Exercice given at the end of Lecture 2.

By definition, a forest with k trees is a sequence $(\mathbf{t_1}, \ldots, \mathbf{t_k})$ of k trees. Denote by $\mathbb{F}_n^{(k)}$ the set of all forests with k trees and n vertices. Find a formula for $|\mathbb{F}_n^{(k)}|$.

Hint. Extend the bijection between trees of size n and $\overline{\mathcal{S}}_n^{(1)}$ to a bijection between $\mathbb{F}_n^{(k)}$ and $\overline{\mathcal{S}}_n^{(k)}$.