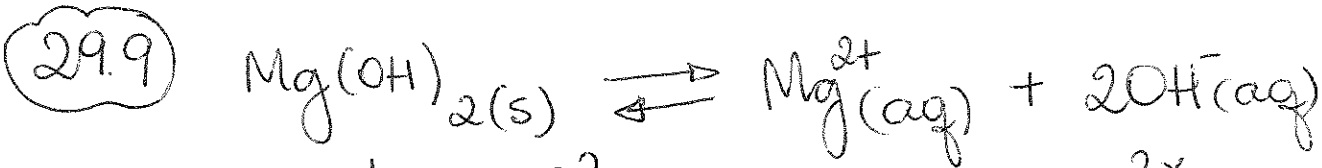


$$K_{ps} = [\text{Ag}^+]^1 \cdot [\text{I}^-]^1$$

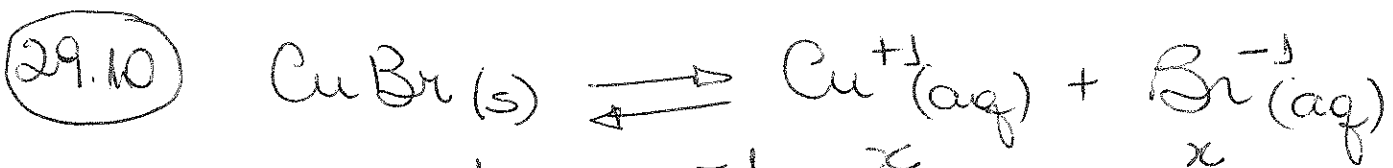
$$K_{ps} = [1 \cdot 10^{-8}]^1 \cdot [1 \cdot 10^{-8}]^1 \Rightarrow \boxed{K_{ps} = 1 \cdot 10^{-16}}$$



$$K_{ps} = [\text{Mg}^{2+}]^1 \cdot [\text{OH}^-]^2$$

$$K_{ps} = [10^{-4}]^1 \cdot [2 \cdot 10^{-4}]^2$$

$$K_{ps} = 10^{-4} \cdot 4 \cdot 10^{-8} \Rightarrow \boxed{K_{ps} = 4 \cdot 10^{-12}}$$



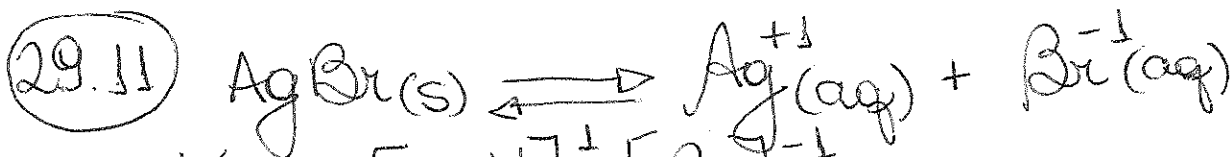
$$K_{ps} = [\text{Cu}^+]^1 \cdot [\text{Br}^-]^1$$

$$4,9 \cdot 10^{-9} = x \cdot x$$

$$4,9 \cdot 10^{-9} = x^2$$

$$\Rightarrow \boxed{x = \sqrt{4,9 \cdot 10^{-9}}}$$

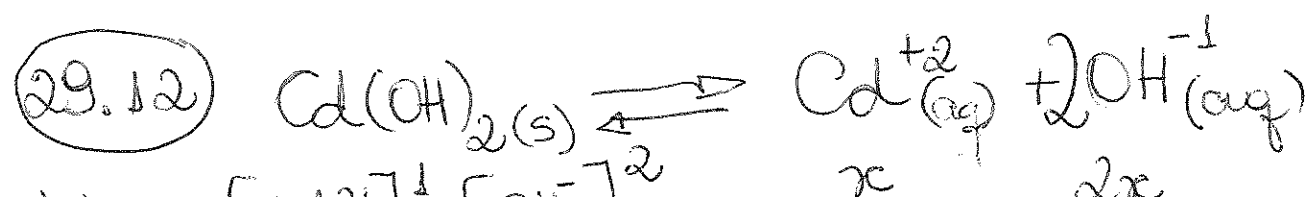
$$\boxed{x = 7 \cdot 10^{-5}}$$



$$K_{ps} = [\text{Ag}^+]^1 \cdot [\text{Br}^-]^1$$

$$K_{ps} = 7 \cdot 10^{-7} \cdot 7 \cdot 10^{-7}$$

$$\Rightarrow \boxed{K_{ps} = 49 \cdot 10^{-14}}$$



$$K_{ps} = [\text{Cd}^{2+}]^1 \cdot [\text{OH}^-]^2$$

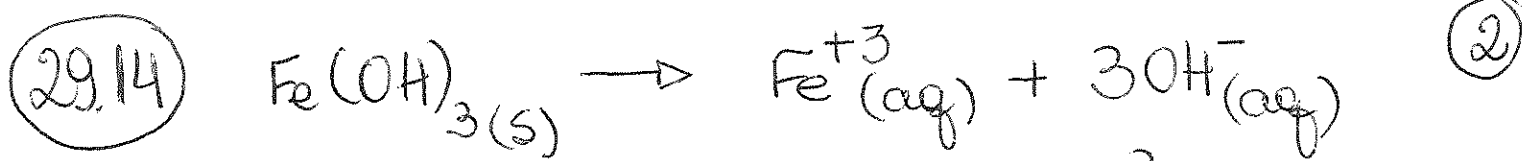
$$3,2 \cdot 10^{-14} = (x) \cdot (2x)^2$$

$$\Rightarrow 3,2 \cdot 10^{-14} = 4x^3$$

$$x = \sqrt[3]{\frac{3,2 \cdot 10^{-14}}{4}}$$

$$\Rightarrow \sqrt[3]{8 \cdot 10^{-5}}$$

$$\boxed{x = 2 \cdot 10^{-5}}$$



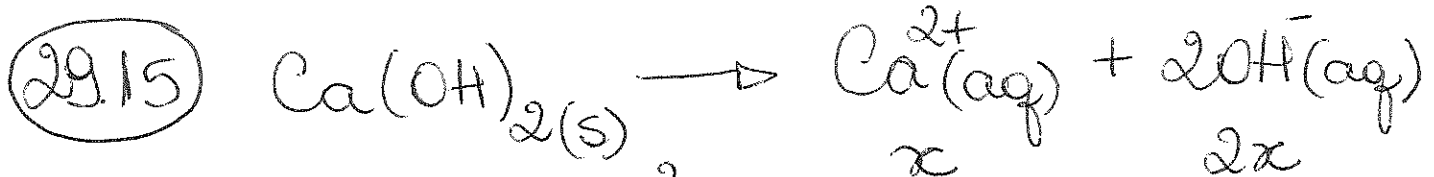
$$K_{ps} = [\text{Fe}^{+3}]^1 \cdot [\text{OH}^{-}]^3$$

$$27 \cdot 10^{-28} = x \cdot (3x)^3$$

$$27 \cdot 10^{-28} = x \cdot 27x^3$$

$$x = \sqrt[4]{\frac{27 \cdot 10^{-28}}{27}}$$

$$x = \sqrt[4]{1 \cdot 10^{-28}} \Rightarrow x = 1 \cdot 10^{-7}$$



$$K_{ps} = [\text{Ca}^{2+}]^1 \cdot [\text{OH}^{-}]^2$$

$$4 \cdot 10^{-6} = x \cdot (2x)^2$$

$$4 \cdot 10^{-6} = x \cdot 4x^2$$

$$4x^3 = 4 \cdot 10^{-6}$$

$$x = \sqrt[3]{\frac{4 \cdot 10^{-6}}{4}} \Rightarrow x = 1 \cdot 10^{-2}$$

(29.16) solução $\text{Ca}(\text{OH})_2$ é básica. $\text{pOH} = -\log[\text{OH}^{-}]$

$$2x \Rightarrow 2 \cdot 1 \cdot 10^{-2} \Rightarrow 2 \cdot 10^{-2} \text{ mol/L}$$

$$\text{pOH} = -\log 2 \cdot 10^{-2}$$

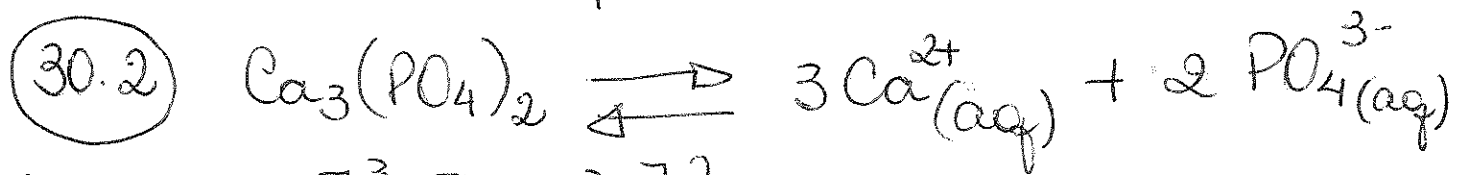
$$\text{pOH} = 2 - \log 2$$

$$\text{pOH} = 2 - 0,3$$

$$\boxed{\text{pOH} = 1,7}$$

$$\text{pH} = 14 - 1,7$$

$$\boxed{\text{pH} = 12,3}$$



$$K_{ps} = [\text{Ca}^{2+}]^3 \cdot [\text{PO}_4^{3-}]^2$$

$$1 \cdot 10^{-25} = (2 \cdot 10^{-3})^3 \cdot x^2$$

$$1 \cdot 10^{-25} = 8 \cdot 10^{-9} \cdot x^2$$

$$x^2 = \frac{1}{8} \cdot 10^{-16}$$

$$x = 0,35 \cdot 10^{-8}$$

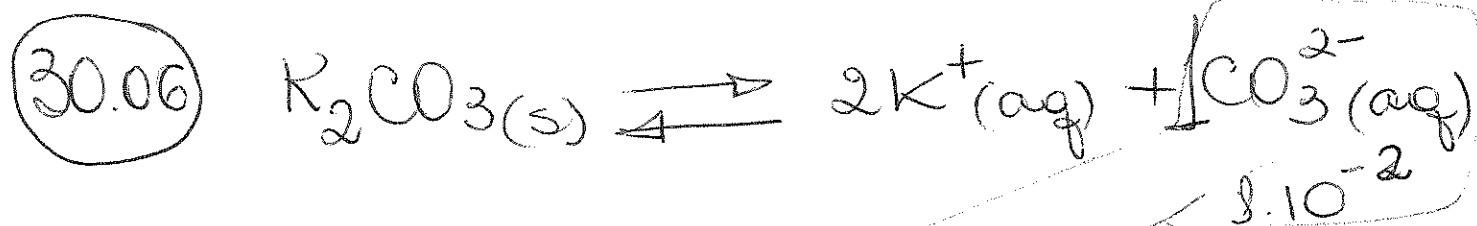
$$x = 3,5 \cdot 10^{-9} \text{ mol/L}$$



$$K_{ps} = [\text{Ca}^{2+}]^1 \cdot [\text{CO}_3^{2-}]^1$$

$$K_{ps} = 10^{-5} \cdot 10^{-5}$$

$$K_{ps} = 10^{-10}$$



$$K_{ps} = [\text{Ca}^{2+}]^1 \cdot [\text{Cl}^-]^2 \cdot 1 \cdot 10^{-2}$$

$$1 \cdot 10^{-10} = x \cdot 1 \cdot 10^{-2}$$

$$x = \frac{1 \cdot 10^{-10}}{1 \cdot 10^{-2}}$$

$$x = 1 \cdot 10^{-8}$$

30.7

$$K_{ps} = [Ca^{+2}] \cdot [OH^{-}]^2$$

$$4 \cdot 10^{-6} = 1 \cdot 10^{-2} \cdot [2x]^2$$

$$4 \cdot 10^{-6} = 4x^2 \cdot 10^{-2}$$

$$x^2 = \frac{4 \cdot 10^{-6}}{1 \cdot 10^{-2}}$$

$$x = \sqrt{4 \cdot 10^{-4}}$$

$$x = 2 \cdot 10^{-2}$$

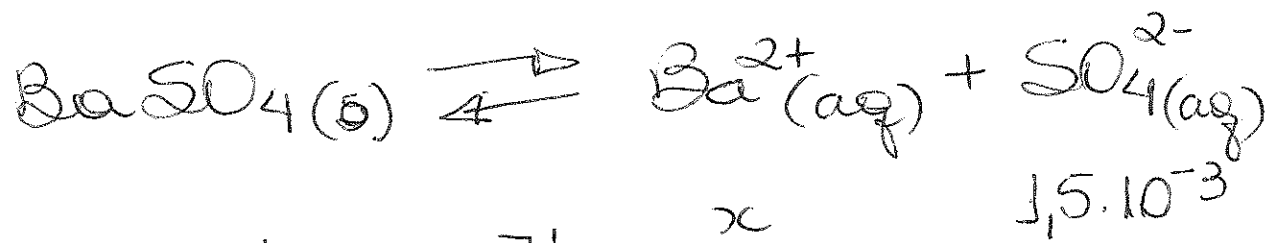
30.9

$$1,8 \cdot 10^{-10} = 1 \cdot 10^{-1} \cdot x$$

$$x = \frac{1,8 \cdot 10^{-10}}{1 \cdot 10^{-1}} \Rightarrow$$

$$x = 1,8 \cdot 10^{-9}$$

30.13



$$K_{ps} = [Ba^{2+}]^1 \cdot [SO_4^{2-}]^1$$

$$1,5 \cdot 10^{-9} = [Ba^{2+}] \cdot 1,5 \cdot 10^{-3}$$

$$[Ba^{2+}] = \frac{1,5 \cdot 10^{-9}}{1,5 \cdot 10^{-3}} \Rightarrow$$

$$[Ba^{2+}] = 1 \cdot 10^{-6}$$