Writing Displacement Reactions - ANSWERS

1. Complete each equation by writing the correct products. State whether the reaction is a single or double displacement.

(a) $CaO(s) + Mg(s) \longrightarrow$ **$MgO_{(s)} + Ca_{(s)}$**

Type of displacement reaction: ____**single displacement**_____

(b) $NaOH(aq) + HCl(aq) \longrightarrow$ **$NaCl_{(aq)} + H_2O_{(l)}$**

Type of displacement reaction: ____**double displacement**_____

(c) $LiCl(aq) + Na(s) \longrightarrow$ **$NaCl_{(aq)} + Li_{(s)}$**

Type of displacement reaction: ____**single displacement**_____

(d) $Mg(s) + H_2O(l) \longrightarrow$ **$Mg(OH)_{2(aq)} + H_{2(g)}$**

Type of displacement reaction: ____**single displacement**_____

(e) $KOH(aq) + HBr(aq) \longrightarrow$ **$KBr_{(aq)} + H_2O_{(l)}$**

Type of displacement reaction: ____**double displacement**_____

(f) $LiOH(aq) + HF(aq) \longrightarrow$ **$LiF_{(aq)} + H_2O_{(l)}$**

Type of displacement reaction: ____**double displacement**_____

(g) $Ag_2SO_4(s) + Cu(s) \longrightarrow$ **$CuSO_{4(aq)} + 2Ag_{(s)}$**

Type of displacement reaction: ____**single displacement**_____

(h) $BaO(s) + Mg(s) \longrightarrow$ **$MgO_{(s)} + Ba_{(s)}$**

Type of displacement reaction: ___**single displacement**_____

(i) $3Ca(ClO_3)_2(aq) + 2Be_3N_2\ (aq) \longrightarrow$ **$Ca_3N_{2(aq)} + 3Be(ClO_3)_{2\ (l)}$**

Type of displacement reaction:____**double displacement** _____

(j) $MgCl_2(aq) + Sr(s) \longrightarrow$ **$SrCl_{2(aq)} + Mg_{(s)}$**

Type of displacement reaction: ____**single displacement**_____

(k) $Ca(s) + H_2O(l) \longrightarrow$ **$CaO_{(aq)} + H_{2(g)}$**

Type of displacement reaction: ___**single displacement**_____

(l) $NaOH(aq) + HBr(aq) \longrightarrow$ **$NaBr_{(aq)} + H_2O_{(l)}$**

Type of displacement reaction: ____**double displacement**_____

(m) $K_2S(aq) + 2LiF(aq) \longrightarrow$ **$2KF + Li_2S$**

Type of displacement reaction: ____**double displacement**_____

(o) $Ag_2SO_4(s) + Cu(NO_3)_2(s) \longrightarrow$ **$2\ AgNO_{3(s)} + CuSO_{4(s)}$**

Type of displacement reaction: ____**double displacement**_____

2. Write the chemical equation below the word equation and then balance it. State the type of reaction.

Word Equation	Type of Reaction
Nitrogen plus hydrogen yield nitrogen trihydride. **$2\ N_{2(g)} + 3\ H_{2(g)} \longrightarrow 2\ NH_{3(g)}$**	**synthesis**
Aluminum bromide plus chlorine yield aluminum chloride and bromine. **$2\ AlBr_{3(s)} + 3\ Cl_{2(g)} \longrightarrow 2\ AlCl_{3(s)} + 3\ Br_{2(l)}$**	**Single displacement**
Hydrochloric acid (hydrogen chloride) plus sodium hydroxide yield sodium chloride plus water. **$HCl_{(aq)} + NaOH_{(aq)} \longrightarrow NaCl_{(aq)} + H_2O_{(l)}$**	**Double displacement**
Iron plus lead (II) sulfate react forming iron (II) sulfate plus lead. **$Fe_{(s)} + PbSO_{4(s)} \longrightarrow FeSO_{4(aq)} + Pb_{(s)}$**	**Single displacement**
Sulfuric acid (hydrogen sulfate) decomposes to form sulfur trioxide gas plus water. **$H_2SO_{4(aq)} \longrightarrow SO_{3(g)} + H_2O_{(l)}$**	**decomposition**
Sodium oxide combines with water to make sodium hydroxide. **$Na_2O_{(s)} + H_2O_{(l)} \longrightarrow 2NaOH_{(aq)}$**	**synthesis**
Potassium iodide reacts with bromine forming potassium bromide plus iodine. **$2\ KI_{(aq)} + Br_{2(l)} \longrightarrow 2\ KBr_{(aq)} + I_{2(s)}$**	**Single displacement**
Sodium phosphate reacts with calcium nitrate to produce sodium nitrate plus calcium phosphate. **$2\ Na_3PO_{4(aq)} + 3\ Ca(NO_3)_{2(aq)} \longrightarrow 6\ NaNO_{3(aq)} + Ca_3(PO_4)_{2(s)}$**	**Double displacement**