

Redox worksheet 5

name _____

Give the oxidation number for each indicated atom.

a. S in Na_2SO_3

+4

b. Mn in KMnO_4

+7

c. N in $\text{Ca}(\text{NO}_3)_2$

+5

d. C in Na_2CO_3

+4

e. N in NO_2

+4

f. S in HSO_4^-

+6

g. S in $\text{H}_2\text{S}_2\text{O}_7$

+6

h. S in Al_2S_3

-2

i. Mn in MnCl_2

+2

j. C in $\text{C}_{12}\text{H}_{22}\text{O}_{11}$

0

Oxidation and Reduction Agents Worksheet

For each of the following reactants, identify: the oxidizing agent, the reducing agent, the substance oxidized and the substance reduced

- a) $\text{Cu}^{2+}_{(\text{aq})} + \text{Zn}_{(\text{s})} \rightarrow \text{Cu}_{(\text{s})} + \text{Zn}^{2+}$
- | | | | |
|--------------------|-------|-------------------|-------|
| Substance oxidized | _____ | Substance reduced | _____ |
| Oxidizing agent | _____ | Reducing agent | _____ |
- b) $\text{Cl}_{2(\text{s})} + 2\text{Na}_{(\text{s})} \rightarrow 2\text{Na}^{+}_{(\text{aq})} + 2\text{Cl}^{-}_{(\text{aq})}$
- | | | | |
|--------------------|-------|-------------------|-------|
| Substance oxidized | _____ | Substance reduced | _____ |
| Oxidizing agent | _____ | Reducing agent | _____ |
- c) $\text{Au} + \text{Fe}^{3+} \rightarrow \text{Fe}^{2+} + \text{Au}^{3+}$
- | | | | |
|--------------------|-------|-------------------|-------|
| Substance oxidized | _____ | Substance reduced | _____ |
| Oxidizing agent | _____ | Reducing agent | _____ |
- d) $\text{Pb} + \text{Fe}^{3+} \rightarrow \text{Fe}^{2+} + \text{Pb}^{2+}$
- | | | | |
|--------------------|-------|-------------------|-------|
| Substance oxidized | _____ | Substance reduced | _____ |
| Oxidizing agent | _____ | Reducing agent | _____ |
- e) $\text{Cl}_2 + \text{F}^{-} \rightarrow \text{F}_2 + 2\text{Cl}^{-}$
- | | | | |
|--------------------|-------|-------------------|-------|
| Substance oxidized | _____ | Substance reduced | _____ |
| Oxidizing agent | _____ | Reducing agent | _____ |
- f) $\text{Al}^{3+} + \text{Zn} \rightarrow \text{Al} + \text{Zn}^{2+}$
- | | | | |
|--------------------|-------|-----------------|-------|
| Substance oxidized | _____ | Oxidizing agent | _____ |
|--------------------|-------|-----------------|-------|
- g) $\text{Cr}_2\text{O}_7^{2-} + \text{ClO}_2^{-} \rightarrow \text{Cr}^{3+} + \text{ClO}_4^{-}$
- | | | | |
|-------------------|-------|-----------------|-------|
| Substance reduced | _____ | Oxidizing agent | _____ |
|-------------------|-------|-----------------|-------|
- h) $\text{O}_3 + \text{SO}_2 + \text{H}_2\text{O} \rightarrow \text{SO}_4^{2-} + \text{O}_2 + 2\text{H}^{+}$
- | | | | |
|--------------------|-------|----------------|-------|
| Substance oxidized | _____ | Reducing agent | _____ |
|--------------------|-------|----------------|-------|
- i) $3\text{As}_2\text{O}_3 + 4\text{NO}_3^{-} + 7\text{H}_2\text{O} + 4\text{H}^{+} \rightarrow 6\text{H}_3\text{AsO}_4 + 4\text{NO}$
- | | | | |
|-------------------|-------|----------------|-------|
| Substance reduced | _____ | Reducing agent | _____ |
|-------------------|-------|----------------|-------|

Oxidation and Reduction Agents Worksheet

For each of the following reactants, identify: the oxidizing agent, the reducing agent, the substance oxidized and the substance reduced



