Name : _____ Date : _____

Score : _____

Solubility Rules Practice Worksheet

1. Classify each substance as being soluble or insoluble in water.

I. $Mg(PO_4)_2$ – _____

II. KOH – _____

III. $NiCl_2$ – _____

IV. NH_4OH – _____

V. Hg_2SO_4 – _____

VI. KBr - _____

VII. $Pb(CO_3)$ - _____

VIII. PbI_2 - _____

IX. $BaSO_4$ - _____

X. $NiCl_2$ – _____

2. Show the ions that formed the following compounds:

I. $Zn_3(PO_4)_2$

II. Al_2S_3

III. Iron (III) sulfide

IV. Ammonium cyanide

3. Form 4 water-soluble compounds by combining ions from the ions below:

Cl^- CO_3^{2-} PO_4^{3-} Li^+ Sr^{2+}

4. Identify the precipitate in the following reaction. Circle the correct answer.

a. $Li_2CO_3 + Co(CH_3COO)_2 \rightarrow 2\ LiCH_3COO + CoCO_3$

b. $Pb(NO_3)_2 + Li_2SO_4 \rightarrow PbSO_4 + 2\ LiNO_3$

5. Name or give the chemical formula for each of the following compounds and state whether they are soluble (will dissolve) or insoluble (will not dissolve) in solution.

Chemical Formula	Name	Solubility
$Zn_3(PO_4)_2$		
	Silver bromide	
KNO_3		
	Aluminum sulfide	
	Silver acetate	

Name : _____ Date : _____

Score : _____

Solubility Rules Practice Worksheet

Answers

1. Classify each substance as being soluble or insoluble in water.

I. $Mg(PO_4)_2$ – Insoluble

II. KOH – Soluble

III. $NiCl_2$ – Soluble

IV. NH_4OH – Soluble

V. Hg_2SO_4 – Insoluble

VI. KBr - Soluble

VII. $Pb(CO_3)$ - Insoluble

VIII. PbI_2 - Insoluble

IX. $BaSO_4$ - Insoluble

X. $NiCl_2$ – Soluble

2. Show the ions that formed the following compounds:

I. $Zn_3(PO_4)_2$

Zn^{2+} and PO_4^{3-}

II. Al_2S_3

Al^{3+} and S^{2-}

III. Iron (III) sulfide

Fe_2S_3 – Fe^{3+} and S^{2-}

IV. Ammonium cyanide

NH_4CN – NH^{4+} and CN^-

3. Form 4 water-soluble compounds by combining ions from the ions below:

Cl^- CO_3^{2-} PO_4^{3-} Li^+ Sr^{2+}

LiCl, $SrCl_2$, Li_2CO_3, Li_3PO_4

4. Identify the precipitate in the following reaction. Circle the correct answer.

a. $Li_2CO_3 + Co(CH_3COO)_2 \rightarrow 2\ LiCH_3COO + (CoCO_3)$

b. $Pb(NO_3)_2 + Li_2SO_4 \rightarrow (PbSO_4) + 2\ LiNO_3$

5. Name or give the chemical formula for each of the following compounds and state whether they are soluble (will dissolve) or insoluble (will not dissolve) in solution.

Chemical Formula	Name	Solubility
$Zn_3(PO_4)_2$	Zinc phosphate	Insoluble
AgBr	Silver bromide	Insoluble
KNO_3	Potassium nitrate	Soluble
Al_2S_3	Aluminum sulfide	Insoluble
AgC_2H_3O	Silver acetate	Soluble