2024

AP® Macroeconomics

Sample Student Responses and Scoring Commentary Set 2

Inside:

Free-Response Question 1

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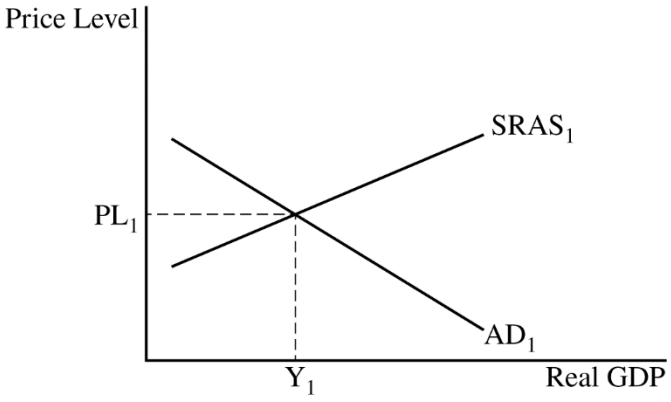
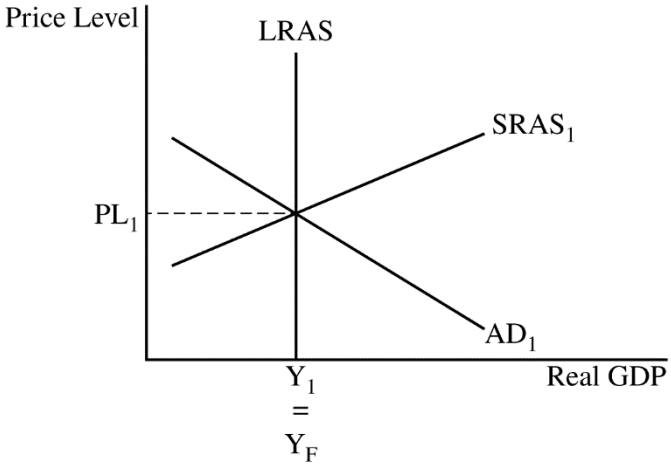
Question 1: Long — 10 points

(a) Draw a correctly labeled aggregate demand–aggregate supply graph that shows PL_1 and Y_1 at the intersection of 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**

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

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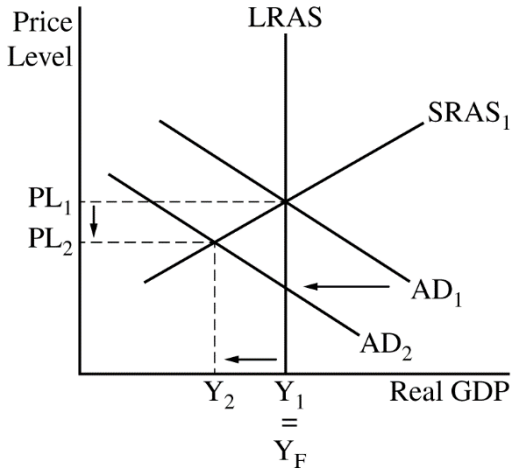
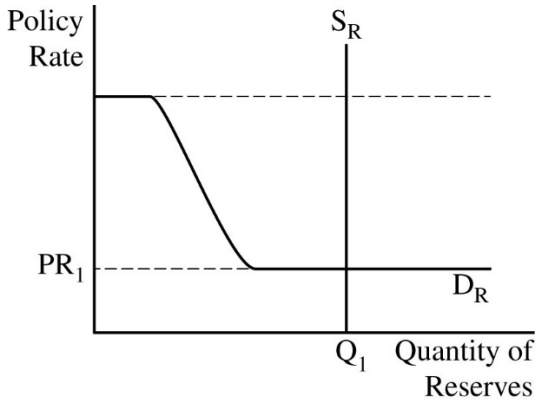
(ii)	On the graph from part (a), show the short-run effect of the decrease in consumer spending as a leftward shift of the AD curve, resulting in a decrease in the price level to PL_2 and a decrease in real output to Y_2.	**1 point**



	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**



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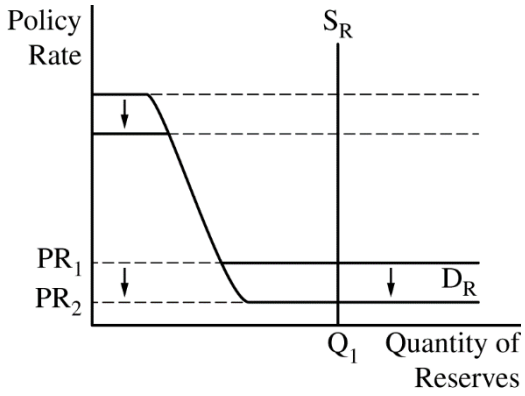
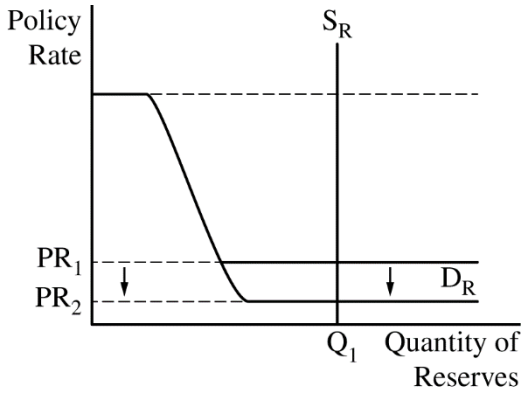
	For the second point, the graph must show a decrease in the administered interest rates, resulting in a decrease in the policy rate.	**1 point**



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.



	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**

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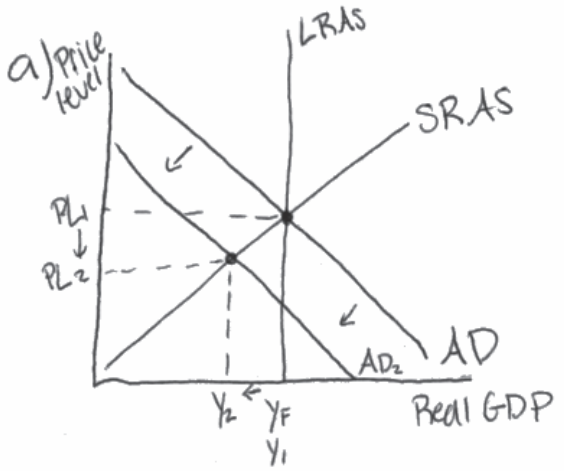
Important: Completely fill in the circle that corresponds to the question you are answering on this page.

Question 1 ● **Question 2** ○ **Question 3** ○

Begin your response to each question at the top of a new page.

a)



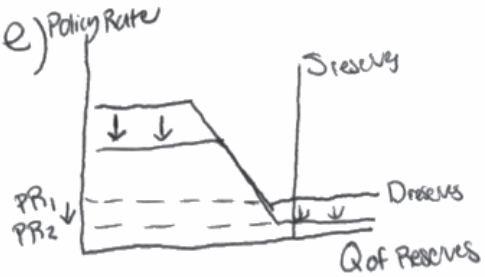
b) i) $\frac{\Delta \text{Spending}}{\Delta \text{income}} \rightarrow \frac{110{,}000-100{,}000}{135{,}000-110{,}000} = \frac{10{,}000}{25{,}000} = 0.4$

MPC = 0.4

c) In the long run without any policy actions the SRAS curve will shift to the right until it intersects with the new AD curve and LRAS, because prices and wages will adjust to the change in the long run.

d) With ample reserves the central bank of MoneyLand could decrease administered interest rates.

e)



Use a pen with black or dark blue ink only. Do NOT write your name. Do NOT write outside the box.

● **Important:** Completely fill in the circle that corresponds to the question you are answering on this page.

Question 1 ● **Question 2** ○ **Question 3** ○

Begin your response to each question at the top of a new page.

f)

I) national savings will decrease

II) Unemployment will decrease because consumer spending on interest sensitive goods will increase and investment spending, therefore AD will increase and a shift right in AD will cause the point to shift up the short run Philips curve, making the unemployment rate lower.

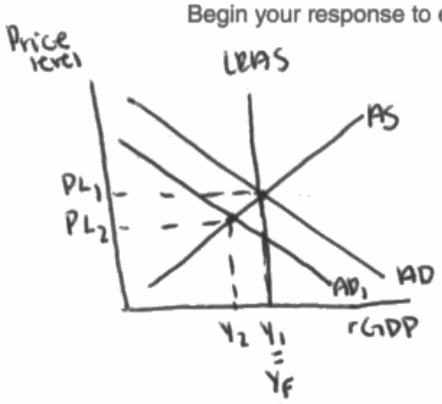
Use a pen with black or dark blue ink only. Do NOT write your name. Do NOT write outside the box.

Important: Completely fill in the circle that corresponds to the question you are answering on this page.

Question 1 ● **Question 2** ○ **Question 3** ○

Begin your response to each question at the top of a new page.

a)



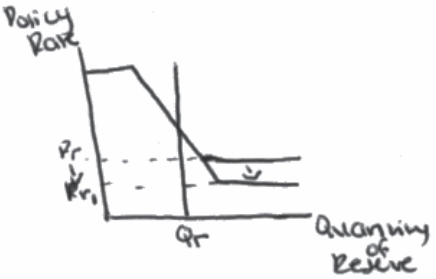
b)

i. $\frac{100,000 - 110,000}{100,000} = -0.1 = 0.1$

c) In the absence of any policy actions, the economy would self adjust as the aggregate supply curve would shift right because people will start working for less money, meaning more individuals can get hired, innately causing supply to increase.

d) Decrease interest on reserves

e)



Page 2

Use a pen with black or dark blue ink only. Do NOT write your name. Do NOT write outside the box.

Important: Completely fill in the circle that corresponds to the question you are answering on this page.

Question 1	Question 2	Question 3
●	○	○

Begin your response to each question at the top of a new page.

f)

i. decrease quantity of national saving

ii. Unemployment rate decreases because output is increasing

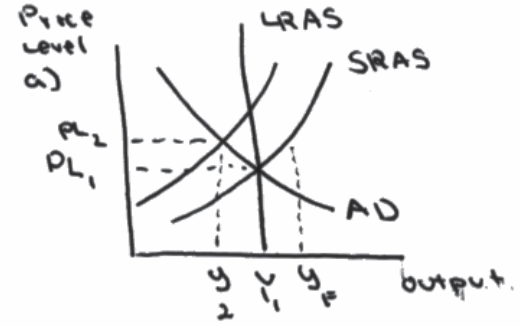
Use a pen with black or dark blue ink only. Do NOT write your name. Do NOT write outside the box.

Important: Completely fill in the circle that corresponds to the question you are answering on this page.

Question 1 ● Question 2 ○ Question 3 ○

Begin your response to each question at the top of a new page.

a)



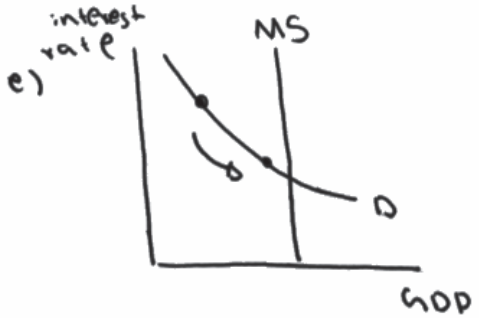
b) 0.9 = MPC

↳ $100,000 / $110,000

c) As the price level increases, interest rates will fall leading to more spending, thus SRAS will shift left.

d) A monetary policy they can take is to increase government spending, shifting SRAS to the right.

e)



f) i) savings decrease

ii) unemployment will go down as interest rates are lower.

Use a pen with black or dark blue ink only. Do NOT write your name. Do NOT write outside the box.

Question 1

Note: Student samples are quoted verbatim and may contain spelling and grammatical errors.

Overview

The question examined students' understanding of the aggregate demand–aggregate supply model, self-adjustment to full employment in the long run, and the effects of monetary policy in a banking system with ample reserves on the reserve market, the quantity of national savings, and unemployment.

The question begins by telling students to assume that the hypothetical economy of Moneyland is in equilibrium with an actual unemployment rate equal to the natural rate of unemployment.

In part (a) students are asked to draw a correctly labeled graph of the aggregate demand, short-run aggregate supply, and long-run aggregate supply curves, show (i) the current equilibrium real output and price level, labeled Y_1 and PL_1, respectively, and (ii) the full-employment output, labeled Y_F.

In part (b) students are told that consumer spending in Moneyland decreased from $110,000 to $100,000 as a result of a decrease in disposable income from $135,000 to $110,000. Students are asked (i) to calculate the marginal propensity to consume in Moneyland and to show their work and (ii) to show the short-run effect of the decrease in consumer spending in Moneyland on the graph in part (a), labeling the new equilibrium real output and price level Y_2 and PL_2, respectively.

In part (c) students are asked to explain how Moneyland's economy would adjust in the long run in the absence of any policy actions.

In part (d) students are told to assume that the central bank of Moneyland is concerned about the short-run effects of the decrease in consumer spending on the broader economy and is considering taking action rather than waiting for the long-run adjustment process. Students are further told to assume that the banking system in Moneyland has ample reserves. Students are then asked to identify a specific monetary policy action the central bank of Moneyland would take to increase consumer spending.

In part (e) students are asked to draw a correctly labeled graph of the reserve market in Moneyland, and show the effect of the monetary policy action identified in part (d) on the policy rate.

Finally, in part (f), based on the change in the policy rate shown in part (e), students are asked what will happen to (i) the quantity of national savings and (ii) unemployment and to explain.

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Question 1 (continued)

Sample: 1A
Score: 9

The response earned the first point in part (a) for drawing a correctly labeled aggregate demand-aggregate supply graph showing PL_1 and Y_1 at the intersection of AD and SRAS. The response earned the second point in part (a) for correctly showing a vertical LRAS curve at equilibrium real output $Y_1=Y_F$. The response earned 1 point in part (b)(i) for calculating the marginal propensity to consume as 0.4 and showing the work. The response earned 1 point in part (b)(ii) for showing a leftward shift of the AD curve, resulting in a decrease in the equilibrium price level and real output. The response did not earn the point in part (c) because it does not explain that input prices and nominal wages will decrease. The response earned 1 point in part (d) because it correctly states that the central bank would decrease its administered interest rates. The response earned the first point in part (e) because it shows a correctly labeled graph of the reserve market with the supply curve intersecting the demand curve in the range of ample reserves. The response earned the second point in part (e) because it correctly shows a decrease in the administered interest rates, resulting in a decrease in the policy rate. The response earned the first point in part (f) for correctly stating that the quantity of national savings will decrease, and the unemployment rate will decrease. The response earned the second point in part (f) because it correctly explains that the decrease in nominal interest rates will increase interest-sensitive spending, causing an increase in aggregate demand.

Sample: 1B
Score: 6

The response earned the first point in part (a) for drawing a correctly labeled aggregate demand-aggregate supply graph showing PL_1 and Y_1 at the intersection of AD and SRAS. The response earned the second point in part (a) for correctly showing a vertical LRAS curve at equilibrium real output $Y_1=Y_F$. The response did not earn the point in part (b)(i) because the calculation for the marginal propensity to consume is incorrect. The response earned 1 point in part (b)(ii) for showing a leftward shift of the AD curve, resulting in a decrease in the equilibrium price level and real output. The response earned 1 point in part (c) for correctly explaining that nominal wages will decrease, causing SRAS to increase. The response earned 1 point in part (d) because it correctly states that the central bank would decrease interest on reserves. The response did not earn the first point in part (e) because it does not draw a correctly labeled graph of the reserve market. The supply and demand curves are unlabeled, and the supply curve is not intersecting the demand curve in the range of ample reserves. The response did not earn the second point in part (e) because it does not show a decrease in the lower bound of a correctly labeled demand curve for reserves. The response earned the first point in part (f) for correctly stating that the quantity of national savings will decrease, and the unemployment rate will decrease. The response did not earn the second point in part (f) because it does not 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.

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Question 1 (continued)

Sample: 1C
Score: 2

The response earned the first point in part (a) for drawing a correctly labeled aggregate demand-aggregate supply graph showing PL_1 and Y_1 at the intersection of AD and SRAS. The response did not earn the second point in part (a) because it does not show a vertical LRAS curve at equilibrium real output $Y_1=Y_F$. The response did not earn the point in part (b)(i) because the calculation for the marginal propensity to consume is incorrect. The response did not earn the point in part (b)(ii) for not showing a leftward shift of the AD curve. The response did not earn the point in part (c) because it does not explain that input prices (e.g., nominal wages) and/or inflationary expectations will decrease, causing SRAS to increase. The response did not earn the point in part (d) because it incorrectly states that the central bank would increase government spending. The response did not earn the first point in part (e) because it did not draw a correctly labeled graph of the reserve market. The response did not earn the second point in part (e) because it does not show a decrease in the lower bound of the demand curve for reserves, resulting in a decrease in the policy rate. The response earned the first point in part (f) for correctly stating that the quantity of national savings will decrease, and the unemployment rate will decrease. The response did not earn the second point in part (f) because it does not 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.

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