1. Assume that the United States economy is currently in a short-run equilibrium with the actual unemployment rate above the natural rate of unemployment.

   (a) Draw a single correctly labeled graph with both the long-run Phillips curve and short-run Phillips curve. Label the current short-run equilibrium point P.

   (b) Assuming no policy actions are taken, will the short-run Phillips curve shift to the right (upward), shift to the left (downward), or remain the same in the long run? Explain.

   (c) If the Federal Reserve Bank wants to lower unemployment, what expansionary open-market operation should it use?

   (d) How will the open-market operation you identified in part (c) affect each of the following?

      (i) Federal funds rate. Explain.

      (ii) Real interest rate in the short run.

   (e) Given your answer in part (d)(ii), what is the effect on real gross domestic product (GDP) in the short run? Explain.

   (f) Japan and the United States are major trading partners. Indicate how the change in real GDP you identified in part (e) will affect the demand for the Japanese yen in the foreign exchange market.

   (g) Draw a correctly labeled graph of the foreign exchange market for the Japanese yen, showing the effect of the change in demand identified in part (f) on the value of the Japanese yen relative to the United States dollar.
2. The following is the balance sheet of First Superior Bank.

<table>
<thead>
<tr>
<th>Assets</th>
<th>Liabilities and Equity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reserves</td>
<td>Demand deposits</td>
</tr>
<tr>
<td>$200</td>
<td>$2,000</td>
</tr>
<tr>
<td>Loans</td>
<td>Equity (net worth)</td>
</tr>
<tr>
<td>$1,800</td>
<td>$0</td>
</tr>
</tbody>
</table>

Assume that the required reserve ratio is 10 percent.

(a) What is the dollar value of new loans that First Superior Bank can make? Explain.

(b) Mr. Smith deposits $100 of cash in a demand deposit account in First Superior Bank. Calculate the maximum amount of new loans that First Superior Bank can now make.

(c) As a result of Mr. Smith’s $100 cash deposit, calculate the maximum change over time in each of the following in the banking system.
   (i) Loans
   (ii) Demand deposits

(d) As a result of Mr. Smith’s $100 cash deposit, calculate the maximum change over time in the money supply.

(e) Provide one reason why the actual change in money supply can be smaller than the maximum change you identified in part (d).

3. The following table shows the number of donuts or cupcakes that John and Erica can each produce in one day.

<table>
<thead>
<tr>
<th></th>
<th>Donuts</th>
<th>Cupcakes</th>
</tr>
</thead>
<tbody>
<tr>
<td>John</td>
<td>200</td>
<td>100</td>
</tr>
<tr>
<td>Erica</td>
<td>150</td>
<td>50</td>
</tr>
</tbody>
</table>

(a) Who has the absolute advantage in producing donuts? Explain.

(b) Who has the comparative advantage in producing donuts? Explain.

(c) Assume that John and Erica decide to specialize according to their comparative advantages and that one cupcake is exchanged for four donuts.
   (i) Indicate whether or not specialization and trade are beneficial to John.
   (ii) Indicate whether or not specialization and trade are beneficial to Erica.

(d) Assume that Erica discovers a new cupcake production technique that will increase her daily production of cupcakes only. Using donuts on the horizontal axis, draw a correctly labeled production possibilities curve for Erica, before and after the technology change in cupcake production.