loans that First Superior Bank can make? Explain.
- (b) Mr. Smith deposits \$100 of cash in a demand deposit account in First Superior Bank. Calculate the maximum amount of new loans that First Superior Bank can now make.
- (c) As a result of Mr. Smith’s \$100 cash deposit, calculate the maximum change over time in each of the following in the banking system.
- (i) Loans
- (ii) Demand deposits
- (d) As a result of Mr. Smith’s \$100 cash deposit, calculate the maximum change over time in the money supply.
- (e) Provide one reason why the actual change in money supply can be smaller than the maximum change you identified in part (d).

3. The following table shows the number of donuts or cupcakes that John and Erica can each produce in one day.

	Donuts	Cupcakes
John	200	100
Erica	150	50

- (a) Who has the absolute advantage in producing donuts? Explain.
- (b) Who has the comparative advantage in producing donuts? Explain.
- (c) Assume that John and Erica decide to specialize according to their comparative advantages and that one cupcake is exchanged for four donuts.
- (i) Indicate whether or not specialization and trade are beneficial to John.
- (ii) Indicate whether or not specialization and trade are beneficial to Erica.
- (d) Assume that Erica discovers a new cupcake production technique that will increase her daily production of cupcakes only. Using donuts on the horizontal axis, draw a correctly labeled production possibilities curve for Erica, before and after the technology change in cupcake production.

STOP

END OF EXAM

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2. Country X and Country Y are trading partners, and both produce furnaces and solar panels. The countries can produce the following amounts using equal amounts of resources.

Country X: 6 furnaces or 8 solar panels

Country Y: 6 furnaces or 12 solar panels

- (a) Which country has an absolute advantage in producing solar panels?
- (b) Calculate the opportunity cost of a furnace in Country Y.
- (c) Which country has the comparative advantage in producing furnaces? Explain.
- (d) If the terms of trade were that 2 furnaces are exchanged for 1 solar panel, should Country X produce solar panels domestically or import solar panels from Country Y?