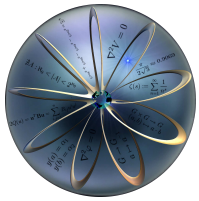

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Wedderburn-Etherington number

Canonical name	WedderburnEtheringtonNumber
Date of creation	2013-03-22 16:49:32
Last modified on	2013-03-22 16:49:32
Owner	PrimeFan (13766)
Last modified by	PrimeFan (13766)
Numerical id	6
Author	PrimeFan (13766)
Entry type	Definition
Classification	msc 05A15
Synonym	Wedderburn Etherington number
Synonym	Etherington-Wedderburn number

The nth *Wedderburn-Etherington number* counts how many weakly binary trees can be constructed such that each graph vertex (not counting the root vertex) is adjacent to no more than three other such vertices, for a given number n of nodes. The first few Wedderburn-Etherington numbers are 1, 1, 1, 2, 3, 6, 11, 23, 46, 98, 207, 451, 983, etc. listed in A001190 of Sloane's OEIS. Michael Somos gives the following recurrence relations:

$$a_{2n} = \frac{1}{2} a_n a_{n+1} + \sum_{i=1}^{n} a_i a_{2n-i}$$

and

$$a_{2n-1} = \sum_{i=0}^{n-1} a_{i+1} a_{2n-i}$$

with $a_1 = a_2 = 1$ in both relations.