Quiz 17.5 – Formation Reactions

Name: _____

Question 1

Copper(II) ions will form a $Cu(NH_3)_4^{2+}$ complex ion with $K_f = 1.7 \times 10^{13}$
Find $[Cu^{2+}]$, $[NH_3]$, and $[Cu(NH_3)_4^{2+}]$ for a solution which is $0.200\ F$ in Cu^{2+} and $0.500\ F$ in NH_3

Question 2

Consider the formation of the complex ion $Ag(CN)_2^-$, with $(K_f = 1.0 \times 10^{21})$
Find $[Ag^+]$, $[CN^-]$, and $[Ag(CN)_2^-]$ in a solution prepared by mixing $25.00\ ml$ of $0.075\ M$ $AgNO_3$ with $40.00\ ml$ of $0.100\ M$ NaCN

Question 3

PbI_2 is a sparingly soluble salt with $K_{sp} = 9.8 \times 10^{-9}$, while PbI_4^{2-} is a complex ion with $K_f = 3.0 \times 10^4$
What effect does the formation reaction have on the molar solubility of PbI_2?
(Bonus for the truly adventurous!: Find $[Pb^{2+}]$, $[I^-]$, and $[PbI_2^{2-}]$ if excess $PbI_2(s)$ is placed in pure water)

God Says Yes to Me

By Kaylin Haught

I asked God if it was okay to be melodramatic
and she said yes
I asked her if it was okay to be short
and she said it sure is
I asked her if I could wear nail polish
or not wear nail polish
and she said honey
she calls me that sometimes
she said you can do just exactly
what you want to
Thanks God I said
And is it even okay if I don't paragraph
my letters
Sweetcakes God said
who knows where she picked that up
what I'm telling you is
Yes Yes Yes