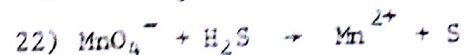
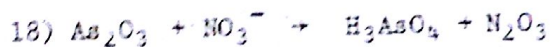


33. Bilanciare le seguenti equazioni di ossidoriduzione. Tutte le reazioni sono in soluzione acida.

- 1) $\text{Cu} + \text{NO}_3^- \rightarrow \text{Cu}^{2+} + \text{NO}$
- 2) $\text{Zn} + \text{NO}_3^- \rightarrow \text{Zn}^{2+} + \text{NH}_4^+$
- 3) $\text{Cr} + \text{H}^+ \rightarrow \text{Cr}^{3+} + \text{H}_2$
- 4) $\text{Cr}_2\text{O}_7^{2-} + \text{H}_3\text{AsO}_3 \rightarrow \text{Cr}^{3+} + \text{H}_3\text{AsO}_4$
- 5) $\text{I}^- + \text{SO}_4^{2-} \rightarrow \text{I}_2 + \text{H}_2\text{S}$
- 6) $\text{Ag}^+ + \text{AsH}_3 \rightarrow \text{H}_3\text{AsO}_4 + \text{Ag}$
- 7) $\text{Cu} + \text{Cl}^- + \text{As}_4\text{O}_6 \rightarrow \text{CuCl} + \text{As}$
- 8) $\text{MnO}_2 + \text{Br}^- \rightarrow \text{Br}_2 + \text{Mn}^{2+}$
- 9) $\text{S}_2\text{O}_3^{2-} + \text{I}_2 \rightarrow \text{I}^- + \text{S}_4\text{O}_6^{2-}$
- 10) $\text{IO}_3^- + \text{SO}_3^{2-} \rightarrow \text{I}^- + \text{SO}_4^{2-}$
- 12) $\text{NO}_2 \rightarrow \text{NO}_3^- + \text{NO}$



34. Bilanciare le seguenti equazioni di ossidoriduzione. Tutte le reazioni sono in soluzione basica.

