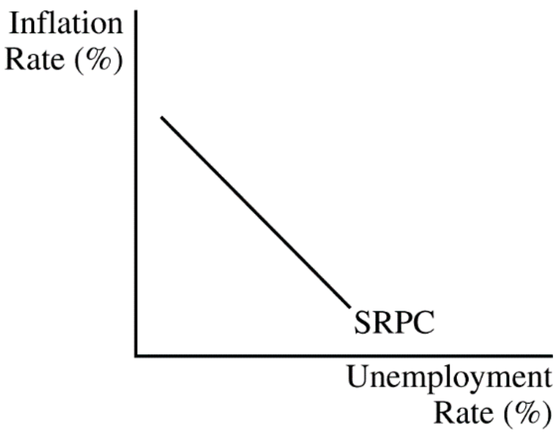
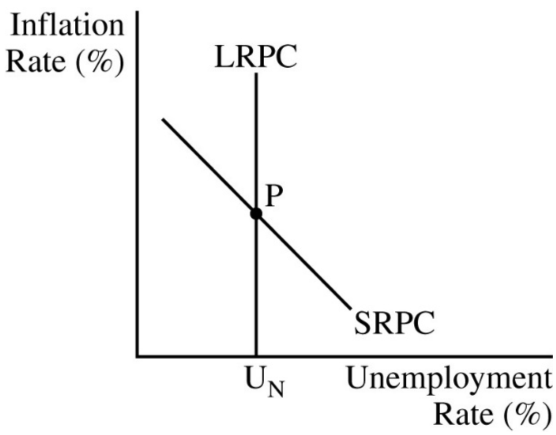
Question 1: Long — 10 points

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

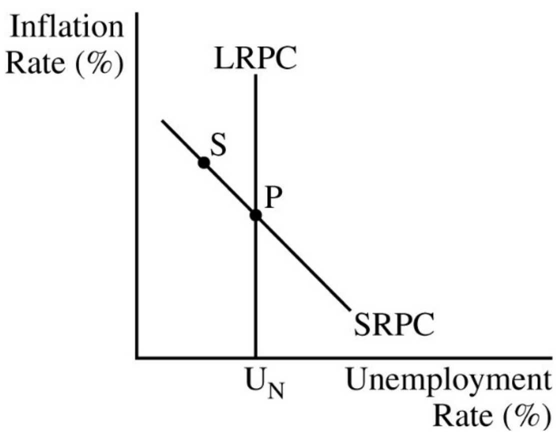


Point 2 — The graph must include a correctly labeled long-run Phillips curve (LRPC) and show a point labeled P at the intersection of the short-run and long-run Phillips curves. **1 point**

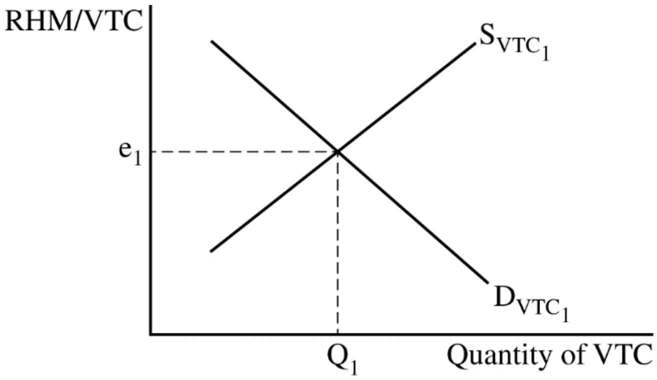


B (i) Point 3 — State that real output will increase and explain that the new residential construction projects increase investment spending, which increases aggregate demand. **1 point**

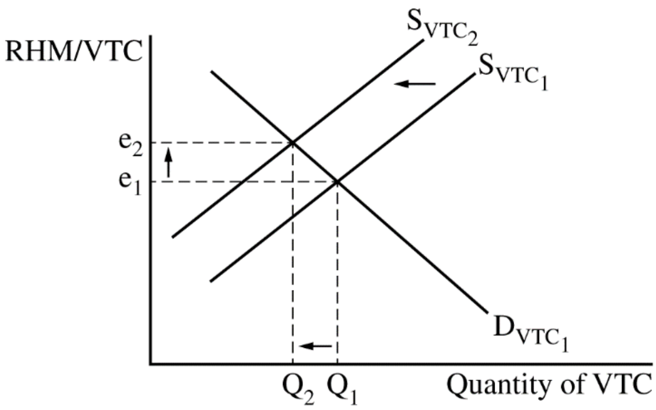
(ii) Point 4 — On the graph from part A, show a point labeled S on the SRPC to the left of point P. **1 point**



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**

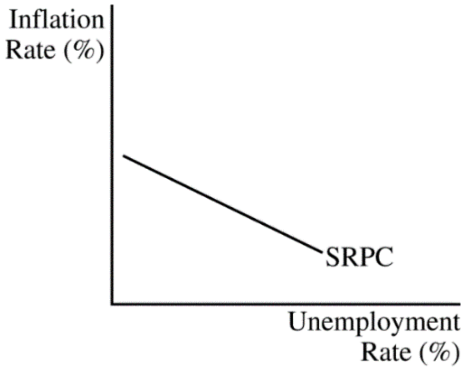
Question 1: Long — 10 points

A — Point 1

State that the actual unemployment rate is 10%. **1 point**

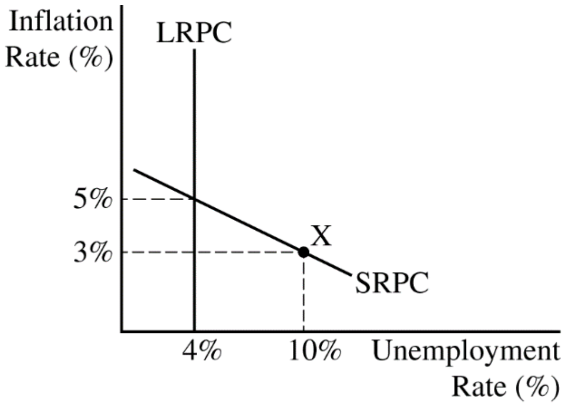
B — Point 2

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

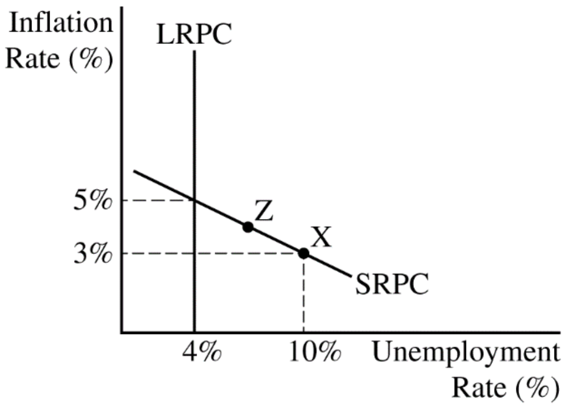
State an increase in government spending, a decrease in taxes, or an increase in transfer payments. **1 point**

D (i) State that the government budget will move into deficit and explain that government outlays exceed revenue. **1 point**

Point 5

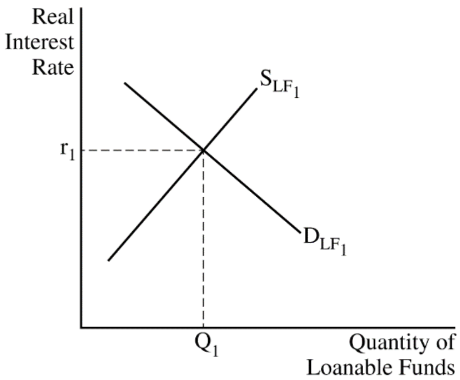
(ii) On the graph from part B, show a point labeled Z on the SRPC to the left of point X. **1 point**

Point 6



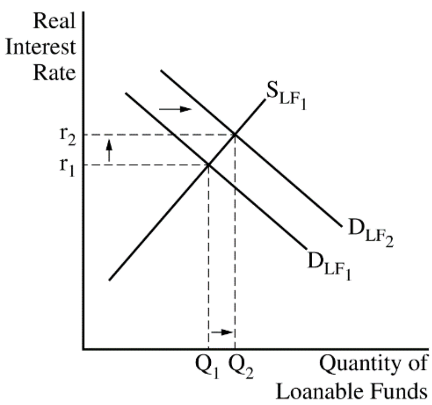
(iii) Draw a correctly labeled graph of the loanable funds market. **1 point**

Point 7

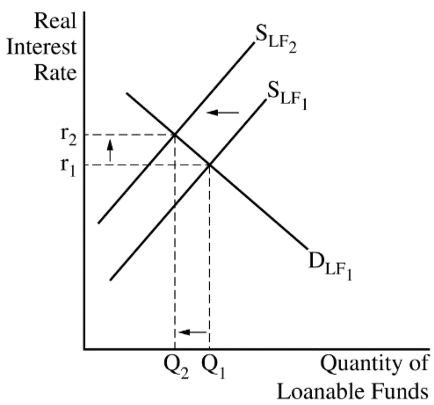


Point 8

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**



OR



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**

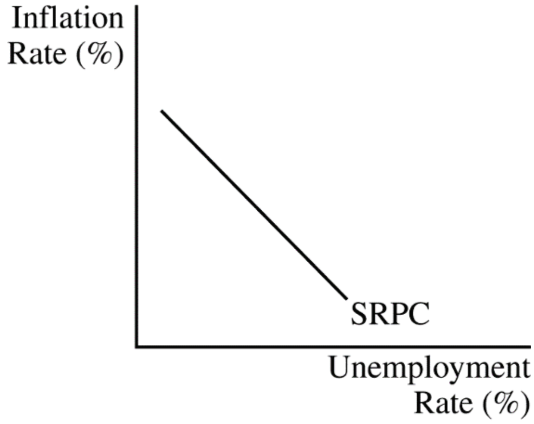
F

Point 10

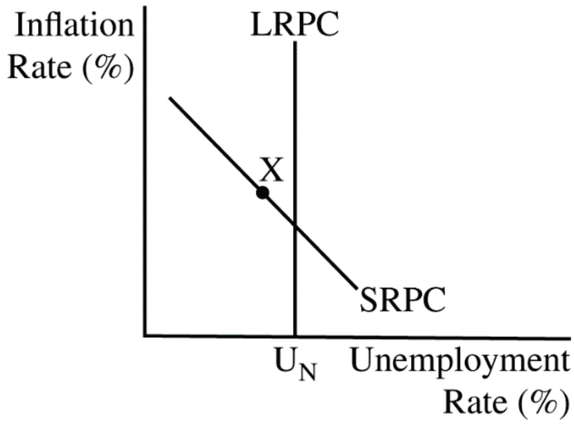
State that Barrikos' currency will appreciate and explain that demand for the currency will increase (or the supply of the currency will decrease). **1 point**

Question 2: Short — 5 points

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



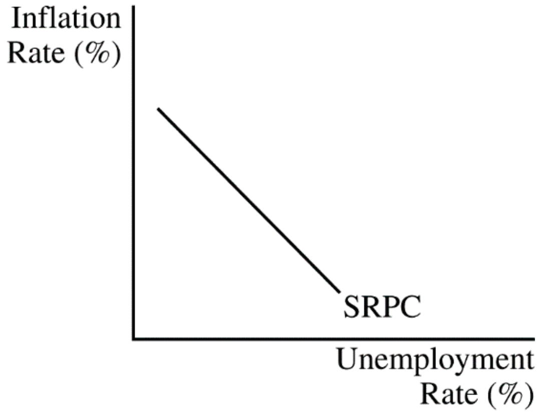
	For the second point, the graph must include a correctly labeled long-run Phillips curve (LRPC) and show point X on the SRPC to the left of the LRPC.	**1 point**



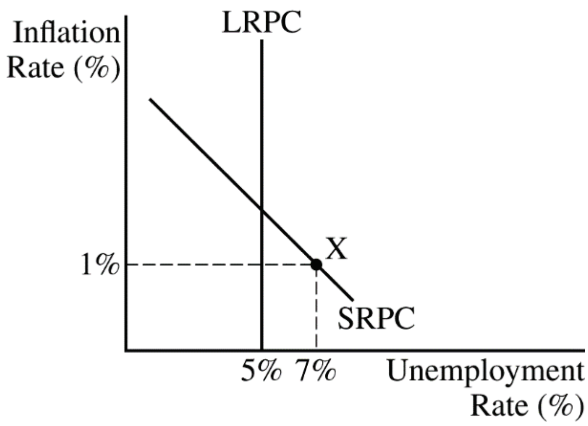
	Total for part (a)	**2 points**
(b)	State that the central bank would increase its administered interest rates or increase interest on reserves.	**1 point**
(c)	State that there will be an increase in the flow of international financial capital into Noralandia and explain that international investors will seek higher returns on financial capital in Noralandia.	**1 point**
(d)	State that Noralandia's currency will appreciate and explain there will be an increase in the demand for Noralandia's currency (or a decrease in the supply of Noralandia's currency).	**1 point**
	Total for question 2	**5 points**

Question 1: Long — 10 points

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



For the second point, the graph must include a vertical long-run Phillips curve (LRPC) at the natural rate of unemployment (5%) and must include point X on the SRPC to the right of the LRPC at the actual unemployment rate (7%) and the actual inflation rate (1%). **1 point**



Total for part (a) 2 points

(b) State that the expected inflation rate is greater than 1% and explain that the actual unemployment rate (7%) is greater than the natural rate of unemployment (5%); or explain that the economy is in a recession. **1 point**

(c) (i) Calculate the maximum change in aggregate demand as $180 billion and show your work. **1 point**

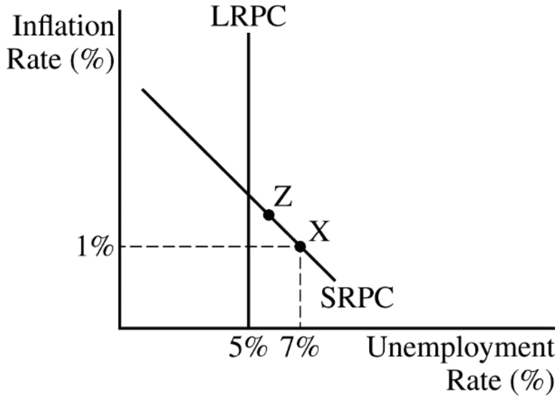
$$\text{Maximum } \Delta \text{ in AD} = -\$20 \text{ billion} \times \frac{-0.9}{1-0.9} = -\$20 \text{ billion} \times -9 = \$180 \text{ billion}$$

(ii) Calculate the maximum change in aggregate demand as $200 billion and show your work. **1 point**

$$\text{Maximum } \Delta \text{ in AD} = \$20 \text{ billion} \times \frac{1}{1-0.9} = \$20 \text{ billion} \times 10 = \$200 \text{ billion}$$

Total for part (c) 2 points

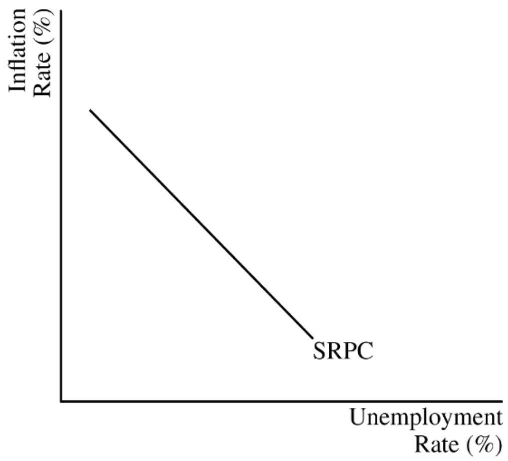
(d)	On the graph from part (a), show point Z on the SRPC to the left of point X.	**1 point**



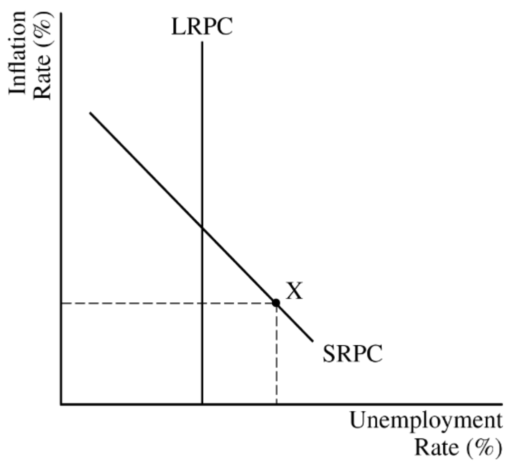
(e)	State that aggregate demand would increase and explain that the increase in disposable income would increase consumption spending.	**1 point**
(f) (i)	State that the short-run aggregate supply curve will shift to the right and explain that input prices (e.g., nominal wages) and/or inflationary expectations will decrease.	**1 point**
(ii)	State that the short-run Phillips curve will shift to the left.	**1 point**
(iii)	State that the actual unemployment rate will decrease.	**1 point**
	Total for part (f)	**3 points**
	Total for question 1	**10 points**

Question 2: Short — 5 points

(a) Draw a correctly labeled graph of the SRPC. **1 point**



For the second point, the graph must include a correctly labeled LRPC and show point X on the SRPC to the right of the LRPC. **1 point**



Total for part (a) **2 points**

(b) (i) Calculate the minimum change in government spending as $150 billion and show your work. **1 point**

$$\frac{\text{Change in GDP}}{\text{Spending Multiplier}} = \frac{\$600\text{ billion}}{1/(1-0.75)} = \frac{\$600\text{ billion}}{4} = \$150\text{ billion}$$

(ii) Calculate the minimum change in taxes as $200 billion and show your work. **1 point**

$$\frac{\text{Change in GDP}}{\text{Tax Multiplier}} = \frac{\$600\text{ billion}}{-0.75/(1-0.75)} = \frac{\$600\text{ billion}}{-3} = -\$200\text{ billion}$$

Total for part (b) **2 points**

(c) Explain that SRAS will increase in the long run due to a decrease in nominal wages, input prices, or inflationary expectations. **1 point**

Total for question 2 **5 points**

2019

AP® Macroeconomics

Scoring Guidelines

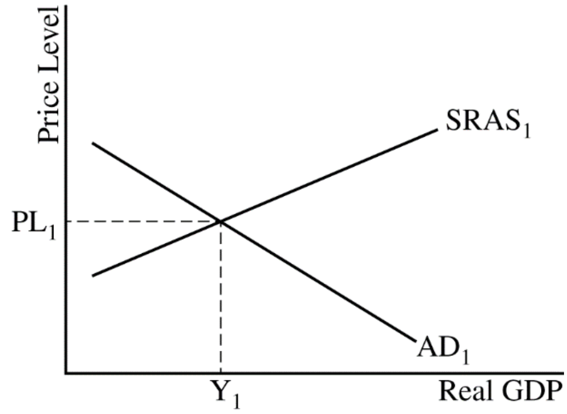
Set 1

2019 SCORING GUIDELINES

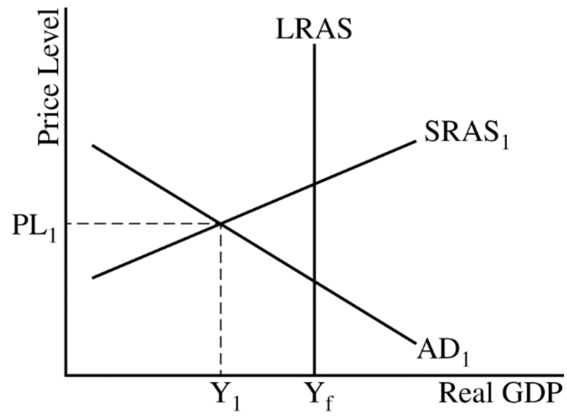
Question 1

10 Points (2 + 2 + 2 + 2 + 2)

(a) 2 points



- One point is earned for drawing a correctly labeled graph showing a downward sloping aggregate demand (AD) curve, an upward sloping short-run aggregate supply (SRAS) curve, the equilibrium output level labeled Y_1, and the equilibrium price level labeled PL_1.



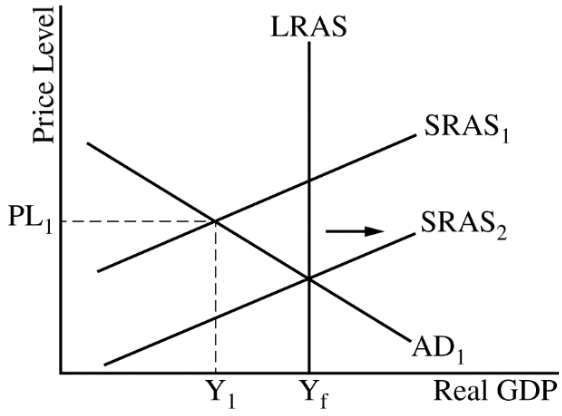
- One point is earned for drawing a correctly labeled vertical long-run aggregate supply (LRAS) curve with full employment output labeled Y_f to the right of the short-run equilibrium output level, Y_1.

(b) 2 points

- One point is earned for explaining that nominal wages, input prices, or expected inflation will decrease, causing the SRAS curve to shift to the right until real GDP reaches full employment at Y_f.

2019 SCORING GUIDELINES

Question 1 (continued)



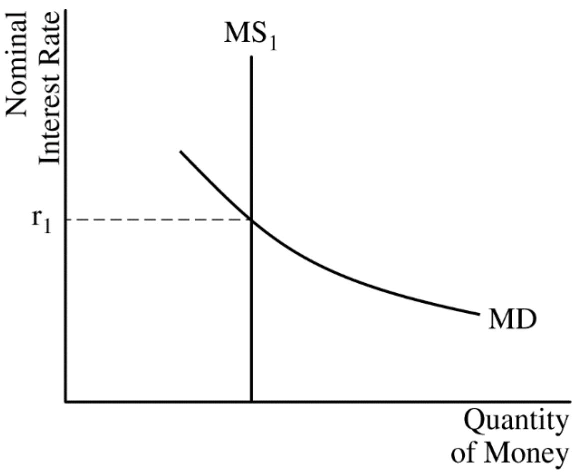
- One point is earned for showing a rightward shift in the SRAS curve intersecting the AD curve and LRAS curve at Y_f.

(c) 2 points

- One point is earned for correctly calculating the minimum change in government spending required to change aggregate demand by the amount of the output gap as an increase of \$8 billion $\left(= \frac{\$40 \text{ billion}}{5}\right)$.

- One point is earned for correctly calculating the minimum change in taxes required to change aggregate demand by the amount of the output gap as a decrease of \$10 billion $\left(= \frac{\$40 \text{ billion}}{-4}\right)$.

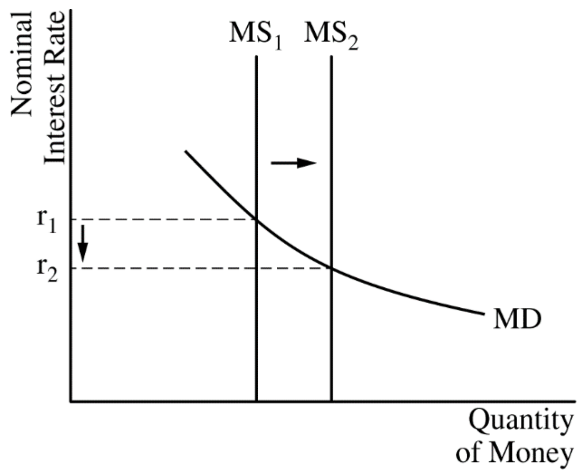
(d) 2 points



- One point is earned for drawing a correctly labeled graph of the money market.

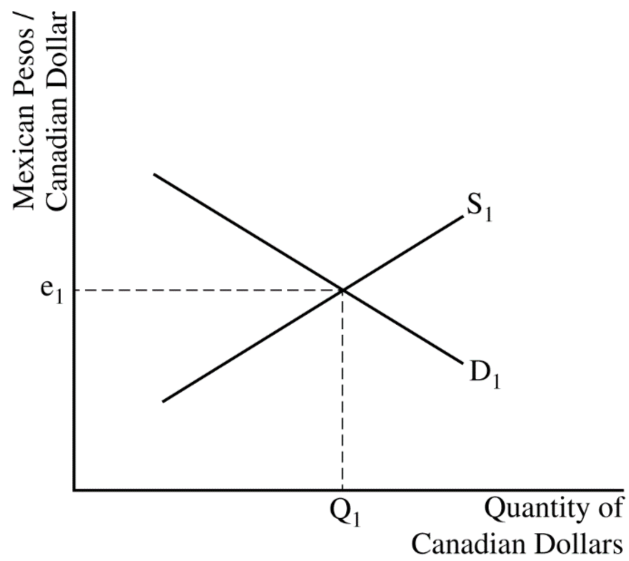
2019 SCORING GUIDELINES

Question 1 (continued)



- One point is earned for showing a rightward shift in the money supply curve, resulting in a lower nominal interest rate.

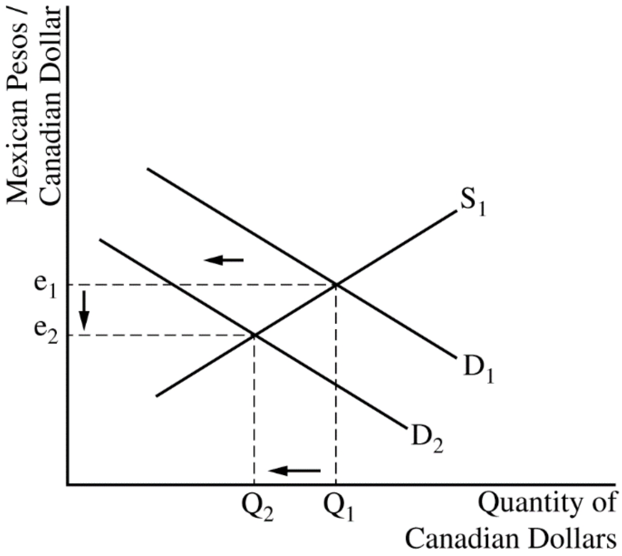
(e) 2 points



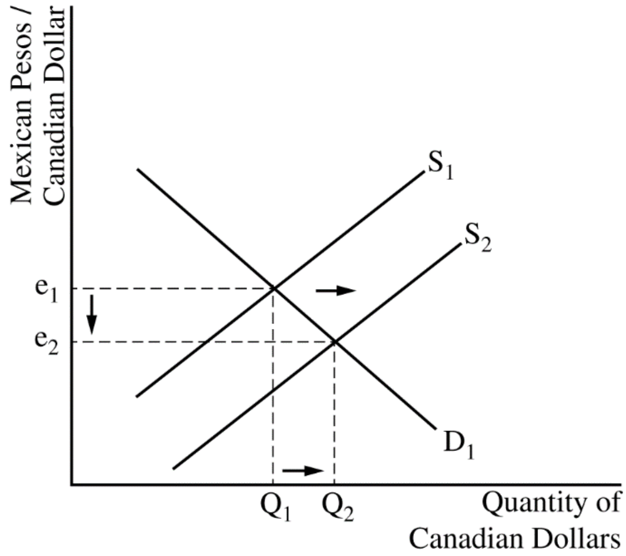
- One point is earned for drawing a correctly labeled graph of the foreign exchange market for the Canadian dollar.

2019 SCORING GUIDELINES

Question 1 (continued)



OR



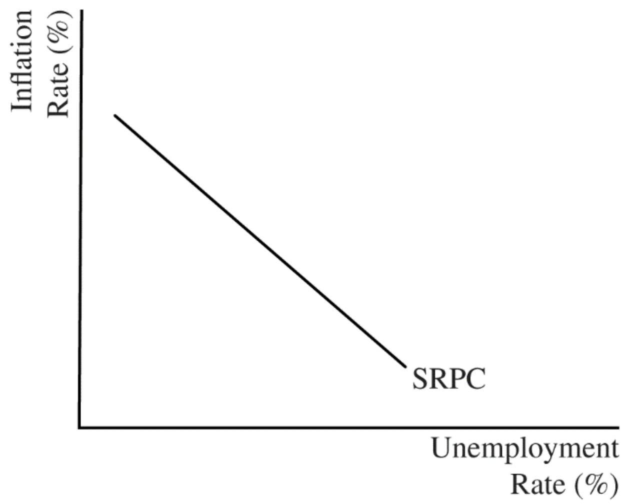
- One point is earned for showing a leftward shift of the demand curve for Canadian dollars (or a rightward shift of the supply curve of Canadian dollars) and for showing that the Canadian dollar will depreciate against the Mexican peso.

2019 SCORING GUIDELINES

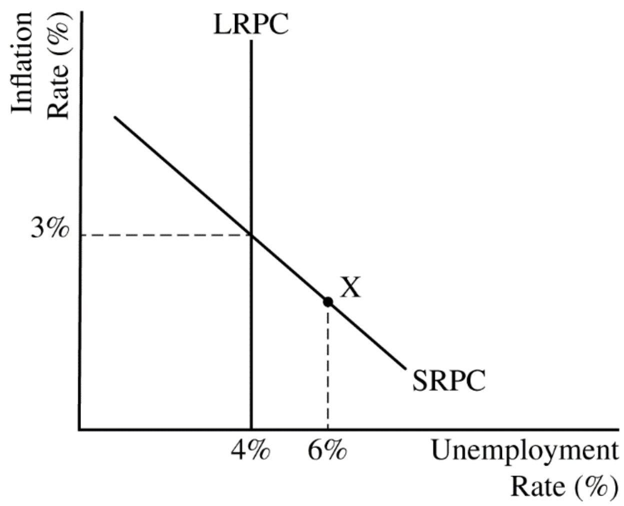
Question 2

5 Points (2 + 1 + 1 + 1)

(a) 2 points



- One point is earned for drawing a correctly labeled graph showing the short-run Phillips curve (SRPC).



- One point is earned for drawing the long-run Phillips curve (LRPC) showing the short-run equilibrium, labeled as point X, on the SRPC to the right of the LRPC, and for plotting the numbers in the correct places on the graph.

(b) 1 point

- One point is earned for stating that the actual inflation rate is less than the expected inflation rate.

2019 SCORING GUIDELINES

Question 2 (continued)

(c) 1 point

- One point is earned for stating that lenders will be better off and for explaining the real value of the loans that will be repaid will be higher than expected **OR** for explaining the relationship between the nominal and the real interest rates using the Fisher equation.

(d) 1 point

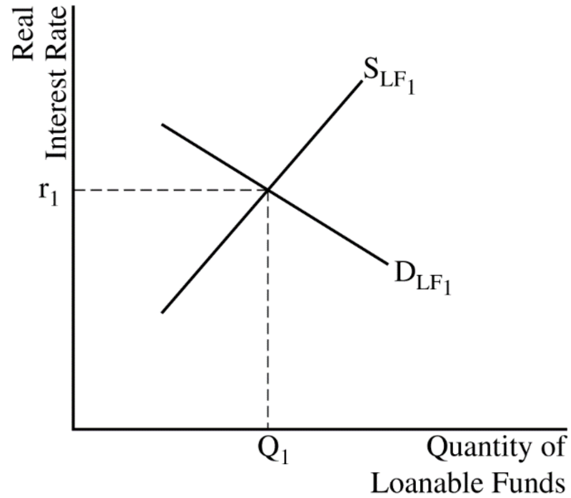
- One point is earned for stating that the natural rate of unemployment will not change in the long run.

2019 SCORING GUIDELINES

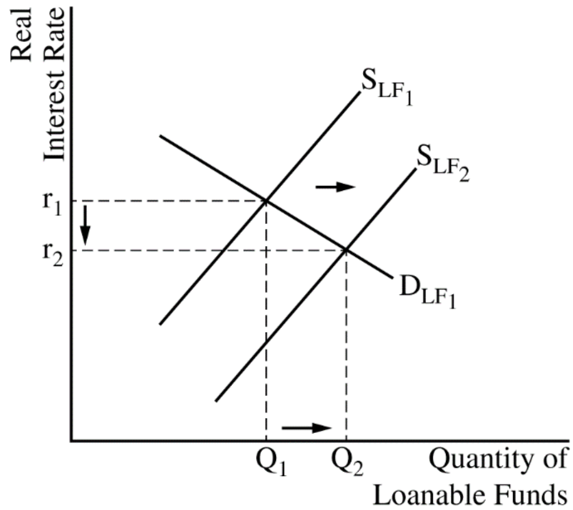
Question 3

5 Points (2 + 1 + 2)

(a) 2 points



- One point is earned for drawing a correctly labeled graph of the loanable funds market and identifying the equilibrium real interest rate and quantity of loanable funds.



- One point is earned for showing a rightward shift of the supply curve for loanable funds and for showing a lower equilibrium real interest rate.

(b) 1 point

- One point is earned for stating that Econland's purchases of foreign assets will increase and for explaining that Econland's investors will seek higher returns in other countries, which increases Econland's demand for foreign assets.

2019 SCORING GUIDELINES

Question 3 (continued)

(c) 2 points

- One point is earned for stating that Econland's currency will depreciate.
- One point is earned for stating that Econland's central bank would buy its currency in the foreign exchange market.

2017

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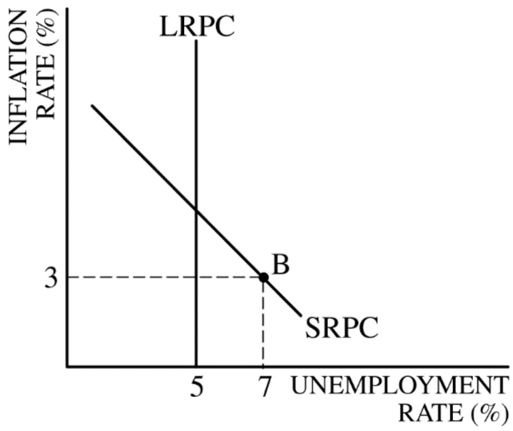
AP Macroeconomics

Scoring Guidelines

2017 SCORING GUIDELINES

Question 1

9 points (2 + 2 + 1 + 2 + 1 + 1)



(a) 2 points:

- One point is earned for drawing a correctly labeled graph of a downward-sloping short-run Phillips curve (SRPC).
- One point is earned for showing a correctly labeled vertical long-run Phillips curve (LRPC) at the natural rate of unemployment, 5%, and for showing point B on the SRPC to the right of LRPC at the actual unemployment rate, 7%, and the inflation rate, 3%.

(b) 2 points:

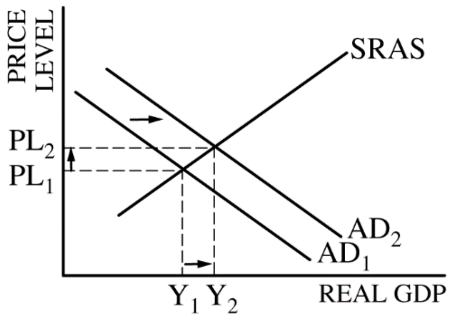
- One point is earned for stating that the short-run aggregate supply (SRAS) curve will shift to the right in the long run and for explaining that nominal wages will fall in response to high unemployment.
- One point is earned for stating that LRPC will remain unchanged.

(c) 1 point:

- One point is earned for stating that the government should either increase its expenditures (or purchases) or decrease taxes.

2017 SCORING GUIDELINES

Question 1 (continued)



(d) 2 points:

- One point is earned for drawing a correctly labeled graph showing a downward-sloping AD curve, upward-sloping SRAS curve, the equilibrium price level, and the equilibrium real GDP.
- One point is earned for showing a rightward shift of the AD curve and for showing an increase in both the price level and real GDP.

(e) 1 point:

- One point is earned for stating that the supply of country X's currency will increase and for explaining that spending on imports will increase as a result of the increase in real GDP.

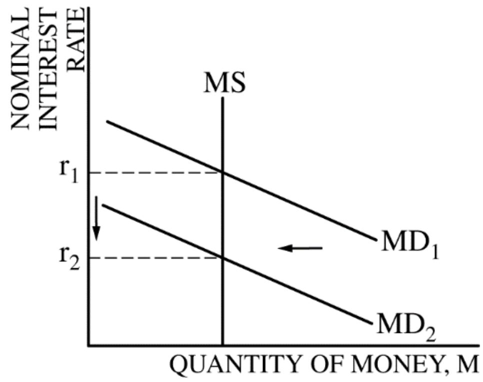
(f) 1 point:

- One point is earned for stating that country X's currency will depreciate.

2017 SCORING GUIDELINES

Question 2

6 points (2 + 2 +1 + 1)



(a) 2 points:

- One point is earned for drawing a correctly labeled graph of the money market.
- One point is earned for showing a leftward shift in the money demand curve, resulting in a lower nominal interest rate.

(b) 2 points:

- One point is earned for stating that the price of previously issued bonds will increase.
- One point is earned for stating that both the price level and real income will increase and for explaining that the lower interest rate will increase consumption, investment, and/or net exports (interest-sensitive spending), which increases aggregate demand.

(c) 1 point:

- One point is earned for stating that the velocity of money will increase.

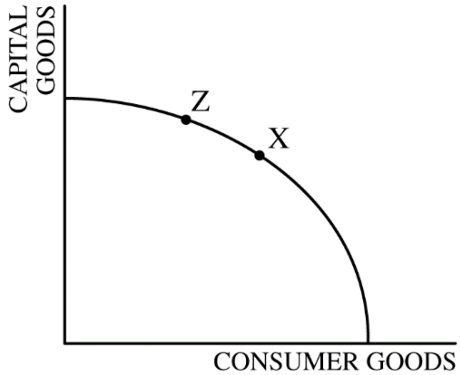
(d) 1 point:

- One point is earned for stating that the central bank would sell bonds.

2017 SCORING GUIDELINES

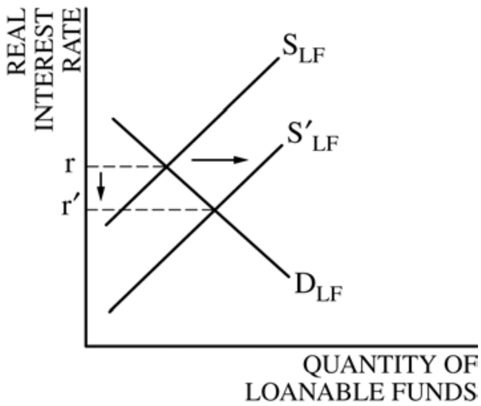
Question 3

5 points (1 + 2 + 1 + 1)



(a) 1 point:

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



(b) 2 points:

- One point is earned for drawing a correctly labeled graph of the loanable funds market.

- One point is earned for showing a rightward shift of the supply curve and a decrease in the real interest rate.

(c) 1 point:

- One point is earned for showing point Z to the left of point X on the curve.

(d) 1 point:

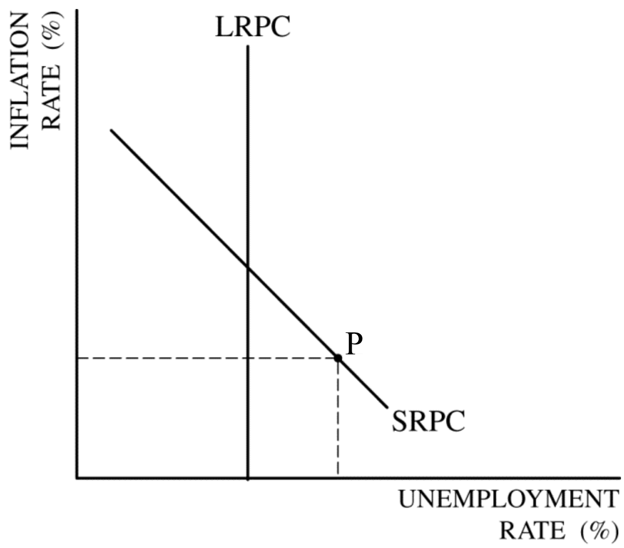
- One point is earned for stating that the long-run aggregate supply (LRAS) curve will shift to the right and for explaining that capital accumulation will increase.

AP® Macroeconomics 2016 Scoring Guidelines

2016 SCORING GUIDELINES

Question 1

10 points (2+1+1+2+1+1+2)



(a) 2 points:

- One point is earned for drawing a correctly labeled graph showing a vertical LRPC and a downward sloping SRPC.
- One point is earned for showing point P on the SRPC to the right of LRPC.

(b) 1 point:

- One point is earned for stating that SRPC will shift to the left, and for explaining that producing at a level of output below full employment will create higher unemployment and lower inflationary expectations that will result in lower nominal wages and input costs.

(c) 1 point:

- One point is earned for stating that the Federal Reserve should buy bonds.

(d) 2 points:

- One point is earned for stating that the federal funds rate will decrease and for explaining that the money supply will increase, which will increase reserves and decrease the federal funds rate.
- One point is earned for stating that the real interest rate will decrease in the short run.

2016 SCORING GUIDELINES

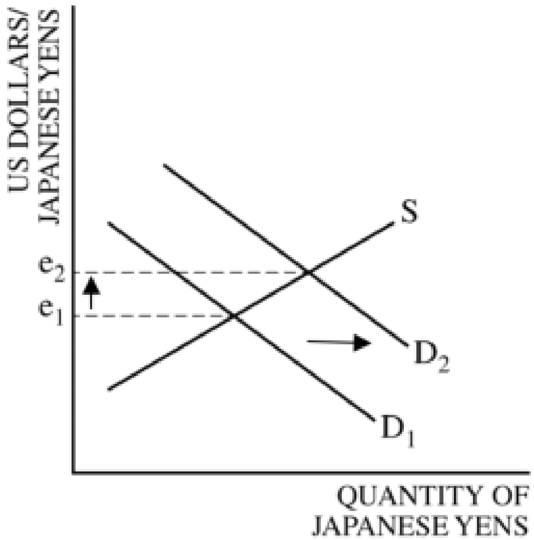
Question 1 (continued)

(e) 1 point:

- One point is earned for stating that real GDP will increase in the short run and for explaining that a decrease in the real interest rate will increase interest-sensitive spending, which includes consumption and investment in plant and equipment, resulting in an increase in aggregate demand.

(f) 1 point:

- One point is earned for stating that the demand for the Japanese yen will increase in the foreign exchange market.



(g) 2 points:

- One point is earned for drawing a correctly labeled graph of the foreign exchange market for the Japanese yen.
- One point is earned for showing a rightward shift of the demand curve for the yen and showing an increase in the dollar price of the yen (appreciating yen).

2016 SCORING GUIDELINES

Question 2

6 points (1+1+2+1+1)

(a) 1 point:
- One point is earned for stating that new loans are zero because the bank has no excess reserves (or because the bank is already fully loaned up).

(b) 1 point:
- One point is earned for correctly calculating the maximum amount of new loans that First Superior Bank can make as \$90 (= \$100 x (1 – 0.10)).

(c) 2 points:
- One point is earned for correctly calculating the maximum change over time in loans in the banking system as \$900 (= \$90 × 10).
- One point is earned for correctly calculating the maximum change over time in demand deposits in the banking system as \$1,000 (= \$100 × 10).

(d) 1 point:
- One point is earned for correctly calculating the maximum change over time in the money supply in the banking system as \$900 (= \$90 × 10).

(e) 1 point:
- One point is earned for stating that the money supply can be smaller than the maximum change identified when the public holds more money and /or banks hold more excess reserves.

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Question 3

5 points (1+1+2+1)

(a) 1 point:

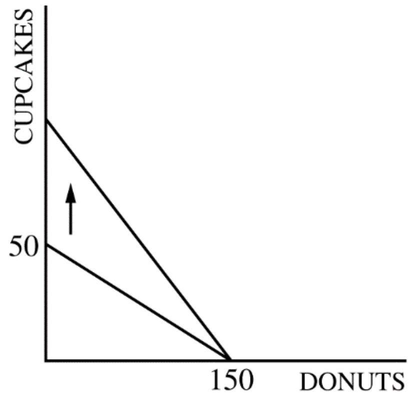
- One point is earned for stating that John has the absolute advantage in producing donuts and for explaining that John can produce more donuts than Erica in one day (200>150).

(b) 1 point:

- One point is earned for stating that Erica has a comparative advantage in producing donuts and for explaining that Erica's opportunity cost of producing one donut (1/3 of a cupcake) is less than John's opportunity cost of producing one donut (1/2 of a cupcake).

(c) 2 points:

- One point is earned for indicating that John will benefit from specialization and trade.
- One point is earned for indicating that Erica will not benefit from specialization and trade.



(d) 1 point:

- One point is earned for drawing a correctly labeled graph of Erica's production possibilities curve, before the technology change, and for rotating the production possibilities curve outward showing greater production of cupcakes after the technology change.