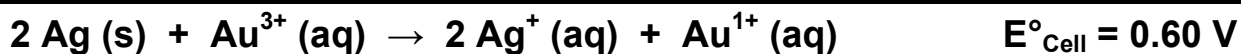
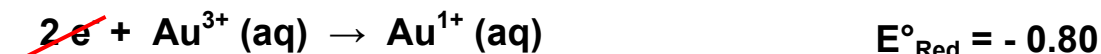
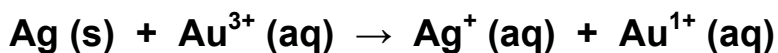
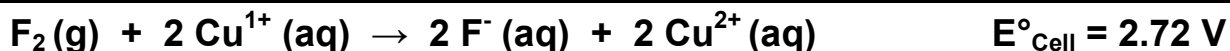
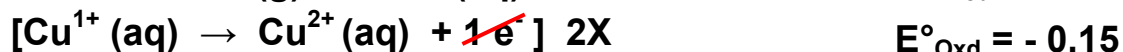
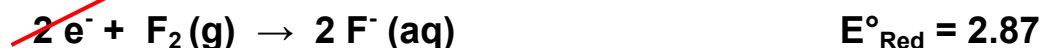
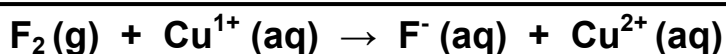


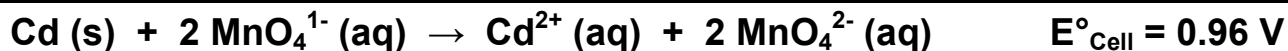
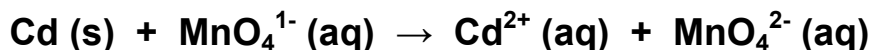
Balance the following redox reactions (in acidic solution) using the half-reaction method. In addition, determine whether the reaction is spontaneous as written using the standard reduction potentials of the half reactions (these are in Appendix D of your book!).



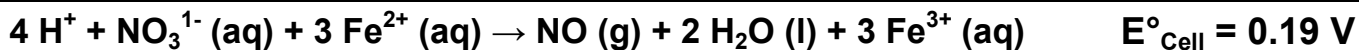
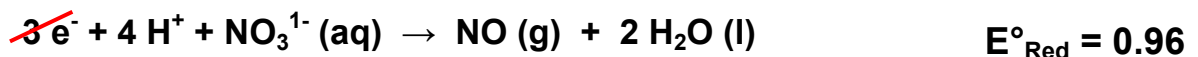
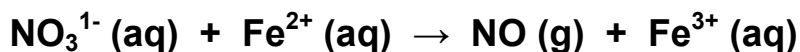
$E^\circ_{\text{Cell}} > 0$ Spontaneous 



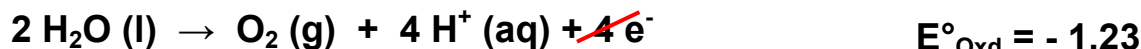
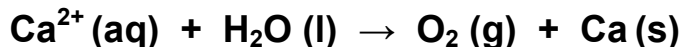
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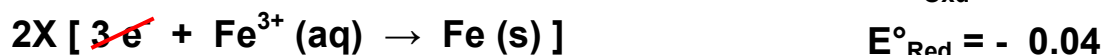
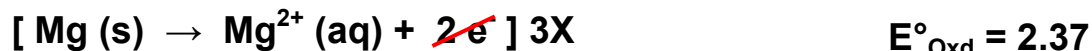
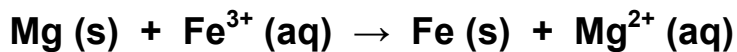
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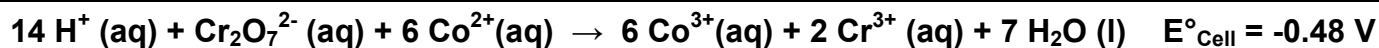
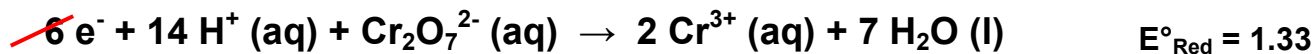
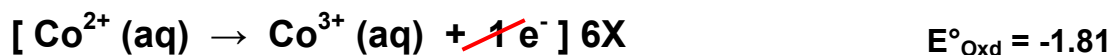
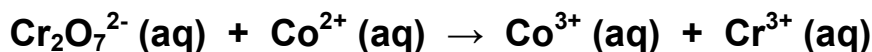
$E^\circ_{\text{Cell}} > 0$ Spontaneous 



$E^\circ_{\text{Cell}} < 0$ Non-Spontaneous 



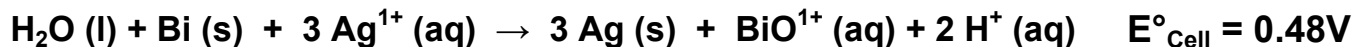
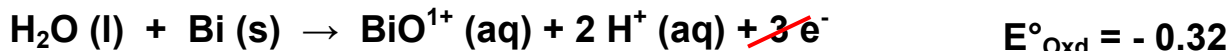
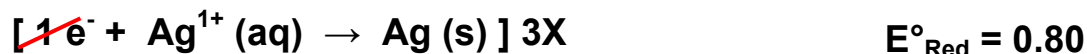
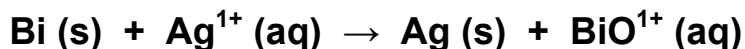
$E^\circ_{\text{Cell}} > 0$ Spontaneous 



$E^\circ_{\text{Cell}} < 0$ Non-Spontaneous




$E^\circ_{\text{Cell}} > 0$ Spontaneous

$E^\circ_{\text{Cell}} > 0$ Spontaneous

