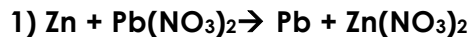


**For each of the following:**

- a) Assign oxidation numbers for each element/species;  
 b) Indicate the element/species, if any, that are oxidized and reduced.



	Charge: Increase/ Decrease	Electrons: Lost/ Gained	Oxidized or Reduced?



	Charge: Increase/ Decrease	Electrons: Lost/ Gained	Oxidized or Reduced?



	Charge: Increase/ Decrease	Electrons: Lost/ Gained	Oxidized or Reduced?

**Complete the following Question:**

1. Which reaction is an example of an oxidation-reduction reaction?

- (1)  $\text{AgNO}_3 + \text{KI} \rightarrow \text{AgI} + \text{KNO}_3$   
 (2)  $\text{Cu} + 2\text{AgNO}_3 \rightarrow \text{Cu}(\text{NO}_3)_2 + 2\text{Ag}$   
 (3)  $2\text{KOH} + \text{H}_2\text{SO}_4 \rightarrow \text{K}_2\text{SO}_4 + 2\text{H}_2\text{O}$   
 (4)  $\text{Ba}(\text{OH})_2 + 2\text{HCl} \rightarrow \text{BaCl}_2 + 2\text{H}_2\text{O}$

2. In an oxidation-reduction reaction, reduction is defined as the

- (1) loss of protons  
 (2) loss of electrons  
 (3) gain of protons  
 (4) gain of electron

3. When a lithium atom forms a  $\text{Li}^+$  ion, the lithium atom

- (1) gains a proton      (3) loses a proton  
 (2) gains an electron    (4) loses an electron

4. Which type of reaction occurs when nonmetal atoms become negative nonmetal ions?

- (1) oxidation      (3) substitution  
 (2) reduction     (4) condensation