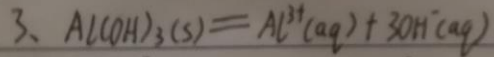
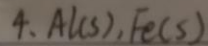
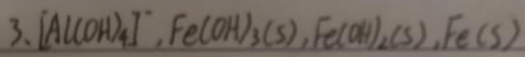
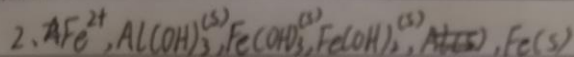
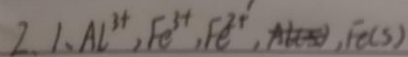
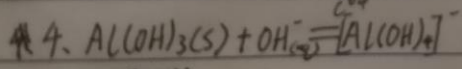


Si  $\text{pH} > \text{pH de Si}$  PH va à un  $\text{Al(OH)}_3$  peut changer à  $[\text{Al(OH)}_4]^-$ , donc on peut distinguer les éléments Al et Fe

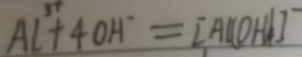


$$K_s = [\text{Al}^{3+}][\text{OH}^-]^3 \quad K_s = 10^{-2} \times (10^{-4})^3 = 10^{-14}$$



$$\beta = \frac{[\text{Al(OH)}_4]^-}{[\text{Al}^{3+}]}$$

$$E = E^\circ(\text{Al(OH)}_3/\text{Al(OH)}_4) + 0$$



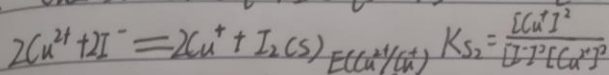
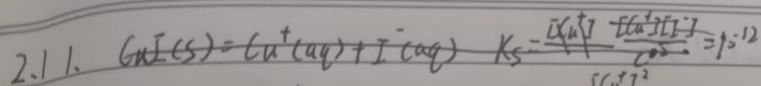
$$\beta(4) = \frac{[\text{Al(OH)}_4]^-}{[\text{Al}^{3+}][\text{OH}^-]^4} = \frac{1}{10^{-2} \cdot [\text{OH}^-]^4} = 10^{34}$$

$$[\text{OH}^-] = 10^{-6} \quad \text{pH} = 8$$

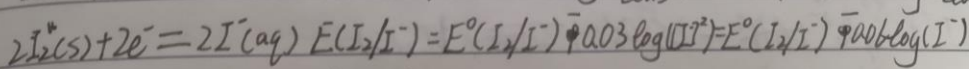
Done  $K_s = \frac{1}{[\text{OH}^-]^8} = 10^8$   $pK_s = 8$   
5.  $pH = 8$

6.

$$\frac{4.5}{6} = \frac{1.5}{2} \quad -2.8$$

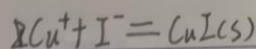


$2\text{Cu}^{2+} + 2e^- = 2\text{Cu}^+ \quad E = E^\circ(\text{Cu}^{2+}/\text{Cu}^+) + 0.03 \log \left( \frac{[\text{Cu}^{2+}]}{[\text{Cu}^+]^2} \right) = E^\circ(\text{Cu}^{2+}/\text{Cu}^+) + 0.06 \log \left( \frac{[\text{Cu}^{2+}]}{[\text{Cu}^+]^2} \right)$



Si ces sont équilibrant

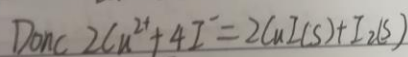
$E^\circ(\text{Cu}^{2+}/\text{Cu}^+) - E^\circ(\text{I}_2/\text{I}^-) = 0.06 \log \left( \frac{1}{K_{s2}} \right)$



$K_s = \frac{[\text{Cu}^+][\text{I}^-]}{1} = 1.5 \times 10^{-12}$

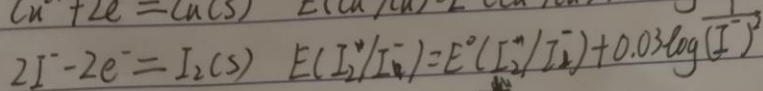
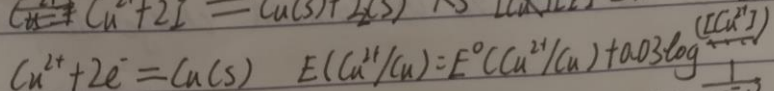
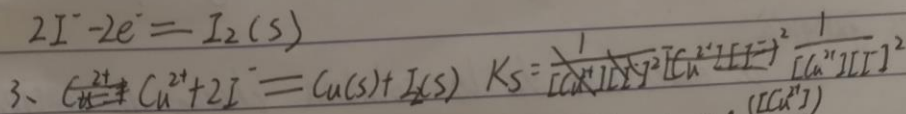
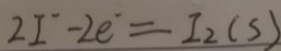
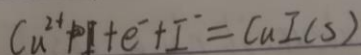
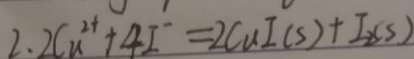
$+0.45 = 0.06 \log \left( \frac{1}{K_{s2}} \right)$

$+7.5 = \log \left( \frac{1}{K_{s2}} \right) \quad K_{s2} = 10^{-7.5}$



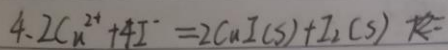
$K = 10^{16.5}$

Donc je pense que c'est possible sûr



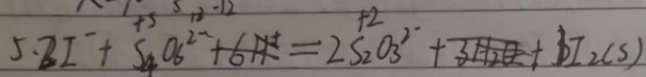
Donc  $0.34 + 0.03 - 0.62 = 0.03 \log K_s$

$K_s = 10^{-2.3} = 10^{-2.3}$



D'après 1

$$K = 10^{16.5}$$



~~Non~~ Oui

$$b. \frac{n_{\text{I}^-}}{n_{\text{S}_4\text{O}_6^{2-}}} = \frac{5 \times 10^{-2} \times 2 \times 10^{-1}}{1 \times 10^{-1} \times 1.8 \times 10^{-3} \times 6} = \frac{n_{\text{Na}_2\text{S}_4\text{O}_6} + \text{I}^-}{n_{\text{I}^-}}$$

$$n_{\text{I}^-} = 5 \times 10^{-2} \times 2 \times 10^{-1} - 1 \times 10^{-1} \times 1.8 \times 10^{-3} \times 6 = n_{\text{I}^-} = 5 \times 10^{-1} \times 2 \times 10^{-1} - 1 \times 10^{-1} \times 1.8 \times 10^{-3} = 8.2 \times 10^{-3}$$

$$\text{Donc } n_{\text{Cu}^{2+}} = \frac{1}{2} \times 8.2 \times 10^{-3} = 4.1 \times 10^{-3}$$

$$[\text{Cu}^{2+}] = 2.1 \times 10^{-1} \text{ mol} \cdot \text{L}^{-1}$$

7. Ajouter  $\text{Cu}^{2+}$ , s'il ne change son couleur, il n'y a pas  $\text{I}^-$

8. On mettes jusqu'à si le ~~couleur~~ couleur de la solution change de pourpre à vert.