Experiment 5 Lab Report: Name _____Section (M-1) (M-3) (W-1) (W-3)
Dr. Hahn sections Show all work for partial and full credit. Precipitates Lab Circle your section.

My Lab Partners were: _____ Chart 4 _____

By providing your data to the class data sheet, you will earn 50% of your grades. The questions below are the remaining 50% of your lab report grade. I will either post or email the class data sheet. POSTED*****

1. Attach your own data sheet (my handout) for the solubilities of combination of cations and anions. Also attach class data sheet (can be handwritten from posted data or printed out from posted class data, can use your class data or another class data from my posted class data) (6 %)
2. (a) Complete the ionic reaction of Pb $(NO_3)_2$ with Na I (12% pts, 4 % pts each)

(1) Molecular equation:

$Pb(NO_3)_2$ + 2 Na I → _____ + _____
(aq) (aq)

(2) Total ionic equation:

(3) Net ionic equation:

(b) Does the reaction actually go forward to product from the reactants ? (yes, no) explain why briefly. You may refer to class data chart or table 4.1 on p. 183 of your textbook.) (4 pts)

3 From the class data give a general conclusion about (a) size of cations (b) charges on cation and anions and which results in an insoluble ionic compound. (10 pts)

4. Lattice energy is the energy which holds ionic compounds together in the solid. To get an ion to dissolve, the stability energy from the solvation of the ions in water must be greater than the lattice energy. A high lattice energy usually indicates an ionic compound which tends to precipitate out of solution as a solid. (6 % pts)

High lattice energy (insolubility of compounds) is associated with (circle ALL letters which are associated with high likelihood of precipitate formation)

(a) high charge on cation (b) low charge on cation (c) high charge on anion (d) low charge on anion
(e) larger size of cation or anion (f) smaller size of cation or anion

5. Write out (on the back of this sheet) the expected molecular precipitation reaction for the following if you assume the reaction goes forward. From table 2 **row 8** reaction with **column 2, 5 and 7**. (4% each rxn, 12%)