Name	AP Chemistry
_	3: Due 12/7/15 Complete both free response questions. One will be graded. Show all early label all final answers
(a) A saturated solution PbCl₂ is found to be 0.4 PbCl₂(s) ⇒ (i) Write the e (ii) Calculate t (iii) Calculate to (iii) Calculate to (c) Solid NaCl is added to the concentration of the concentration of the concentration of the value of K₅p for the concentration of the value of the concentration of the concentration of the value of the concentration of the concentrati	ing questions that relate to solubility of salts of lead and barium. It is prepared by adding excess PbCl ₂ (s) to distilled water to form 1.0 L of solution at 25°C. The solubility of 4415 grams/100. ml H ₂ O. The chemical equation for the dissolution of PbCl ₂ (s) in water is shown below. Pb ²⁺ (aq) + 2Cl ⁻ (aq) quilibrium-constant expression for the equation. the molar concentration of Cl ⁻ (aq) in the solution. the value of the equilibrium constant, K _{sp} . It is prepared by adding PbCl ₂ (s) to distilled water to form 4.0 L of solution at 25°C. What are the molar aq) and Cl ⁻ (aq) in the solution? Justify your answer. It to a saturated solution of PbCl ₂ at 25°C. Assuming that the volume of the solution does not change, does the Pb ²⁺ (aq) in the solution increase, decrease, or remain the same? Justify your answer. It the salt BaSO ₄ is 1.5×10^{-9} . 7.0 mL sample of 2.16×10^{-2} M Ba(NO ₃) ₂ is added to 229.0 mL of 5.19×10^{-2} M Na ₂ SO ₄ tate form (you must justify with calculations). the concentration of the Ba ²⁺ at equilibrium.

 #2. Answer the following questions about the solubility of the salts Li₃PO₄ and PbCl₂. Assume that hydrolysis effects are neg The equation for the dissolution of Li₃PO₄(s) is shown below. Li₃PO₄(s) ⇒ 3 Li⁺(aq) + PO₄³⁻(aq) K₅p = 3.2 × 10⁻⁰ at 25°C (a) Write the equilibrium-constant expression for the dissolution of Li₃PO₄(s). (b) Assuming that volume changes are negligible, calculate the maximum number of moles of Li₃PO₄(s) that can dissolve in (i) 0.50 L of water at 25°C 	iligible.
(ii) 0.50 L of 0.20 M LiNO ₃ at 25°C The equation for the dissolution of PbCl ₂ is shown below. PbCl ₂ (s) \rightleftharpoons Pb ²⁺ (aq) + 2 Cl ⁻ (aq) $K_{sp} = 1.6 \times 10^{-5}$ at 25°C (c) Calculate the concentration of Cl ⁻ (aq) in a saturated solution of PbCl ₂ at 25°C . (d) An open container holds 1.000 L of 0.00400 M PbCl ₂ , which is unsaturated at 25°C . Calculate the minimum volume of warmL, that must evaporate from the container before solid PbCl ₂ can precipitate.	ater, in