

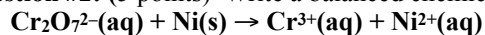
Be sure to show all work, use the correct number of significant figures, circle final answers and use correct units in all problems.

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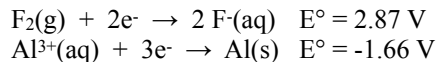
**Question #1:** (5 points) One kind of battery used in watches contains mercury(II) oxide. As current flows, the mercury(II) oxide is reduced to mercury:  $\text{HgO(s)} + \text{H}_2\text{O(l)} + 2 \text{e}^- \rightarrow \text{Hg(l)} + 2 \text{OH}^-\text{(aq)}$

If  $2.3 \times 10^{-5}$  amperes flows continuously for 1200 days, what mass of Hg(l) is produced?

**Question #2:** (5 points) Write a balanced chemical equation for the following reaction in an **acidic** solution.



**Question #3:** (10 points) Write a balanced spontaneous reaction using the following electrochemical values and calculate the  $E_{\text{cell}}$  potential in volts.



**Answers**

Be sure to show all work, use the correct number of significant figures, circle final answers and use correct units in all problems.

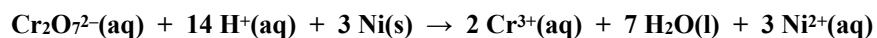
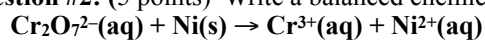
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**2.5 g**

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