

**WKS – Chem Honors**  
**Oxidation and Reduction (Redox)**

Name \_\_\_\_\_  
Period \_\_\_\_\_ Date \_\_\_\_\_

- 1) When a substance is oxidized, its charge (**increases, decreases**). Thus, when a substance is oxidized it (**gains, loses**) electrons.
- 2) When a substance is reduced, its charge (**increases, decreases**). Thus, when a substance is reduced it (**gains, loses**) electrons.
- 3) Label these changes as either oxidation or reduction:
- a)  $\text{Cu}^{2+}(\text{aq}) \rightarrow \text{Cu}^0(\text{s})$  \_\_\_\_\_ c)  $\text{Fe}^0(\text{s}) \rightarrow \text{Fe}^{3+}(\text{aq})$  \_\_\_\_\_  
b)  $\text{Cl}_2^0(\text{g}) \rightarrow \text{Cl}^-(\text{aq})$  \_\_\_\_\_ d)  $\text{Cr}^{3+}(\text{aq}) \rightarrow \text{Cr}^{6+}(\text{aq})$  \_\_\_\_\_
- 4) Put in all charges (oxidation numbers) in the following substances. (*Remember: The charge on pure elements is zero. Also, when H is in a compound, its charge is +1*)
- a) KCl      b) FeBr<sub>2</sub>      c) HCl      d) H<sub>2</sub>      e) CoI<sub>3</sub>      f) Na      g) Cl<sub>2</sub>
- 5) Put in all charges (oxidation numbers). Then indicate which substance is being oxidized, which is being reduced, and what their products are. [Remember LEO-GER!]
- a)  $\text{Cu}(\text{s}) + 2 \text{AgCl}(\text{aq}) \rightarrow \text{CuCl}_2(\text{aq}) + 2 \text{Ag}(\text{s})$   
Oxidized: \_\_\_\_\_ Product: \_\_\_\_\_  
Reduced: \_\_\_\_\_ Product: \_\_\_\_\_
- b)  $2 \text{Na}(\text{s}) + \text{Br}_2(\text{g}) \rightarrow 2 \text{NaBr}(\text{aq})$   
Oxidized: \_\_\_\_\_ Product: \_\_\_\_\_  
Reduced: \_\_\_\_\_ Product: \_\_\_\_\_
- c)  $\text{F}_2(\text{g}) + 2 \text{LiCl}(\text{aq}) \rightarrow 2 \text{LiF}(\text{aq}) + \text{Cl}_2(\text{g})$   
Oxidized: \_\_\_\_\_ Product: \_\_\_\_\_  
Reduced: \_\_\_\_\_ Product: \_\_\_\_\_
- 6) Complete these reactions, put in all charges (oxidation numbers) and then write the net ionic equation. (*Only write substances whose charges change, not spectator ions.*) Then indicate which substance is being oxidized, which is being reduced, and what their products are. [Remember LEO-GER!]
- a)  $\text{Zn}(\text{s}) + \text{CuBr}_2(\text{aq}) \rightarrow$   
**Net Ionic Eq:**  
  
Oxidized: \_\_\_\_\_ Product: \_\_\_\_\_  
Reduced: \_\_\_\_\_ Product: \_\_\_\_\_
- b)  $3 \text{Cl}_2(\text{g}) + 2 \text{FeI}_3(\text{aq}) \rightarrow$   
**Net Ionic Eq:**  
  
Oxidized: \_\_\_\_\_ Product: \_\_\_\_\_  
Reduced: \_\_\_\_\_ Product: \_\_\_\_\_