Exerice 4

$\Omega = \{(x_1, \dots, x_p) \in \{1, \dots, N\} \text{ tq } \forall i \neq j, \text{ alors } x_i \neq x_j\}$

$\omega = (\omega_1, \dots, \omega_p) \in \Omega$

$X : \Omega \to \{0, \dots, n\}$

$$\omega \mapsto \sum_{k=1}^{p} \begin{cases} 1 \text{ si } \omega_k \leq n\} \\ 0 \text{ sinon} \end{cases}$$

$\forall k \in \{0, \dots, \min(n, p)\}$

$$\mathbb{P}(X = k) = \frac{\binom{n}{k}\binom{N-n}{p-k}}{\binom{N}{p}}$$

Loi hypergéometrique de paramtètre p, N, n