

2022

AP<sup>®</sup>

 CollegeBoard

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# AP<sup>®</sup> Macroeconomics

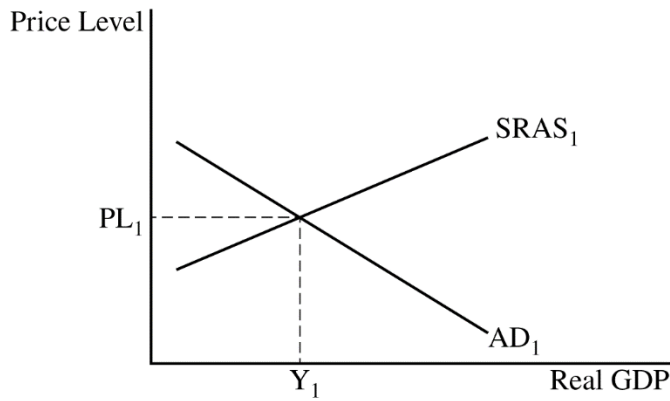
## Scoring Guidelines

### Set 1

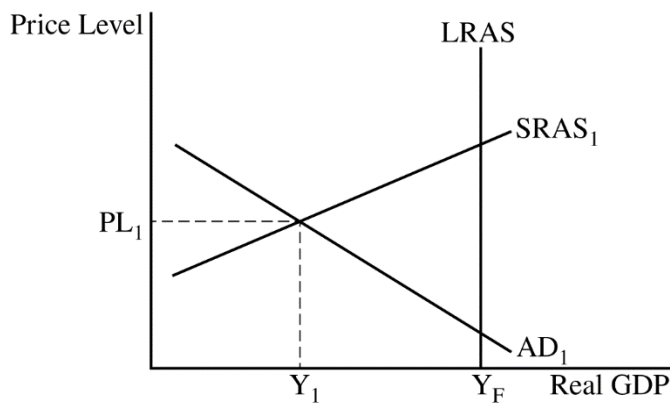
**Question 1: Long**

**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**



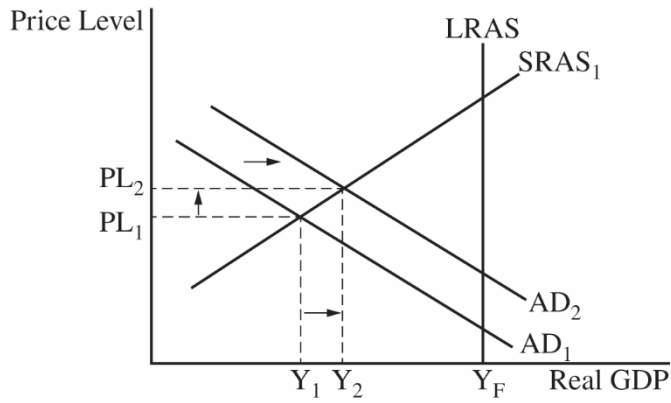
**Total for part (a) 2 points**

- (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**

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

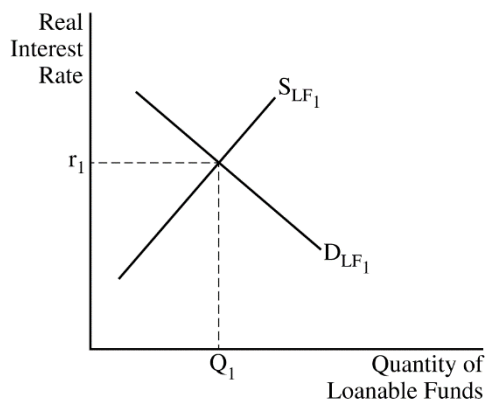
- (d)** On the graph from part (a), show the short-run effect of the change in investment spending as a rightward shift of the aggregate demand curve, resulting in a higher equilibrium price level and higher equilibrium real output that is less than full-employment output, labeled  $PL_2$  and  $Y_2$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

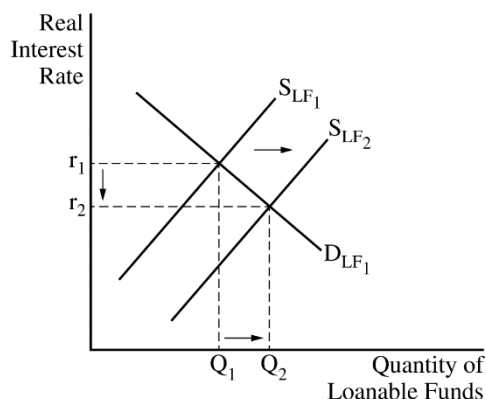
(f) Draw a correctly labeled graph of the loanable funds market.

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

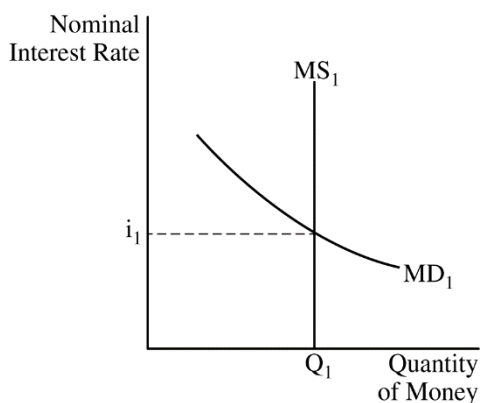
Total for question 1 10 points

**Question 2: Short****5 points**

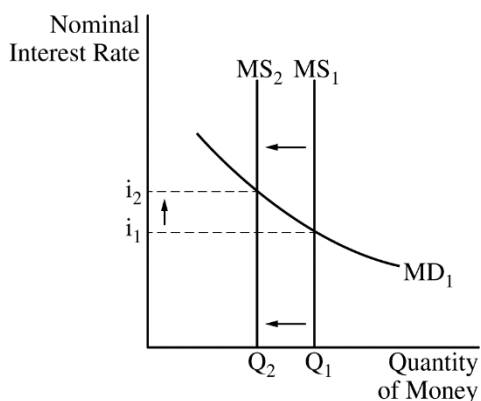
- (a) Calculate the maximum change in the money supply as a decrease of \$500,000 and show your work. **1 point**

$$\text{Change in MS} = \text{Bond Sale} \times \text{Money Multiplier} = -\$100,000 \times \frac{1}{0.2} = -\$500,000$$

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



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

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

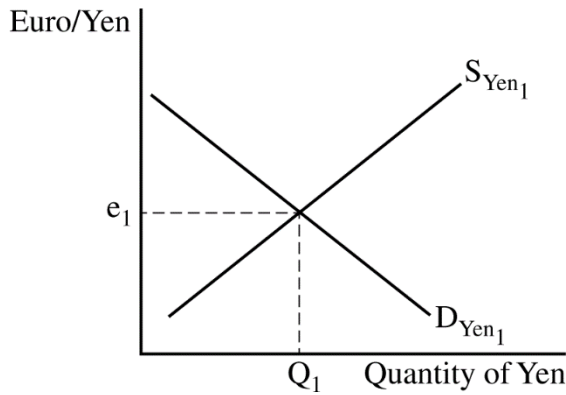
- (c) State that nominal gross domestic product will decrease and explain that according to the quantity theory of money ( $MV=PY$ ), a decrease in the money supply will decrease nominal gross domestic product for a given velocity. **1 point**
- (d) State that the price level decreases. **1 point**

**Total for question 2 5 points**

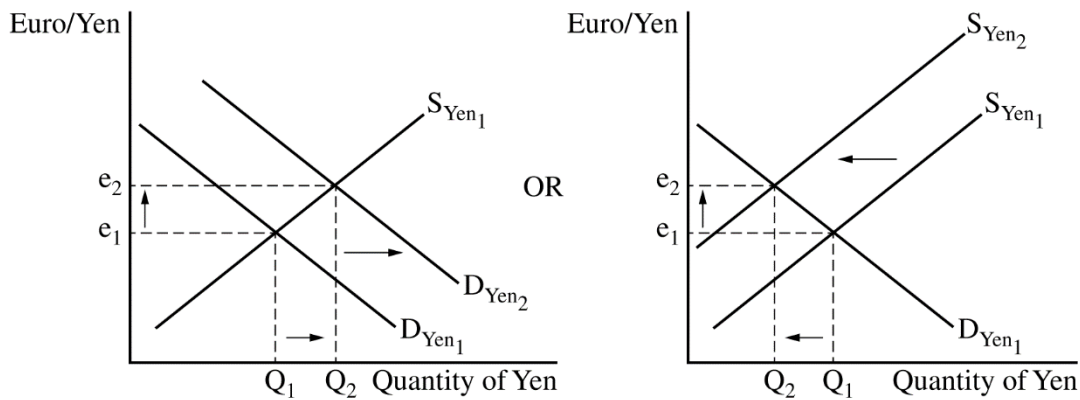
**Question 3: Short**

**5 points**

- (a) State that the price of the coat is 12,000 yen. **1 point**
- (b) State that net financial capital flows from Italy to Japan will increase. **1 point**
- (c) Draw a correctly labeled graph of the foreign exchange market for the Japanese yen. **1 point**



For the second point, the graph must show a rightward shift in the demand curve for yen (or a leftward shift in the supply curve of yen), resulting in an appreciation of the yen. **1 point**



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

- (d) State that Italy’s exports will increase and explain that the appreciation of the yen makes Italian goods relatively less expensive than Japanese goods and/or makes Japanese goods relatively more expensive than Italian goods. **1 point**

**Total for question 3 5 points**