## Oxidation - Reduction

1. Indicate the oxidation number of each atom in the following:

2. Consider the following reaction:
$\mathrm{Zn}(\mathrm{s})+\mathrm{HCl}(\mathrm{aq}) \rightarrow \mathrm{ZnCl}_{2}(\mathrm{aq})+\mathrm{H}_{2}(\mathrm{~g})$
a) What has been oxidized?
b) What has been reduced?
c) Which is the oxidizing agent?
d) Which is the reducing agent?
3. Which is the reducing agent in the following reaction?

$$
2 \mathrm{~S}_{2} \mathrm{O}_{3}{ }^{2-}(\mathrm{aq})+\mathrm{I}_{3}^{-}(\mathrm{aq}) \rightarrow \mathrm{S}_{4} \mathrm{O}_{6}^{2-}(\mathrm{aq})+3 \mathrm{I}^{-}(\mathrm{aq})
$$

