

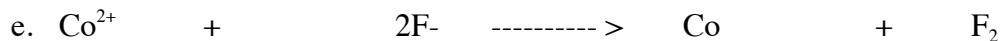
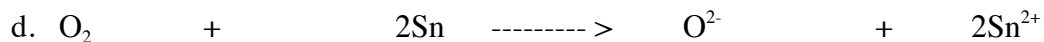
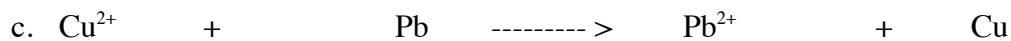
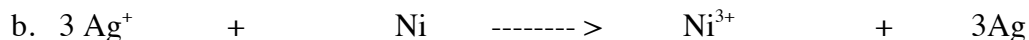
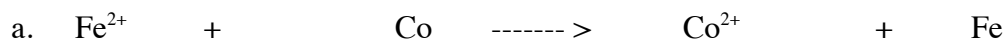
Name \_\_\_\_\_ Block: \_\_\_\_\_ Date: \_\_\_\_\_

Chemistry 12  
**INTRO TO REDOX REACTIONS**

1. Define the following:

- a. Oxidation
- b. Reduction
- c. Oxidizing Agent
- d. Reducing Agent

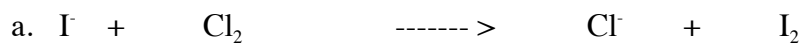
2. Label the species that is reduced, that is oxidized, the reducing agent and the oxidizing agent.



3. In question 2a, which species loses electrons? \_\_\_\_\_

4. In question 2b, which species gains electrons? \_\_\_\_\_

5. In each of the following reactions, identify the oxidizing agent and the reducing agent.



Oxidizing agent \_\_\_\_\_ Reducing agent \_\_\_\_\_



Oxidizing agent \_\_\_\_\_ Reducing agent \_\_\_\_\_

6. State the oxidation number of each of the elements that is underlined.

- |                                   |                                   |                                   |
|-----------------------------------|-----------------------------------|-----------------------------------|
| a) $\underline{N}H_3$ _____       | i) $K_2\underline{S}O_4$ _____    | q) $K_2\underline{Cr}_2O_7$ _____ |
| b) $Zn\underline{S}O_3$ _____     | j) $Na_2\underline{O}_2$ _____    | r) $\underline{N}H_4^+$ _____     |
| c) $\underline{Na}$ _____         | k) $Na\underline{I}O_3$ _____     | s) $\underline{Fe}O$ _____        |
| d) $Ag\underline{N}O_3$ _____     | l) $H_2\underline{S}O_4$ _____    | t) $\underline{Si}O_4^{4-}$ _____ |
| e) $\underline{S}O_2$ _____       | m) $\underline{Al}(OH)_3$ _____   | u) $\underline{Cl}O_3^-$ _____    |
| f) $\underline{H}PO_3^{2-}$ _____ | n) $\underline{Cl}_2$ _____       | v) $Na\underline{H}$ _____        |
| g) $\underline{Mn}O_2$ _____      | o) $\underline{Cl}O_4^-$ _____    |                                   |
| h) $\underline{Pb}O_2$ _____      | p) $K_2\underline{Cr}_2O_4$ _____ |                                   |

7. What is the oxidation number of carbon in each of the following substances?

- |                 |                      |
|-----------------|----------------------|
| a) $CO$ _____   | c) $C$ _____         |
| b) $CO_2$ _____ | d) $CO_3^{2-}$ _____ |

8. Determine if each of the following changes is oxidation, reduction or neither.

- |                      |                      |
|----------------------|----------------------|
| $SO_3^{2-}$ ----- >  | $SO_4^{2-}$ _____    |
| $CaO$ ----- >        | $Ca$ _____           |
| $CrO_4^{2-}$ ----- > | $Cr_2O_7^{2-}$ _____ |
| $CrO_4^{2-}$ ----- > | $Cr^{3+}$ _____      |
| $2I^-$ ----- >       | $I_2$ _____          |
| $IO_3^-$ ----- >     | $I_2$ _____          |
| $MnO_4^-$ ----- >    | $Mn^{2+}$ _____      |
| $ClO_2^-$ ----- >    | $ClO^-$ _____        |