Name __KEY__

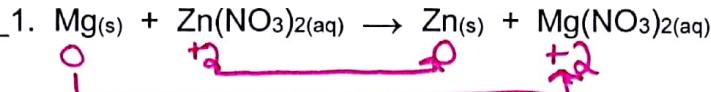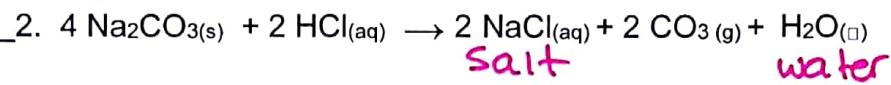## PREDICTING DRIVING FORCES WORKSHEET

Directions: for each of the following, identify driving force (REDOX or ACID/BASE)

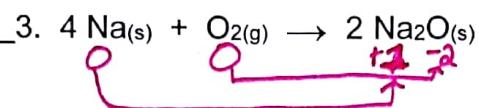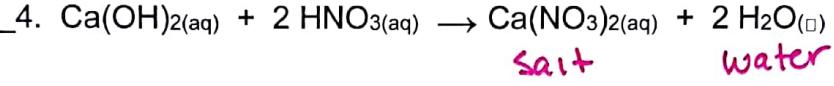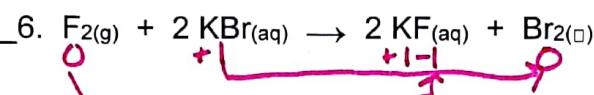__REDOX__ 1. $Mg_{(s)} + Zn(NO_3)_{2(aq)} \rightarrow Zn_{(s)} + Mg(NO_3)_{2(aq)}$

__Acid/Base__ 2. $4 Na_2CO_{3(s)} + 2 HCl_{(aq)} \rightarrow 2 NaCl_{(aq)} + 2 CO_{3 (g)} + H_2O_{(l)}$
salt   water

__REDOX__ 3. $4 Na_{(s)} + O_{2(g)} \rightarrow 2 Na_2O_{(s)}$

__Acid/Base__ 4. $Ca(OH)_{2(aq)} + 2 HNO_{3(aq)} \rightarrow Ca(NO_3)_{2(aq)} + 2 H_2O_{(l)}$
salt   water

__Acid/Base__ 5. $Na_2S_{(aq)} + 2 HCl_{(aq)} \rightarrow 2 NaCl_{(aq)} + 2 CO_{3 (g)} + H_2O_{(l)}$
salt   water

__REDOX__ 6. $F_{2(g)} + 2 KBr_{(aq)} \rightarrow 2 KF_{(aq)} + Br_{2(l)}$

__Acid/Base__ 7. $Fe(OH)_{3(s)} + H_3(PO_4)_{(aq)} \rightarrow 3 H_2O_{(l)} + FePO_{4(s)}$
water   salt

__Acid/Base__ 8. $Pb(OH)_{2(s)} + 2 HCl_{(aq)} \rightarrow 2 H_2O_{(l)} + PbCl_{2(s)}$
water   ~~salt~~ Salt

__Acid/Base__ 9. $NH_4Cl_{(aq)} + NaOH_{(aq)} \rightarrow NaCl_{(aq)} + NH_{3(g)} + 3 H_2O_{(l)}$
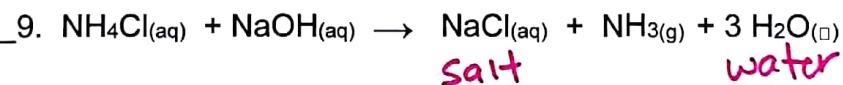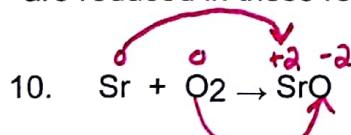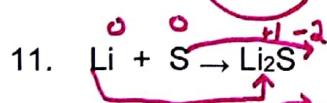salt   water
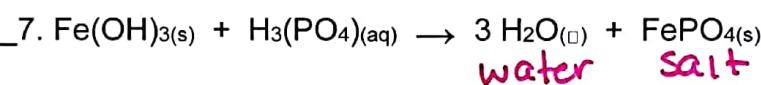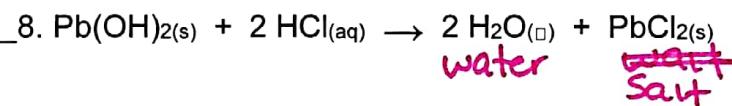
Use the changes in oxidation numbers to determine which elements are oxidized and which are reduced in these reactions. (Note: it is not necessary to use balanced equations)
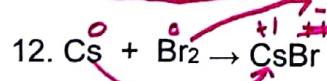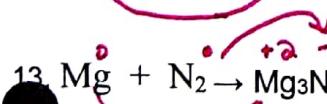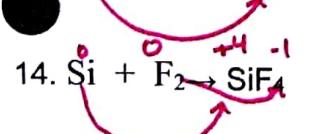
LEO
goes
GER

10. $Sr + O_2 \rightarrow SrO$ Sr is __oxidized__   O is __reduced__

11. $Li + S \rightarrow Li_2S$ S is __reduced__   Li is __oxidized__

12. $Cs + Br_2 \rightarrow CsBr$ Cs is __oxidized__   Br is __reduced__

13. $Mg + N_2 \rightarrow Mg_3N_2$ N is __reduced__   Mg is __oxidized__

14. $Si + F_2 \rightarrow SiF_4$ F is ~~oxidized~~ reduced   Si is __oxidized__