Oxidation numbers: Book-keeping for electron transfers

1. The oxidation number of any ***free*** element is zero.
2. The oxidation number of any simple, ***monoatomic*** ion is equal to the charge on the ion.
3. The ***sum*** of all oxidation numbers of the atoms in a molecule or polyatomic ion ***must equal the charge on the particle***.
4. In its compounds, ***fluorine*** has an oxidation number of ***–1***.
5. In its compounds, ***hydrogen*** has an oxidation number of ***+1***.
6. In its compounds, ***oxygen*** has an oxidation number of ***–2***.

Can there ever be a conflict?

- If there's a conflict between two rules:
- ***apply the rule with the lower number and ignore the conflicting rule***
- Note:
  - In binary ionic compounds with metals, the nonmetals have oxidation numbers equal to the charges on their anions