

CHEM 1332

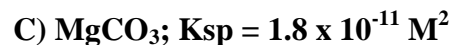
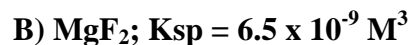
Name: \_\_\_\_\_

1) What is the molar solubility of  $\text{Pb}(\text{OH})_2$  at pH 13.00 ( $K_{\text{sp}} = 1.2 \times 10^{-5}$ )?

2) You have a saturated solution of  $\text{Gd}_2(\text{SO}_4)_3$ . It follows that:

- a)  $[\text{Gd}_3^+] > [\text{SO}_4^{3-}]$
- b)  $[\text{Gd}_3^+] = (K_{\text{sp}}/36)^{1/5}$
- c)  $[\text{Gd}_3^+] = 3/2 (K_{\text{sp}})^{1/5}$
- d)  $[\text{Gd}_3^+] = 2/3 [\text{SO}_4^{2-}]$
- e)  $[\text{Gd}_3^+] = (K_{\text{sp}})^{1/5}$

3) Which of the following when dissolved in water has the highest concentration of magnesium ion?



4) What is the molarity of  $\text{Ce}^{4+}$  in a saturated solution of  $\text{Ce}(\text{IO}_4)_4$ ? ( $K_{\text{sp}} = 4.6 \times 10^{-17}$ ).

5) A solution is 0.10 M  $\text{Pb}(\text{NO}_3)_2$  and 0.10 M  $\text{AgNO}_3$ . If solid  $\text{NaCl}$  is added to the solution, what is  $[\text{Ag}^+]$  when  $\text{PbCl}_2$  begins to precipitate? ( $K_{\text{sp}} \text{ PbCl}_2 = 1.7 \times 10^{-5}$ ;  $\text{AgCl} = 1.8 \times 10^{-10}$ ).