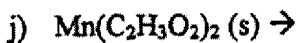
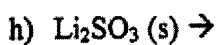
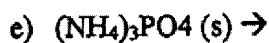
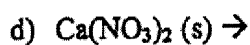
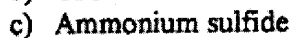
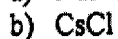


Worksheet - Dissolving Equations and Solubility Table

1) Write the dissolving equations for the following:



2) Use the table of Solubility to determine if the following are soluble (S) or insoluble(I).



3) Give the IUPAC name for each substance in Question 1).

Table 10-04 Solubility Table for Ionic Compounds in Water

	NH ₄ ⁺	Na ⁺	K ⁺	Mg ²⁺	Ca ²⁺	Sr ²⁺	Ba ²⁺	Ce ³⁺	Mn ²⁺	Fe ²⁺	Fe ³⁺	Co ²⁺	Ni ²⁺	Cu ²⁺	Ag ⁺	Zn ²⁺	Cd ²⁺	Hg ₂ ²⁺	Hg ²⁺	Al ³⁺	Sn ²⁺	Sn ⁴⁺	Pb ²⁺
Cl ⁻	S	S	S	S	S	S	S	S	S	S	S	S	S	S	I	S	S	I	S	S	S	S	I
Br ⁻	S	S	S	S	S	S	S	S	S	S	S	S	S	S	I	S	S	I	S	S	S	S	I
I ⁻	S	S	S	S	S	S	S	S	S	S	S	S	S	S	I	S	S	I	S	S	S	S	I
NO ₃ ⁻	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
ClO ₃ ⁻	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
C ₂ H ₃ O ₂ ⁻	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
OH ⁻	S	S	S	I	S	S	S	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
S ²⁻	S	S	S	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
SO ₄ ²⁻	S	S	S	S	I	I	I	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	I
CO ₃ ²⁻	S	S	S	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
PO ₄ ³⁻	S	S	S	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
SO ₃ ²⁻	S	S	S	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
O ²⁻	S	S	S	I	S	S	S	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I

I = insoluble (ppt) S = soluble

Table 13.1 Qualitative Solubility Rules

Rule No.	Rule Statement	Summary
1	Hydrogen, ammonium, and all Group I ions form soluble compounds with all negative ions.	
	H^+ , NH_4^+ , Li^+ , Na^+ , K^+ , Rb^+ , Cs^+ , Fr^+	All compounds are soluble
2	Acetate and nitrate ions form soluble compounds with all positive ions.	
	CH_3COO^- , NO_3^-	All compounds are soluble
3	Sulphide ion forms soluble compounds only with the ions listed in rule 1 and with Group II positive ions.	
	S^{2-} with Mg^{2+} , Ca^{2+} , Sr^{2+} , Ba^{2+} , Ra^{2+} , and ions in rule 1	Soluble compounds
	S^{2-} with all other positive ions	Forms precipitates
4	Chloride, bromide, and iodide ions form compounds that have low solubility with silver, lead(II), mercury(I), copper(I) and thallium positive ions only.	
	Cl^- , Br^- , and I^- with Ag^+ , Pb^{2+} , Hg_2^{2+} , Cu^+ , Tl^+	Form precipitates
5	Sulphate ion forms compounds that have low solubility with calcium, strontium, barium, radium, and lead(II) positive ions only.	
	SO_4^{2-} with Ca^{2+} , Sr^{2+} , Ba^{2+} , Ra^{2+} , Pb^{2+}	Forms precipitates
6	Hydroxide ion forms compounds that are soluble only with the positive ions listed in rule 1 and with strontium, barium, radium, and thallium positive ions.	
	OH^- with Sr^{2+} , Ba^{2+} , Ra^{2+} , Tl^+ , and ions in rule 1	Soluble compounds
	OH^- with all other positive ions	Forms precipitates
7	Phosphate, carbonate, and sulphite ions form compounds that have low solubility with all positive ions except those listed in rule 1.	
	PO_4^{3-} , CO_3^{2-} , SO_3^{2-} with positive ions in rule 1	Soluble compounds
	PO_4^{3-} , CO_3^{2-} , SO_3^{2-} with all other positive ions	Form precipitates