

# Sabarito pH e pOH ①

$$① \text{pH} = 3,40$$

$$[\text{H}^+] = 10^{-\text{pH}} \quad [\text{H}^+] = 10^{-3,40} = 3,90 \times 10^{-4} \text{ mol L}^{-1}$$

$$K_w = [\text{H}^+][\text{OH}^-]$$

$$[\text{OH}^-] = \frac{10^{-14}}{3,90 \times 10^{-4}} = 2,57 \times 10^{-11} \text{ mol L}^{-1}$$

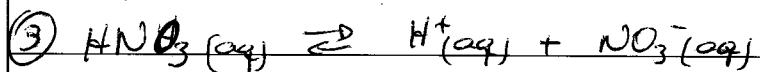
a bebida é ácida

$$② \text{Mg(OH)}_2 \rightleftharpoons \text{Mg}^{2+} + 2\text{OH}^- \quad \text{pH} = 10,5$$

$$[\text{H}^+] = 10^{-\text{pH}} \quad [\text{H}^+] = 10^{-10,5} = 3,16 \times 10^{-11} \text{ mol L}^{-1}$$

$$[\text{OH}^-] = 10^{-\text{pOH}} \quad [\text{OH}^-] = 10^{-3,50} = 3,16 \times 10^{-4} \text{ mol L}^{-1}$$

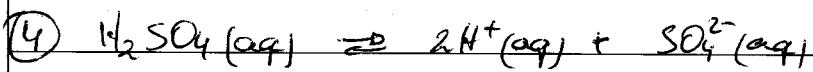
o anti-ácido é alcalino.



$$0,0013 \text{ mol L}^{-1} \quad 0,0013 \text{ mol L}^{-1}$$

$$\text{pH} = -\log [\text{H}^+] \quad \text{pH} = -\log 0,0013 = 2,89$$

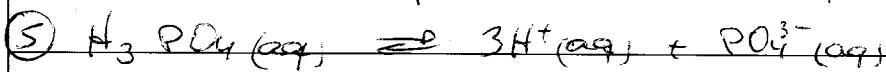
$$[\text{OH}^-] = 10^{-\text{pH}} = 10^{-11,11} = 7,76 \times 10^{-12} \text{ mol L}^{-1}$$



$$0,00065 \text{ mol L}^{-1} \quad 0,0013 \text{ mol L}^{-1}$$

$$\text{pH} = -\log [\text{H}^+] \quad \text{pH} = -\log 0,0013 = 2,89$$

$$[\text{OH}^-] = 10^{-\text{pH}} = 10^{-11,11} = 7,76 \times 10^{-12} \text{ mol L}^{-1}$$

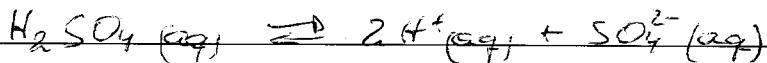


$$1,30 \times 10^{-5} \text{ mol L}^{-1} \quad 3,90 \times 10^{-5} \text{ mol L}^{-1}$$

$$\text{pH} = -\log [\text{H}^+] = -\log 3,90 \times 10^{-5} = 4,41$$

$$[\text{OH}^-] = 10^{-\text{pH}} = 10^{-9,59} = 2,56 \times 10^{-10} \text{ mol L}^{-1}$$

$$⑥ [\text{H}^+] = 10^{-5,35} = 4,47 \times 10^{-6} \text{ mol L}^{-1}$$



$$x \quad 4,47 \times 10^{-6} \text{ mol L}^{-1}$$

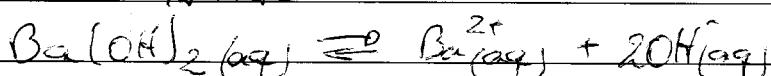
$$\text{proporcão 1:2} \therefore [\text{H}_2\text{SO}_4] = 2,23 \times 10^{-6} \text{ mol L}^{-1}$$

$$⑦ [\text{H}^+] = 10^{-\text{pH}} = 10^{-10,66} = 2,39 \times 10^{-11} \text{ mol L}^{-1}$$

$$K_w = [\text{H}^+][\text{OH}^-]$$

$$10^{-14} = 2,39 \times 10^{-11} [\text{OH}^-]$$

$$[\text{OH}^-] = \frac{10^{-14}}{2,39 \times 10^{-11}} = 4,27 \times 10^{-4} \text{ mol L}^{-1}$$



$$2,28 \times 10^{-4} \text{ mol L}^{-1} \quad 4,57 \times 10^{-4} \text{ mol L}^{-1}$$