

2. Assume that commercial banks must hold a minimum of 20% of their deposits as reserves. Now suppose that the central bank of the country sells \$100,000 of government bonds to commercial banks.
- (a) Calculate the maximum change and state the direction of change in the money supply as a result of the central bank bond sale. Show your work.
- (b) Draw a correctly labeled graph of the money market and show the effect of the change in the money supply identified in part (a) on the nominal interest rate.
- (c) Given the change in the money supply in part (a), if the velocity of money is constant, what will happen to the nominal gross domestic product? Explain.
- (d) Based on the change in the nominal gross domestic product in part (c), what happens to the price level if the real gross domestic product is constant?

**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.**

3. Italy and Japan are trading partners and have flexible exchange rates. The Italian currency is the euro and the Japanese currency is the yen.
- (a) Suppose that the exchange rate between the euro and the yen is 1 euro = 100 yen. What is the price of an Italian coat in yen if the coat costs 120 euros in Italy?
- (b) Assume that real interest rates increase in Japan. Identify what will happen to net financial capital flows between Italy and Japan.
- (c) Draw a correctly labeled graph of the foreign exchange market for the yen and show the effect of the increase in real interest rates in Japan on the value of the yen.
- (d) Based solely on the change in the exchange rate identified in part (c), what will happen to Italy's exports to Japan? Explain.

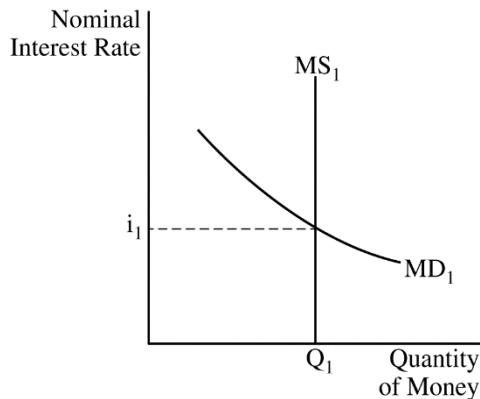
Begin your response to this question at the top of a new page in the separate Free Response booklet and fill in the appropriate circle at the top of each page to indicate the question number.

Question 2: Short**5 points**

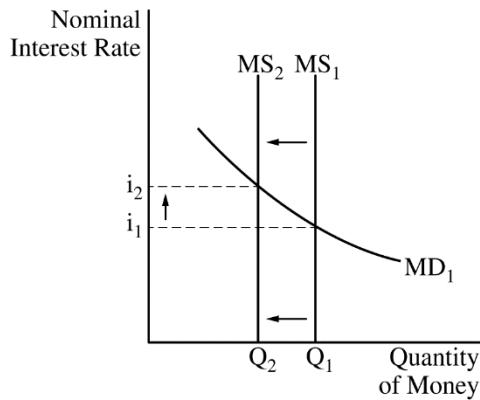
- (a) Calculate the maximum change in the money supply as a decrease of \$500,000 and show your work. **1 point**

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

- (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