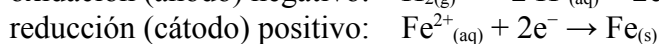
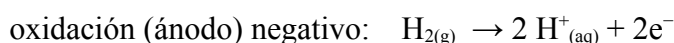
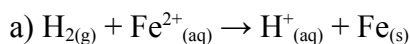
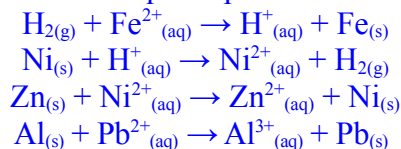
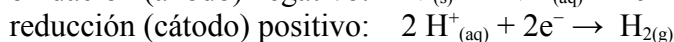
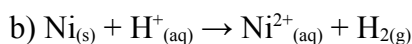


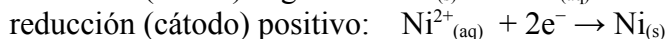
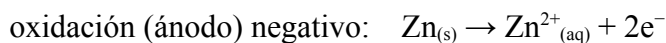
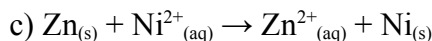
Problema717: Utilizando la tabla de potenciales normales, di si las siguientes reacciones son espontáneas. En el caso de usarlas para hacer una pila calcula el valor de E° de la pila, indicando la polaridad de los electrodos y la semirreacción que se produce en cada uno de los electrodos.



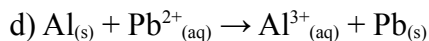
$E^\circ_{\text{pila}} = E^\circ_{\text{cat}} - E^\circ_{\text{án}} = E^\circ_{\text{Fe}^{2+}/\text{Fe}} - E^\circ_{\text{H}^+/\text{H}_2} = -0,44 - (0,00) = -0,44\text{V}$
 dado que $\Delta G^\circ = -n \cdot F \cdot E^\circ_{\text{pila}}$ la reacción no será espontánea, pues $\Delta G^\circ > 0$.



$E^\circ_{\text{pila}} = E^\circ_{\text{cat}} - E^\circ_{\text{án}} = E^\circ_{\text{H}^+/\text{H}_2} - E^\circ_{\text{Ni}^{2+}/\text{Ni}} = 0,00 - (-0,25) = +0,25\text{V}$
 dado que $\Delta G^\circ = -n \cdot F \cdot E^\circ_{\text{pila}}$ la reacción será espontánea, pues $\Delta G^\circ < 0$.



$E^\circ_{\text{pila}} = E^\circ_{\text{cat}} - E^\circ_{\text{án}} = E^\circ_{\text{Ni}^{2+}/\text{Ni}} - E^\circ_{\text{Zn}^{2+}/\text{Zn}} = -0,25 - (-0,76) = +0,51\text{V}$
 dado que $\Delta G^\circ = -n \cdot F \cdot E^\circ_{\text{pila}}$ la reacción será espontánea, pues $\Delta G^\circ < 0$.



$E^\circ_{\text{pila}} = E^\circ_{\text{cat}} - E^\circ_{\text{án}} = E^\circ_{\text{Pb}^{2+}/\text{Pb}} - E^\circ_{\text{Al}^{3+}/\text{Al}} = -0,13 - (-1,66) = +1,53\text{V}$
 dado que $\Delta G^\circ = -n \cdot F \cdot E^\circ_{\text{pila}}$ la reacción será espontánea, pues $\Delta G^\circ < 0$.