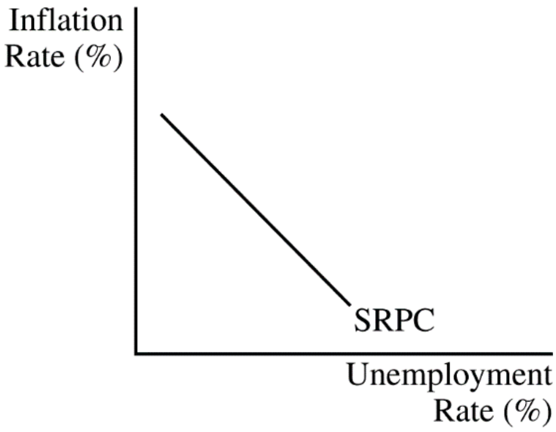
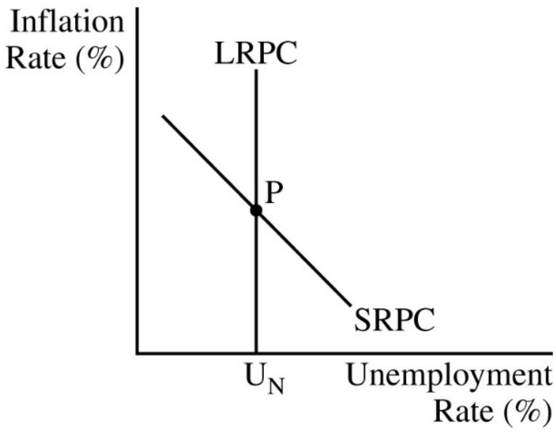
Question 1: Long — 10 points

A Draw a correctly labeled graph of the short-run Phillips curve (SRPC). **1 point**

Point 1



Point 2 The graph must include a correctly labeled long-run Phillips curve (LRPC) and show a point labeled P at the intersection of the short-run and long-run Phillips curves. **1 point**

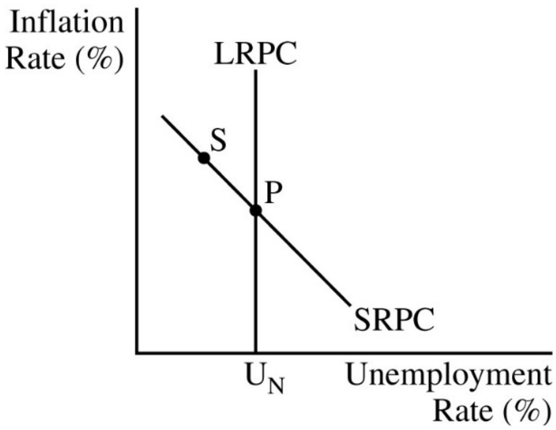


B (i) State that real output will increase and explain that the new residential construction projects increase investment spending, which increases aggregate demand. **1 point**

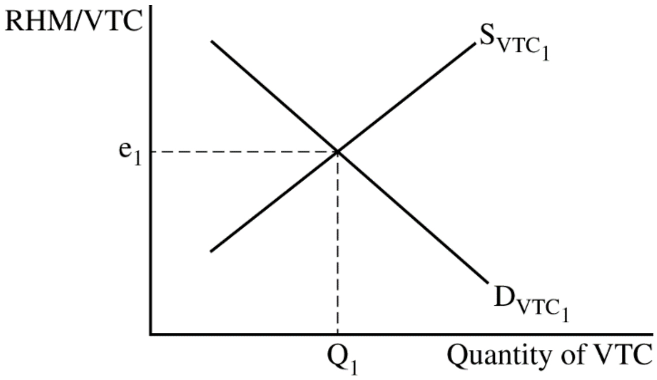
Point 3

(ii) On the graph from part A, show a point labeled S on the SRPC to the left of point P. **1 point**

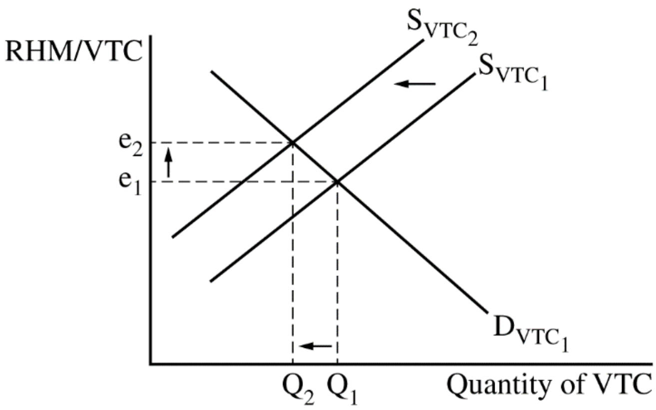
Point 4



C Point 5	Draw a correctly labeled graph of the foreign exchange market for the Vortanian crown.	**1 point**



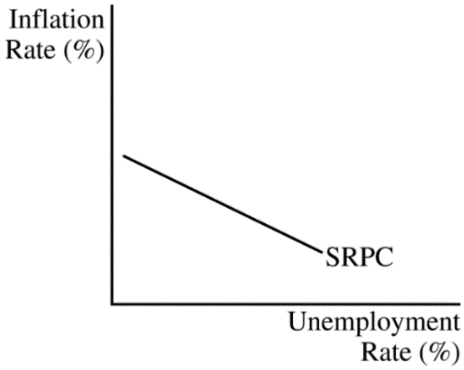
Point 6	The graph must show a leftward shift in the supply curve of the Vortanian crown, resulting in an appreciation of the Vortanian crown.	**1 point**



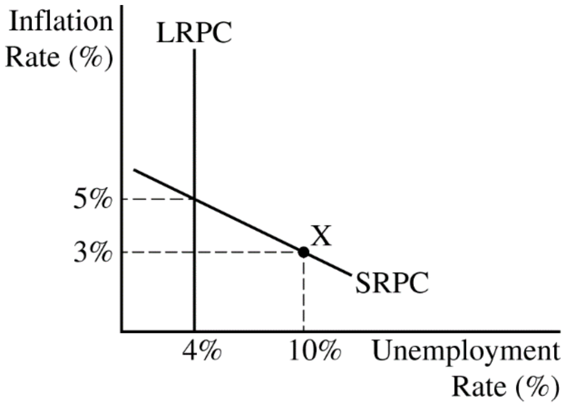
D Point 7	State that Vortania's net exports will decrease.	**1 point**
E **(i)** Point 8	State that the capital and financial account (CFA) balance in Vortania will move into surplus and explain that the current account (CA) moved into deficit and the balance of payments must balance (CA+CFA=0).	**1 point**
(ii) Point 9	State that employment in Vortania will decrease.	**1 point**
F Point 10	State that the central bank of Vortania would sell Vortanian crowns in the foreign exchange market and explain that the increased supply of the Vortanian crown will cause it to depreciate.	**1 point**

Question 1: Long — 10 points

A Point 1	State that the actual unemployment rate is 10%.	**1 point**
B Point 2	Draw a correctly labeled graph of the short-run Phillips curve (SRPC).	**1 point**

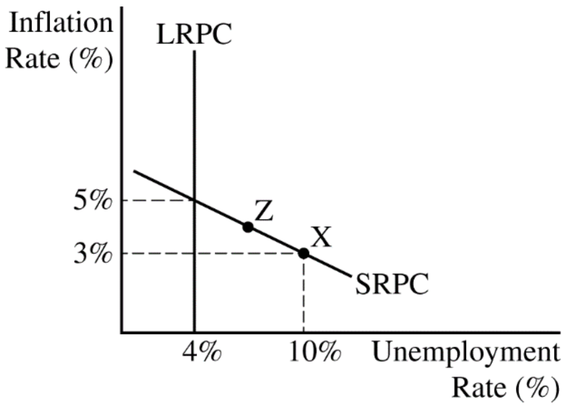


Point 3	The graph must include a vertical long-run Phillips curve (LRPC) at the natural rate of unemployment (4%), the expected inflation rate (5%) at the intersection of the SRPC and the LRPC, and a point labeled X on the SRPC to the right of the LRPC at the actual unemployment rate (10%) and the actual inflation rate (3%).	**1 point**

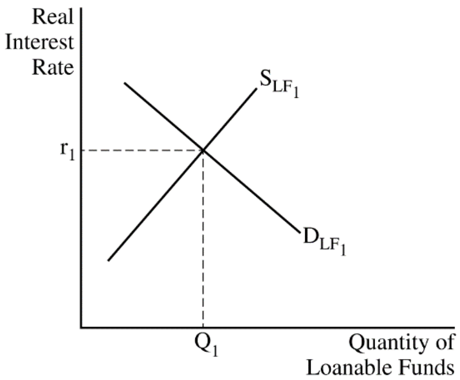


C Point 4	State an increase in government spending, a decrease in taxes, or an increase in transfer payments.	**1 point**

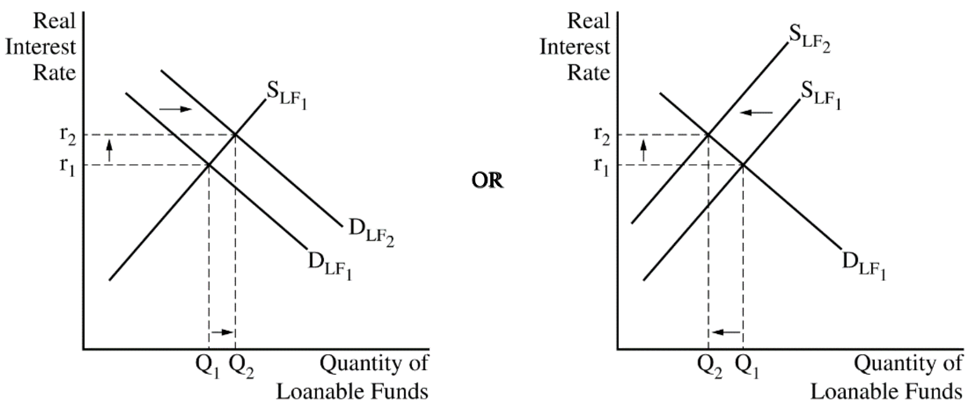
D (i) Point 5	State that the government budget will move into deficit and explain that government outlays exceed revenue.	**1 point**
(ii) Point 6	On the graph from part B, show a point labeled Z on the SRPC to the left of point X.	**1 point**



(iii) Point 7	Draw a correctly labeled graph of the loanable funds market.	**1 point**



Point 8	The graph must show an increase in the demand for loanable funds (or a decrease in the supply of loanable funds), resulting in an increase in the equilibrium real interest rate.	**1 point**

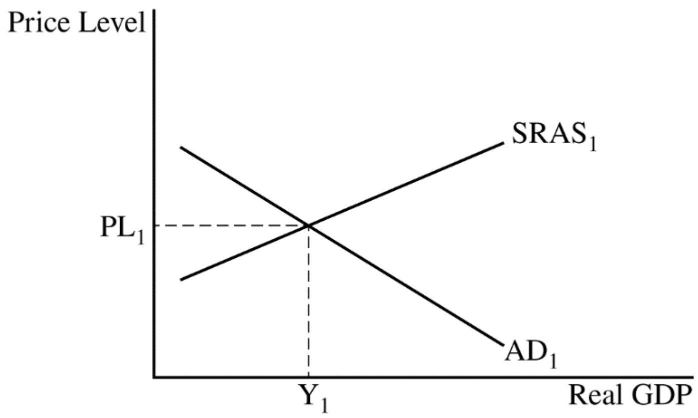


E Point 9	State that Barrikos' capital and financial account (CFA) will move into surplus and explain that international investors will seek higher returns on financial capital in Barrikos, which will increase financial capital inflows into Barrikos.	**1 point**

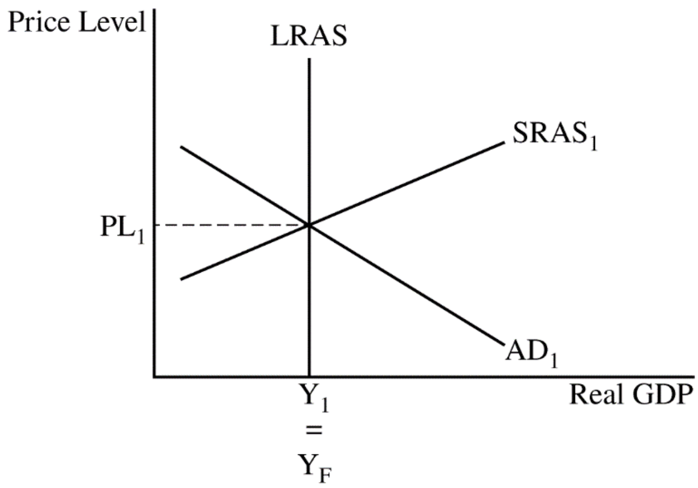
F Point 10	State that Barrikos' currency will appreciate and explain that demand for the currency will increase (or the supply of the currency will decrease).	**1 point**

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 the aggregate demand (AD) and short-run aggregate supply (SRAS) curves. **1 point**



For the second point, the graph must show a vertical long-run aggregate supply (LRAS) curve at equilibrium real output $Y_1 = Y_F$. **1 point**

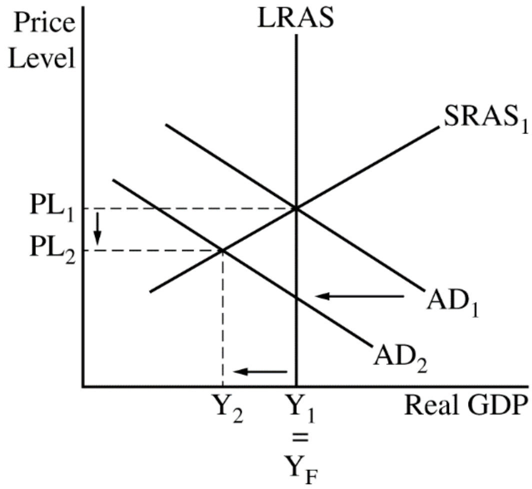


Total for part (a) 2 points

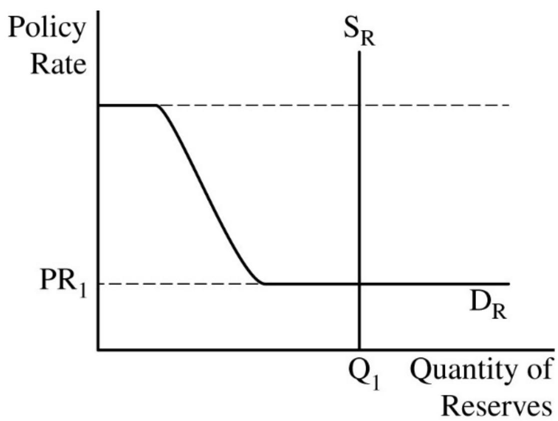
(b) (i) Calculate the marginal propensity to consume as 0.4 and show your work. **1 point**

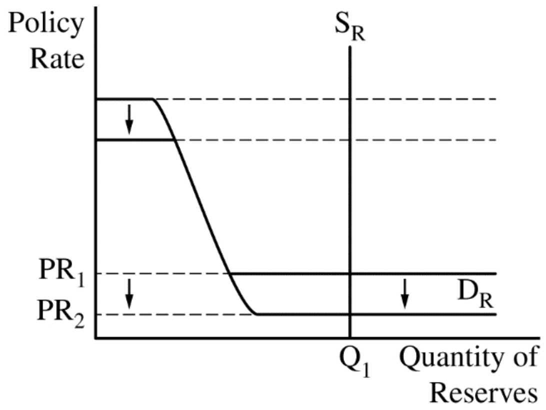
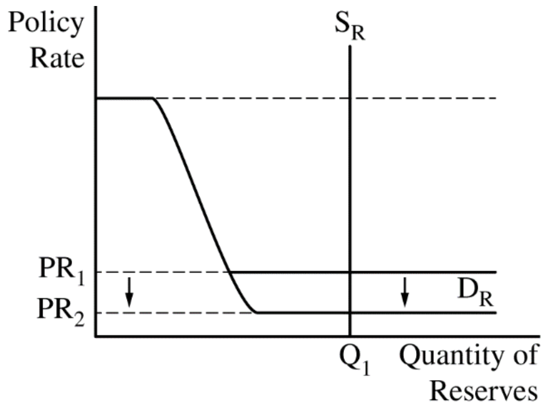
$$\text{MPC} = \frac{\Delta \text{ Consumer Spending}}{\Delta \text{ Disposable Income}} = \frac{\$100{,}000 - \$110{,}000}{\$110{,}000 - \$135{,}000} = \frac{-\$10{,}000}{-\$25{,}000} = 0.4$$

(ii)	On the graph from part (a), show the short-run effect of the decrease in consumer spending as a leftward shift of the AD curve, resulting in a decrease in the price level to PL_2 and a decrease in real output to Y_2.	**1 point**



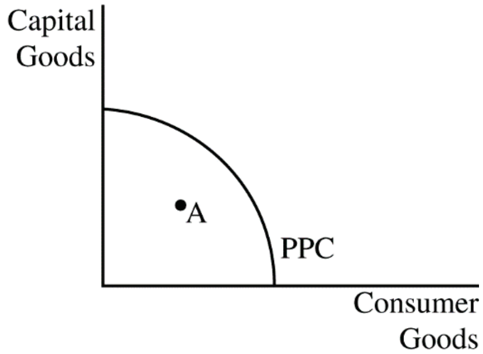
	Total for part (b)	**2 points**
(c)	Explain that input prices (e.g., nominal wages) and/or inflationary expectations will decrease, causing SRAS to increase until it reaches full employment.	**1 point**
(d)	State that the central bank would decrease its administered interest rates or decrease interest on reserves.	**1 point**
(e)	Draw a correctly labeled graph of the reserve market with the supply curve intersecting the demand curve in the range of ample reserves.	**1 point**



	For the second point, the graph must show a decrease in the administered interest rates, resulting in a decrease in the policy rate.  OR For the second point, the graph must show a decrease in the lower bound of the demand curve for reserves, resulting in a decrease in the policy rate. 	**1 point**
	Total for part (e)	**2 points**
(f)	For the first point, state that the quantity of national savings would decrease and the unemployment rate would decrease.	**1 point**
	For the second point, explain that the decrease in nominal interest rates will increase interest-sensitive spending (consumption, investment, or net exports), causing an increase in aggregate demand and real output.	**1 point**
	Total for part (f)	**2 points**
	Total for question 1	**10 points**

Question 3: Short — 5 points

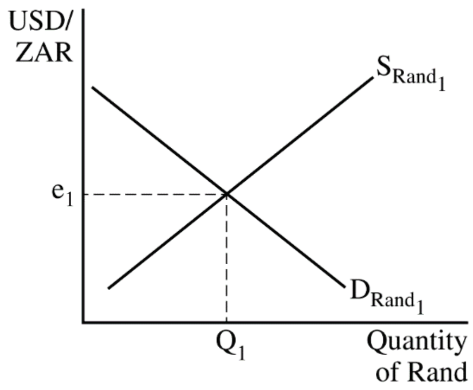
(a)	Calculate the number of people that are unemployed as 63,000 and show your work. $\text{Unemployed} = \text{Unemployment Rate} \times \text{Labor Force Participation Rate} \times \text{Adult Population} = 9\% \times 70\% \times 1{,}000{,}000 = 63{,}000$	**1 point**
(b)	State that the country of Zeta is currently experiencing a recessionary gap and explain that the current unemployment rate (9%) is higher than the natural rate of unemployment (5%).	**1 point**
(c)	Draw a correctly labeled graph of the production possibilities curve (PPC) for Zeta that shows point A below the PPC.	**1 point**



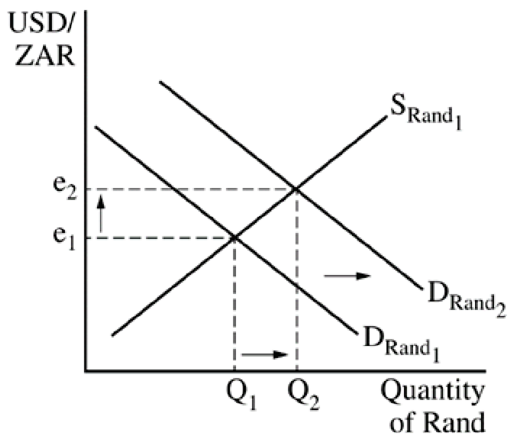
(d) (i)	State that the labor force participation rate will decrease and explain that the labor force will decrease because the workers who stopped looking for employment are no longer considered to be unemployed.	**1 point**
(ii)	State that the unemployment rate will decrease.	**1 point**
	Total for question 3	**5 points**

Question 2: Short — 5 points

(a)	State that United States net exports will decrease and explain that the demand for goods from South Africa will increase, which increases United States imports.	**1 point**
(b) (i)	State that the capital and financial account balance in the United States will move into surplus.	**1 point**
(ii)	State that actual unemployment in South Africa will decrease in the short run and explain that South African exports will increase, which will increase aggregate demand and real GDP in South Africa.	**1 point**
	Total for part (b)	**2 points**
(c)	Draw a correctly labeled graph of the foreign exchange market for the rand.	**1 point**



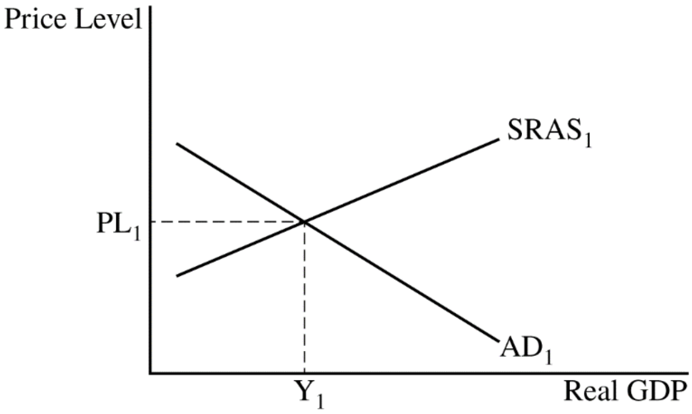
	For the second point, the graph must show a rightward shift in the demand curve for the rand, resulting in an appreciation of the rand.	**1 point**



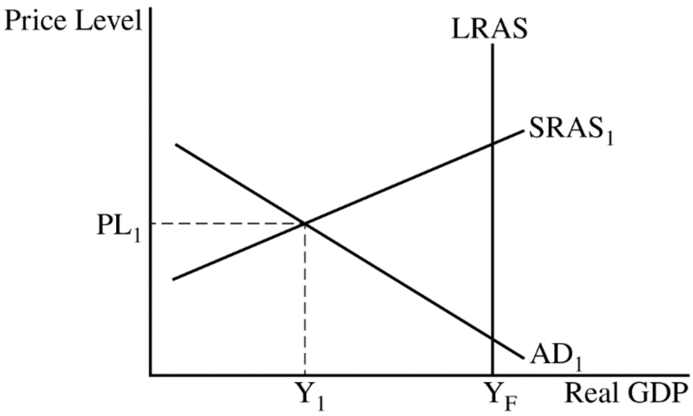
	Total for part (c)	**2 points**
	Total for question 2	**5 points**

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 right of Y_1 and label the full-employment output Y_F. **1 point**



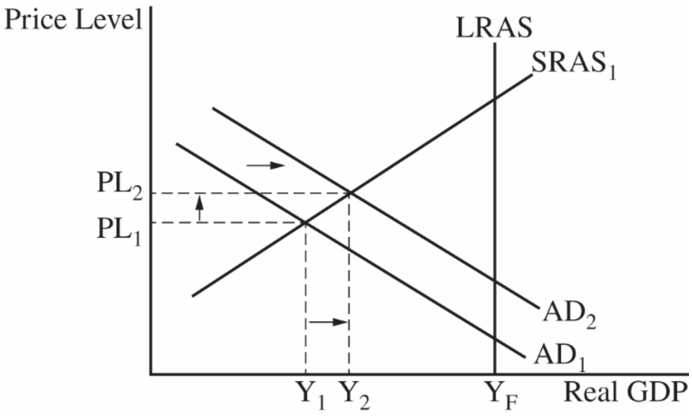
Total for part (a) 2 points

(b) State an increase in government spending, a decrease in taxes, or an increase in transfer payments. **1 point**

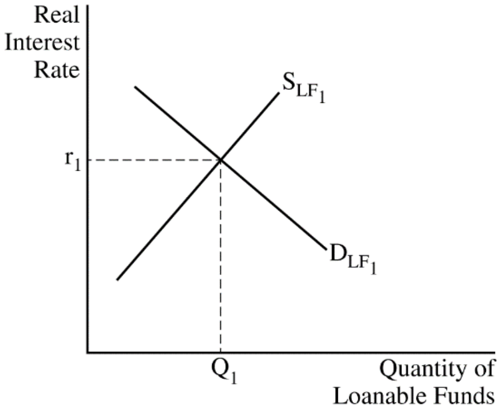
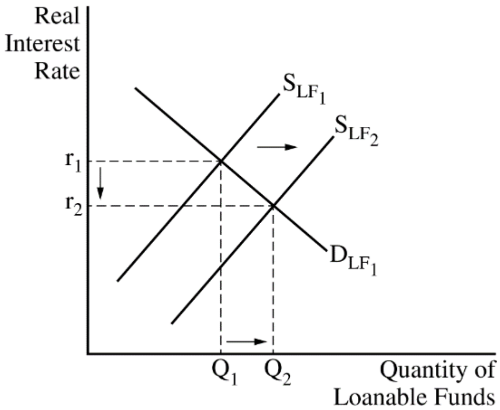
(c) Calculate the minimum change in investment spending as $50 billion and show your work. **1 point**

$$\text{Minimum Change in Investment Spending} = \frac{\$200\text{ billion}}{\left(\frac{1}{0.25}\right)} = \$50\text{ billion}$$

(d) On the graph from part (a), show the short-run effect of the change in investment spending as a rightward shift of the aggregate demand curve, resulting in a higher equilibrium price level and higher equilibrium real output that is less than full-employment output, labeled PL_2 and Y_2 respectively. **1 point**



(e) State that the actual rate of unemployment is greater than the natural rate of unemployment and explain that the economy is still in a recessionary gap. **1 point**

(f)	Draw a correctly labeled graph of the loanable funds market. 	**1 point**
	For the second point, the graph must show a rightward shift in the supply of loanable funds curve, resulting in a decrease in the equilibrium real interest rate. 	**1 point**
	Total for part (f)	**2 points**
(g) (i)	State that real GDP will increase in the short run and explain that interest-sensitive spending (consumption, investment, or net exports) will increase, which will increase aggregate demand.	**1 point**
(ii)	State that long-run aggregate supply will increase and explain that the decrease in the real interest rate means the cost of borrowing has decreased, which increases investment spending on plant and equipment and increases capital formation, which will increase potential output.	**1 point**
	Total for part (g)	**2 points**
	Total for question 1	**10 points**

Question 3: Short — 5 points

(a)	**(i)**	State that the government budget will move into deficit in the short run and explain that tax revenues (T) will decrease and transfer payments (TR) will increase.	**1 point**
	(ii)	State that the government debt will increase.	**1 point**
		Total for part (a)	**2 points**
(b)		Identify an increase in taxes or a decrease in government spending.	**1 point**
(c)		State that the actual unemployment rate will increase in the short run and explain that aggregate demand will decrease, which will decrease real output.	**1 point**
(d)		State that the government's efforts to maintain a balanced budget made Geeland's recession more severe in the short run and explain that in order to maintain a balanced budget, the government had to implement contractionary fiscal policy during a recession. (It is also acceptable to explain that the government's efforts to maintain a balanced budget will decrease real output or aggregate demand and that unemployment will increase.)	**1 point**
		Total for question 3	**5 points**

2018

AP® CollegeBoard

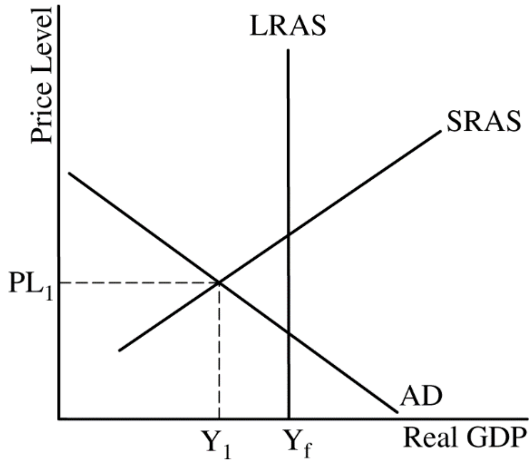
AP Macroeconomics

Scoring Guidelines

2018 SCORING GUIDELINES

Question 1

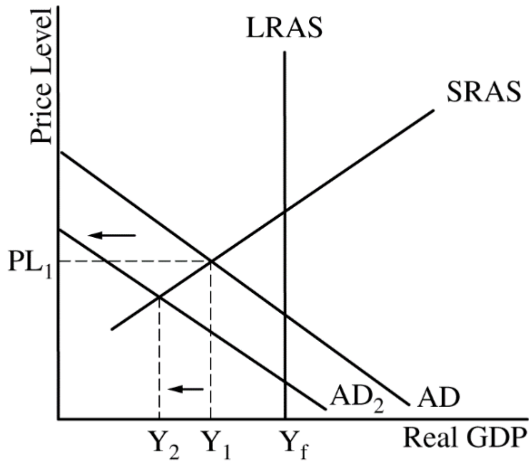
10 points (2 + 3 + 2 + 3)



(a) 2 points:

- One point is earned for drawing a correctly labeled graph for aggregate demand (AD) and short-run aggregate supply (SRAS), showing PL_1 and Y_1 at the intersection of AD and SRAS.

- One point is earned for drawing a vertical LRAS curve to the right of Y_1.



(b) 3 points:

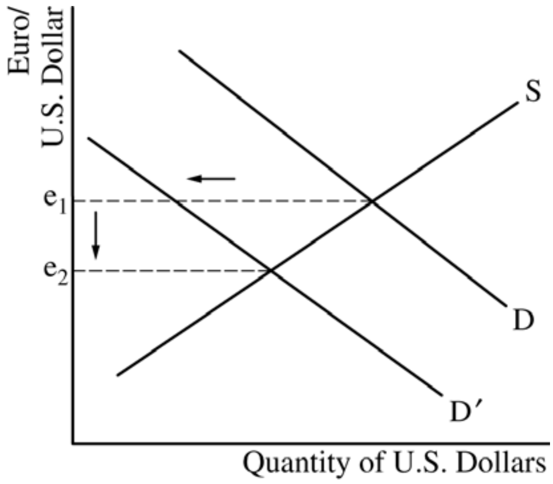
- One point is earned for stating that United States exports will decrease and for explaining that the fall in income in the euro zone reduces the demand for United States goods.

- One point is earned for showing a leftward shift of the aggregate demand (AD) curve and showing lower United States real output on the graph.

- One point is earned for stating that unemployment in the U.S. will increase.

2018 SCORING GUIDELINES

Question 1 (continued)



(c) 2 points:

- One point is earned for stating that the euro will appreciate against the U.S. dollar because the supply of euros decreases OR because the dollar depreciates against the euro, the euro must appreciate.
- One point is earned for drawing a correctly labeled graph of the foreign exchange market for dollars and for showing a leftward shift in the demand curve for the dollar, which would result in a depreciation of the dollar.

(d) 3 points:

- One point is earned for stating that the U.S. aggregate demand will increase.
- One point is earned for stating that the U.S. price level will increase.
- One point is earned for stating that the change in the interest rate is indeterminate and for explaining that the combination of expansionary fiscal and monetary policies has opposite effects on interest rates (the expansionary fiscal policy will increase the interest rate, as government borrows to finance its spending, and the expansionary monetary policy will increase the money supply and decrease the interest rate).

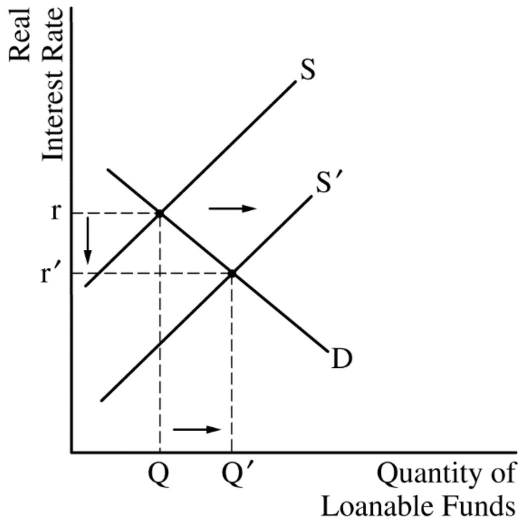
2018 SCORING GUIDELINES

Question 2

5 points (1 + 2 + 2)

(a) 1 point:

- One point is earned for stating that private savings will increase.



(b) 2 points:

- One point is earned for drawing a correctly labeled graph of the loanable funds market showing a downward sloping demand curve and an upward sloping supply curve.
- One point is earned for showing a rightward shift in the supply curve (increased private savings) and for showing a decrease in the equilibrium real interest rate.

(c) 2 points:

- One point is earned for stating that aggregate demand will increase and for explaining that the decrease in the real interest rate will result in an increase in interest-sensitive spending (consumption or investment or net exports).
- One point is earned for stating that potential real gross domestic product (GDP) will increase as a result of an increase in capital formation brought about by the increase in investment spending (or because capital formation increased the long-run aggregate supply).

2018 SCORING GUIDELINES

Question 3

5 Points (1 + 1 + 1 + 2)

(a) 1 point:

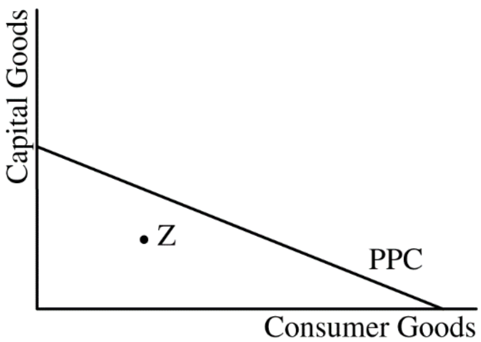
- One point is earned for stating that neither country has a comparative advantage in producing consumer goods and for explaining that the opportunity cost of producing 1 unit of consumer goods is the same for both countries (which is 1/2 a unit of capital goods).

(b) 1 point:

- One point is earned for correctly calculating the unemployment rate as 10 percent (20,000/200,000 × 100 = 10%).

(c) 1 point:

- One point is earned for correctly calculating the labor force participation rate as 66.67 percent (200,000/300,000 × 100 = 66.67%).



(d) 2 points:

- One point is earned for drawing a correctly labeled graph of the production possibilities curve (PPC).

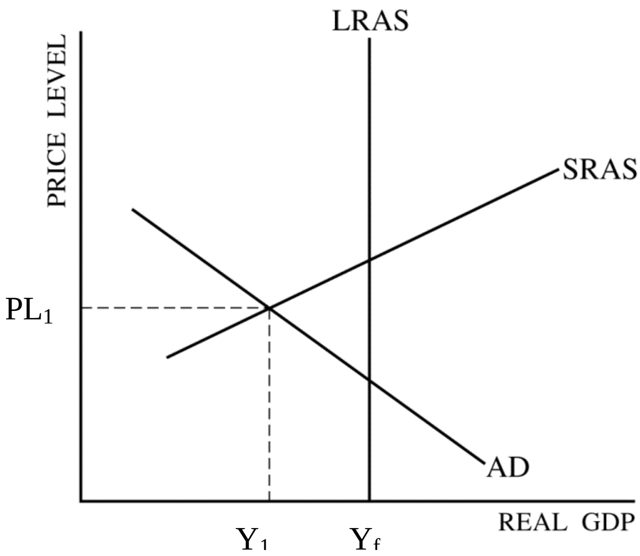
- One point is earned for correctly showing point Z below the PPC.

AP® Macroeconomics 2014 Scoring Guidelines

2014 SCORING GUIDELINES

Question 1

11 Points (2+2+1+2+2+2)



2 points:

- One point is earned for drawing a correctly labeled graph showing an equilibrium with AD, SRAS, Y_1, and PL_1 labeled.
- One point is earned for drawing a vertical LRAS curve at Y_f to the right of the intersection of AD and SRAS.

2 points:

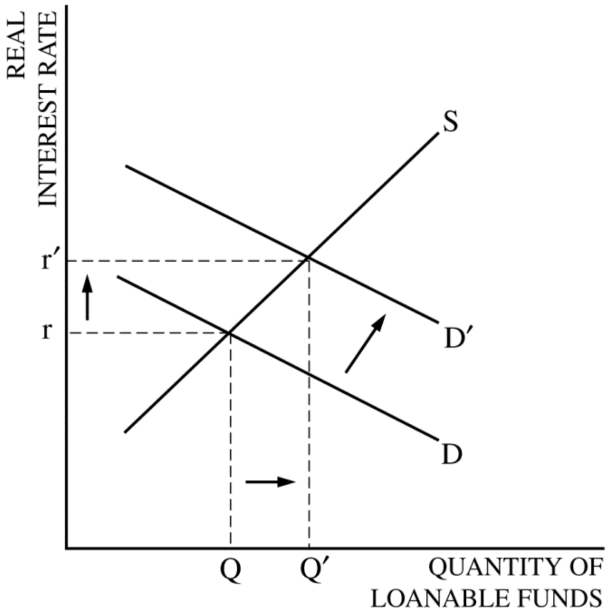
- One point is earned for stating that cyclical unemployment will decrease.
- One point is earned for stating that the natural rate of unemployment will not change.

1 point:

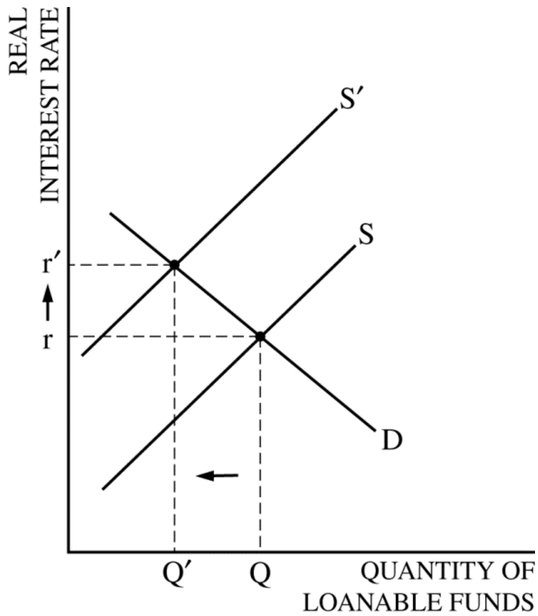
- One point is earned for calculating the maximum change in real GDP:
  Change in GDP = (1/0.25) X $100 billion = $400 billion.

2014 SCORING GUIDELINES

Question 1 continued



OR



2 points:

- One point is earned for drawing a correctly labeled loanable funds market graph.
- One point is earned for shifting the demand curve to the right (or shifting the supply curve to the left) and showing an increase in the real interest rate.

2 points:

- One point is earned for stating that the economic growth rate will fall.
- One point is earned for explaining that the higher real interest rate will slow down capital formation.

2 points:

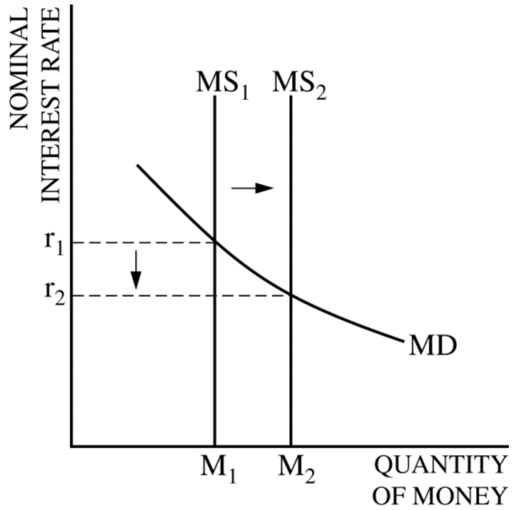
- One point is earned for stating that real gross domestic product will increase.
- One point is earned for explaining that the expansionary effect of the increase in government spending outweighs the contractionary effect of the increase in taxes of the same size. (Or students may explain by calculating the net increase in GDP, $100 billion, or stating the tax multiplier is smaller than the spending multiplier.)

2014 SCORING GUIDELINES

Question 2

6 points (2+2+1+1)

2 points:
- One point is earned for stating that the Federal Reserve will buy government bonds.
- One point is earned for stating that the price of government bonds will increase.



2 points:
- One point is earned for drawing a correctly labeled graph of the money market.
- One point is earned for shifting the money supply curve to the right and showing a decrease in the nominal interest rate.

1 point:
- One point is earned for stating that the Federal Reserve purchase will not initially affect commercial banks' required reserves.

1 point:
- One point is earned for defining the discount rate as the interest rate that the Federal Reserve charges banks for borrowing from its discount window.

2014 SCORING GUIDELINES

Question 3

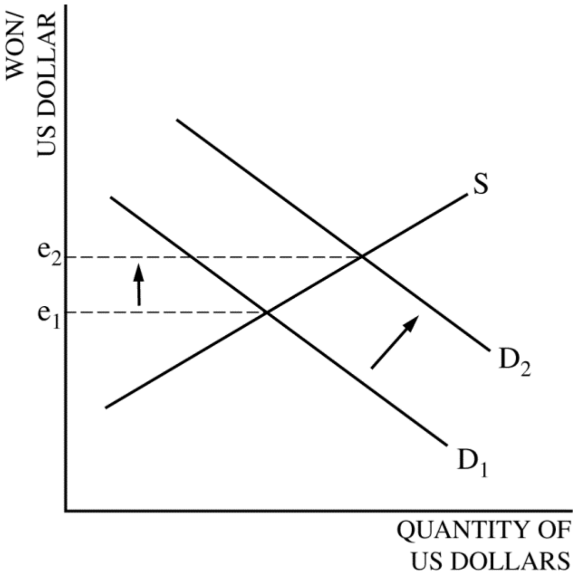
5 points (1+2+2)

1 point:

- One point is earned for stating that United States exports to South Korea will increase.

2 points:

- One point is earned for stating that the United States current account will be in surplus.
- One point is earned for stating that the United States gross domestic product will increase and explaining that higher U.S. exports increase AD (or that production increases to meet the increased export demand from South Korea).



2 points:

- One point is earned for drawing a correctly labeled graph of the foreign exchange market for the U.S. dollar.
- One point is earned for shifting the demand curve for the dollar to the right (and/or shifting the supply curve to the left) and showing an increase in the won price per dollar.