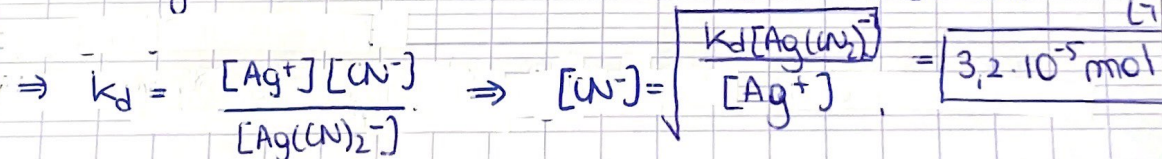
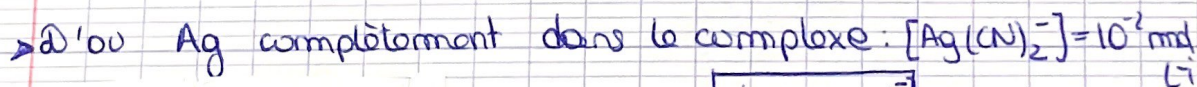
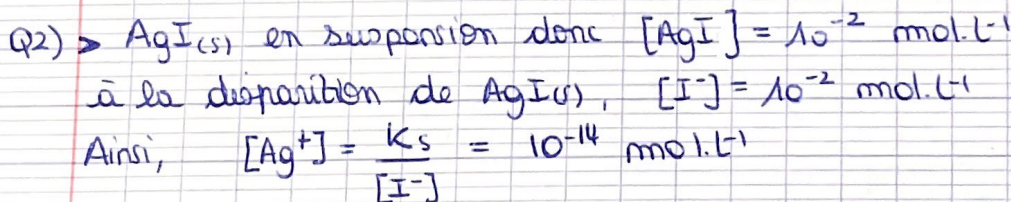
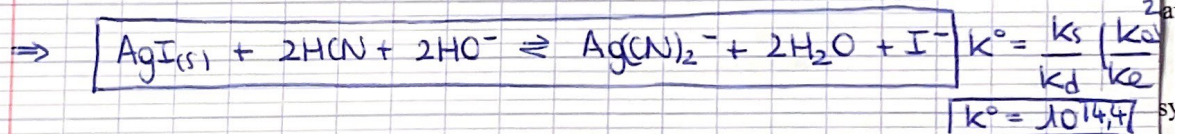
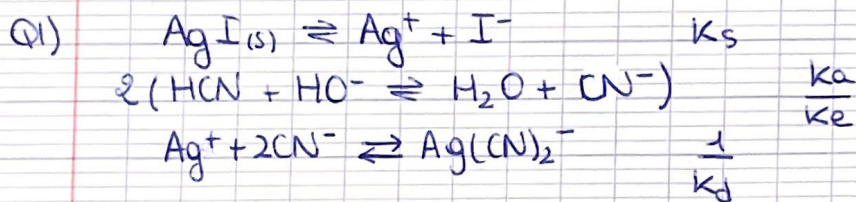
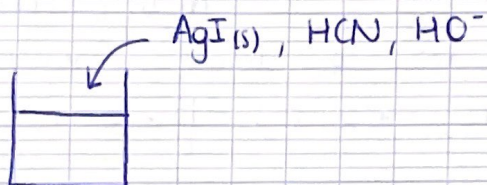


Exercice 12.



Q3) on cherche $[HCN]$: d'après la conservation des éléments

$$[Ag(CN)_2^-] + [HCN] + [CN^-] = 10^{-1}$$

$$\Rightarrow [HCN] = 8 \times 10^{-2} \text{ mol} \cdot \text{L}^{-1}$$

Alors $pH = pK_a + \log \frac{[CN^-]}{[HCN]} \Rightarrow \boxed{pH = 5,9}$

Q4) $[HO^-]_+ = \frac{K_e}{[H_3O^+]} = \frac{K_e}{10^{-pH}} = 10^{-8,1} \text{ mol} \cdot \text{L}^{-1}$

Et $[HO^-]_+ = [HO^-]_i - [HO^-]_{consommée}$
 $= [HO^-]_i - 2x$ en notant x l'avancement de la réaction (Q1)

puisque la réaction est totale, $x = [I^-]$

$$[HO^-]_i = [HO^-]_+ + 2[I^-] = \boxed{2 \times 10^{-2} \text{ mol} \cdot \text{L}^{-1} = [HO^-]_i}$$

Dans 1 litre de solution considérée, $\boxed{n_{HO^-}_i = 2 \times 10^{-2} \text{ mol}}$