$dNaOH := 100\ mg/L$ $dNaOH := \frac{dNaOH}{(23+16+1)\ gm/mole} = 2.5\ mmole/L$

$dNa_2CO_3 := 300\ mg/L$ $dNa_2CO_3 := \frac{dNa_2CO_3}{(2\cdot 23+12+3\cdot 16)\ gm/mole} = 2.83\ mmole/L$

$dNaHCO_3 := 200\ mg/L$ $dNaHCO_3 := \frac{dNaHCO_3}{(23+1+12+3\cdot 16)\ gm/mole} = 2.381\ mmole/L$

$\Sigma C := dNaHCO_3 + dNa_2CO_3 = 5.211\ mmole/L$

$[Na^+] := dNaHCO_3 + 2\cdot dNa_2CO_3 + dNaOH = 10.541\ mmole/L$

$K_w := 10^{-14}\ (mole/L)^2$ $K_1 := 4.3\cdot 10^{-7}\ mole/L$ $K_2 := 4.4\cdot 10^{-11}\ mole/L$

$$\begin{bmatrix} [H^+] \\ [OH^-] \\ [H_2CO_3] \\ [HCO_3^-] \\ [CO_3^{2-}] \end{bmatrix} := \begin{bmatrix} 1.641\cdot 10^{-8} \\ 1.443 \\ 5.05\cdot 10^{-5} \\ 1.323 \\ 3.888 \end{bmatrix} mmole/L$$

$K_w = [H^+]\cdot[OH^-]$ $K_1 = \frac{[H^+]\cdot[HCO_3^-]}{[H_2CO_3]}$ $K_2 = \frac{[H^+]\cdot[CO_3^{2-}]}{[HCO_3^-]}$

$[H^+] + [Na^+] = [OH^-] + [HCO_3^-] + 2\cdot[CO_3^{2-}]$

$[H_2CO_3] + [HCO_3^-] + [CO_3^{2-}] = \Sigma C$

$$\begin{bmatrix} [H^+] \\ [OH^-] \\ [H_2CO_3] \\ [HCO_3^-] \\ [CO_3^{2-}] \end{bmatrix} := \text{Find}\left([H^+],[OH^-],[H_2CO_3],[HCO_3^-],[CO_3^{2-}]\right) = \begin{bmatrix} 9.543\cdot 10^{-9} \\ 1.048 \\ 2.061\cdot 10^{-5} \\ 0.929 \\ 4.282 \end{bmatrix} mmole/L$$

$pH := -\log\left(\frac{[H^+]}{mole/L}\right) = 11.02$ $pOH := -\log\left(\frac{[OH^-]}{mole/L}\right) = 2.98$ $pH + pOH = 14$

Na^+

$Valery^+$

$[H+]\cdot[OH-] = ?\ (моль/л)^2$ $K_{..} = ?\ (моль/л)^2$

$$\frac{[H+]\cdot[HCO_3\text{-}]}{[H_2CO_3]} = ?\ \textbf{моль/л}$$

$$K_1 = ?\ \textbf{моль/л}$$

$$\frac{[H+]\cdot[CO_3\text{--}]}{[HCO_3\text{-}]} = ?\ \textbf{моль/л}$$

$$K_2 = ?\ \textbf{моль/л}$$

$$[H+] + [Na+] = ?\ \textbf{ммоль/л}$$

$$[OH\text{-}] + [HCO_3\text{-}] + 2\cdot[CO_3\text{--}] = ?\ \textbf{ммоль/л}$$

$$[H_2CO_3] + [HCO_3\text{-}] + [CO_3\text{--}] = ?\ \textbf{ммоль/л}$$

$$\Sigma C = ?\ \textbf{ммоль/л}$$