1. Assume the United States economy is in short-run macroeconomic equilibrium at an output level greater than potential output.

(a) Draw a correctly labeled graph of the aggregate demand, short-run aggregate supply, and long-run aggregate supply curves, and show each of the following.

(i) The current equilibrium real output and price level, labeled as Y_1 and PL_1, respectively
(ii) The full-employment output, labeled as Y_F

(b) Assume government spending increases by $100 billion. On your graph in part (a), show the short-run effect of the change in government spending on the equilibrium real output and price level. Label the new equilibrium output as Y_2 and the new equilibrium price level as PL_2.

(c) Assume the marginal propensity to consume is 0.8. As a result of the increase in government spending, what is the numerical value of the maximum change in each of the following in the short run?

(i) Real output
(ii) Household savings

(d) Draw a correctly labeled graph of the money market and show the effect of the change in real output identified in part (c)(i) on the equilibrium nominal interest rate.

(e) Based on the change in the nominal interest rate shown in part (d), what will happen to the prices of previously issued bonds in the short run?

(f) The United States and the European Union are trading partners with flexible exchange rates. The currency in the United States is the dollar, and the currency in the European Union is the euro. Assume the inflation rate in the United States increases relative to the inflation rate in the European Union. As a result of the change in the United States inflation rate, what will happen to each of the following in the foreign exchange market?

(i) The demand for dollars. Explain.
(ii) The international value of the dollar

(g) Suppose the Federal Reserve attempts to keep the value of the dollar constant in the foreign exchange market. Based on the change in the value of the dollar in part (f)(ii), should the Federal Reserve buy or sell each of the following?

(i) The euro
(ii) The dollar

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 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.

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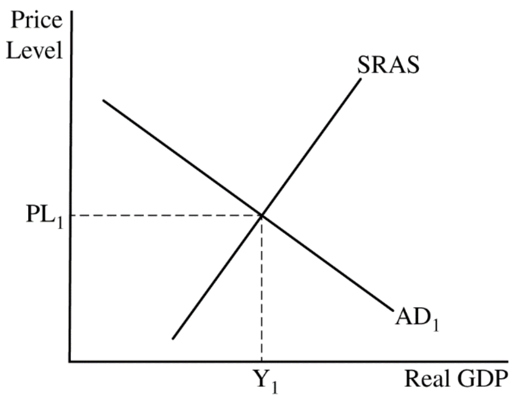
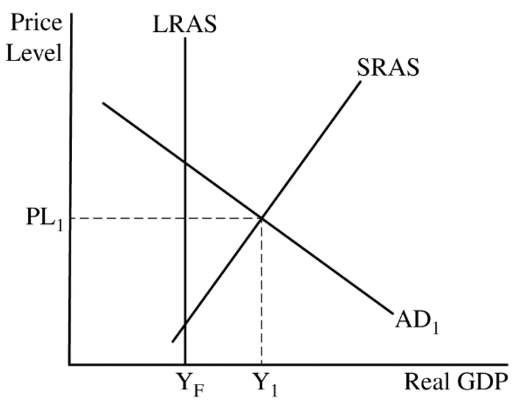
Question 1: Long — 10 points

(a) Draw a correctly labeled aggregate demand-aggregate supply graph that shows PL_1 and Y_1 at the intersection of aggregate demand and short-run aggregate supply. **1 point**

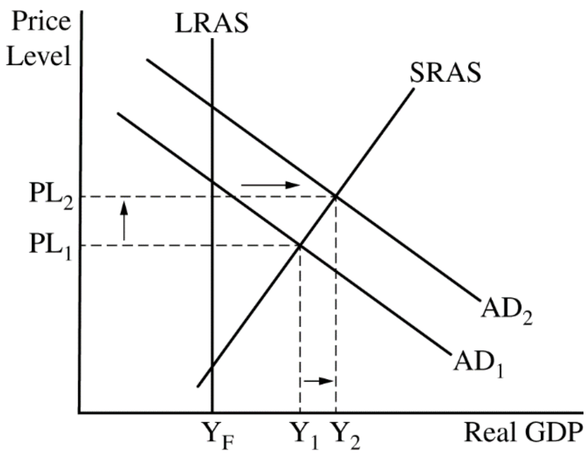


For the second point, the graph must show a vertical long-run aggregate supply curve to the left of Y_1 and label the full-employment output Y_F. **1 point**



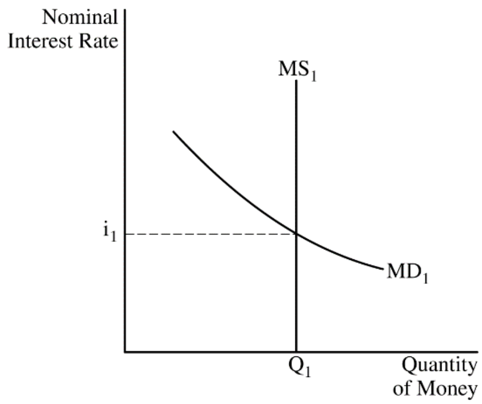
Total for part (a) — 2 points

(b)	On the graph from part (a), show the short-run effect of the increase in government spending as a rightward shift of the aggregate demand curve, resulting in an increase in equilibrium real output and an increase in the equilibrium price level, labeled Y_2 and PL_2 respectively.	**1 point**

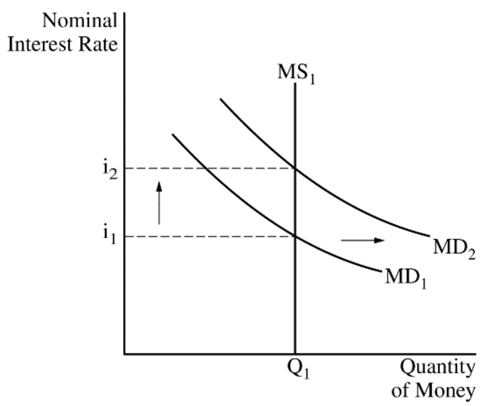


(c)	State that the maximum increase in real output is $500 billion, and the maximum increase in household savings is $100 billion.	**1 point**

(d)	Draw a correctly labeled graph of the money market.	**1 point**



For the second point, the graph must show a rightward shift in the money demand curve, resulting in a higher nominal interest rate. **1 point**



	Total for part (d)	**2 points**
(e)	State that the price of previously issued bonds will decrease.	**1 point**
(f) (i)	State that the demand for dollars will decrease and explain that United States goods are relatively more expensive than European goods as a result of the increase in the inflation rate in the United States.	**1 point**
(ii)	State that the dollar will depreciate.	**1 point**
	Total for part (f)	**2 points**
(g)	State that the Federal Reserve should sell the euro and buy the dollar.	**1 point**
	Total for question 1	**10 points**