1. Consider the voltaic cell Fe | Fe^{2+} (1 M) || Cu^{2+} (1 M) | Cu
   a. What two reactions occur in this voltaic cell?
   b. Using Appendix E or Table 20.1 of your textbook, find the standard reduction potential of each reaction.
   c. Calculate the standard cell potential.

2. The following data were obtained for the voltaic cell:
   Pb | Pb^{2+} (1 M) || Cu^{2+} (1 M) | Cu
   a. Convert the measured cell potentials into ΔG at each temperature.
   b. If you were to plot ΔG versus T (in Kelvin), the value of the y-intercept is equal to what thermodynamic property? The slope of the graph is equal to what thermodynamic property?

<table>
<thead>
<tr>
<th>Measured Cell Potential (V)</th>
<th>Temperature (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.464</td>
<td>25</td>
</tr>
<tr>
<td>0.468</td>
<td>35</td>
</tr>
<tr>
<td>0.473</td>
<td>45</td>
</tr>
</tbody>
</table>