

Cayley's Formula

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Abstract

Through the use of combinatorics we explore the basic conceptual definitions of graph theory. We use a counting argument from André Joyal to prove Cayley's formula, that states: *For any positive integer n , the number of all trees with vertex set $[n]$ is $A_n = n^{n-2}$.*

Prerequisite

Math 251 (Calculus I)

References

- [1] Bóna Miklós, *A Walk Through Combinatorics: An Introduction to Enumeration and Graph Theory*, 3rd Edition; World Scientific Pub.; New Jersey, 2013.