Redox Titration Report Form

Name__________________________________

Attach:
A copy of the titration curve for one of your runs
A copy of the second-derivative curve for that titration curve

Complete the table:

<table>
<thead>
<tr>
<th>Trial</th>
<th>Volume of Fe^{2+} solution taken (mL)</th>
<th>Volume of Ce^{4+} solution needed to reach equivalence point (mL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Indicate the molarity of the standard Ce^{4+} solution you used. Then calculate the number of moles of Ce^{4+} used to reach the equivalence point.

2. Calculate the number of moles of iron in the ferrous ammonium sulfate sample you titrated.

3. Calculate the molarity of the ferrous ammonium sulfate solution.

4. The ferrous ammonium sulfate solution you used was prepared by dissolving 40.0 g of solid (NH₄)₂Fe(SO₄)₃·6H₂O in 1.00 L of solution. This substance is often impure.
   a. Calculate the theoretical percent by mass of iron in a pure sample of (NH₄)₂Fe(SO₄)₃·6H₂O.

   b. Calculate the percentage by mass of iron in the sample you titrated.

   c. Calculate the percentage difference between your experimental percentage and the theoretical percentage. Then calculate the purity (as a percentage) of the sample you titrated.