The solubility product of Cu $(OH)_2$ is 4.8 x 10-20. Calculate the value of pCu2 +, i.e. **-log [Cu2 +],** in an aqueous solution of NaOH which has a pH of 12.68 and which is saturated with Cu (OH) 2.

$Ksp\ (Cu(OH)_2) = 4.8 \times 10^{-20} = [Cu^{2+}]\ [OH^-]^2$

$pOH = 14 - pH = 14 - 12.68 = 1.32$

$pOH = - \lg[OH^-] = 1.32$

$[OH^-] = 0.0479\ M$

$[Cu^{2+}] = Ksp\ (Cu(OH)_2)/\ [OH^-]^2$

$[Cu^{2+}] = 4.8 \times 10^{-20}/\ (0.0479)^2 = 4.8\ 10^{-20}/\ 2.2 \times 10^{-3} = 2.2 \times 10^{-17}$

$-\lg\ [Cu^{2+}] = - (0.34 - 17) = 16.66$

$pCu^{2+} = -\log_{10}\ [Cu^{2+}] = 16.66$