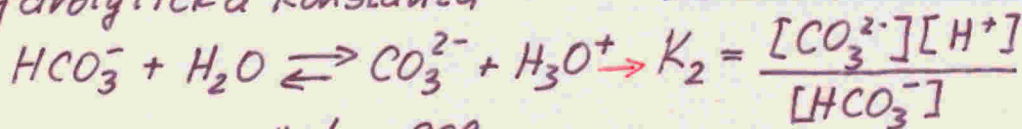
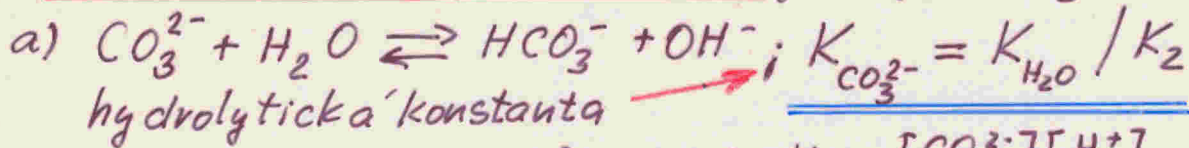
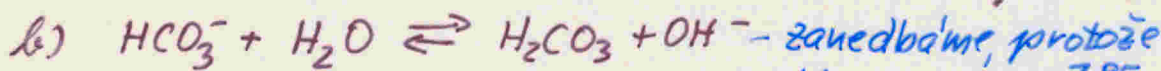


2) Zjistíme hodnotu pH při hydrolyze CO_3^{2-}

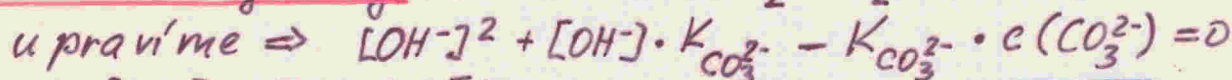
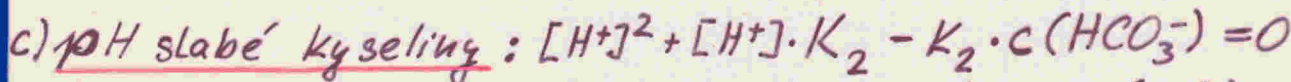


$K_{\text{CO}_3^{2-}} = 10^{-14} / 10^{-9,99} = 10^{-4,01}$

pro výpočet pH



$K_{\text{HCO}_3^-} = 10^{-7,85} \ll K_{\text{CO}_3^{2-}} = 10^{-4,01}$



$\Rightarrow [\text{OH}^-] = 5,82 \cdot 10^{-5} \text{ M} \Rightarrow \text{pH} = 9,76$

3) Zjistíme hodnotu podm. souc. rozp. K'_s a $c(\text{BaCO}_3)$

$\alpha_{\text{CO}_3^{2-}} = 1 + [\text{H}^+] K_2^{-1} + [\text{H}^+]^2 K_1^{-1} K_2^{-1} = 1 + 10^{0,23} + 10^{-3,38} = 2,70 =$

$= 10^{0,43} \Rightarrow K'_s = K_s \cdot \alpha_{\text{CO}_3^{2-}} = 10^{-8,09} \cdot 10^{0,43} = 10^{-7,66}$

$c(\text{BaCO}_3) = \sqrt{K'_s} = 1,48 \cdot 10^{-4} \text{ M} \times \sqrt{K_s} = 9,03 \cdot 10^{-5} \text{ M}$

4) Opakuje výpočet pH podle 2c) s $c(\text{CO}_3^{2-}) = 1,48 \cdot 10^{-4}$

Dostaneme $\text{pH} = 9,90$, $K'_s = 10^{-7,74}$, $c(\text{BaCO}_3) =$

$= 1,35 \cdot 10^{-4} \text{ M}$, další aproximace dává $c(\text{BaCO}_3) = 1,32 \cdot 10^{-4}$