1. **Cayley's formula - number of distincts spanning tree in a complete graph**
2. For a positive integer n the number of trees on n labeled vertices are equal to ***n^(n-2)*.**
3. The number of labelled rooted [forests](https://en.wikipedia.org/wiki/Forest_(graph_theory)) on n vertices is equal to ***(n + 1)^(n − 1).***
4. Let ***T(n,k)*** be the number of labelled forests on n vertices, such that vertices 1, 2, ..., k all belong to different trees. Then ***T(n,k) = k n^(n − k − 1)***.
5. **Kirchhoff's theorem - number of distincts spanning tree**

Equivalently the number of spanning trees is equal to *any* cofactor of the Laplacian L matrix of *G*, where L is equal to the difference between the graph degree matrix D and the adjacency matrix A where Aij is the number of edges connecting vertices i and j. All cofactors of matrix L are equal to each other.

***L = D - A***

To obtain a cofactor of matrix L you can delete one line and one column of L to obtain L’ and calculate abs(|L’|), the determinante will be equal to a cofactor of L which is equivalent to the number of distinct spanning trees of the graph.

Hint : You can also get the answer by analysing the cycles of the graph.