CHEM 1332

Name:_____

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

2) You have a saturated solution of $Gd_2(SO_4)_3$. It follows that:

a) $[Gd_3^+] > [SO_4^{3-}]$
b) $[Gd_3^+] = (Ksp/36)^{1/5}$
c) $[Gd_3^+] = 3/2\ (Ksp)^{1/5}$
d) $[Gd_3^+] = 2/3\ [SO_4^{2-}]$
e) $[Gd_3^+] = (Ksp)^{1/5}$

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

A) $Mg_3(PO_4)_2$; $Ksp = 1 \times 10^{-25}\ M^5$

B) MgF_2; $Ksp = 6.5 \times 10^{-9}\ M^3$

C) $MgCO_3$; $Ksp = 1.8 \times 10^{-11}\ M^2$

4) What is the molarity of Ce^{4+} in a saturated solution of $Ce(IO_4)_4$? ($K_{sp} = 4.6 \times 10^{-17}$).

5) A solution is 0.10 M $Pb(NO_3)_2$ and 0.10 M $AgNO_3$. If solid NaCl is added to the solution, what is $[Ag^+]$ when $PbCl_2$ begins to precipitate?
(K_{sp} $PbCl_2 = 1.7 \times 10^{-5}$; $AgCl = 1.8 \times 10^{-10}$).