Qu'il sache lacer ses chaussures !

Laçage

Nouage

Laçage

$$2^{2n} \times (2n)!$$

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n=5

3 715 891 200

http://www.fieggen.com/shoelace/index.htm

$$\frac{(n!)^2}{2}\sum_{k=0}^{\lfloor n/2 \rfloor}\frac{1}{n-k}\binom{n-k}{k}^2$$

« Using standard combinatorial techniques,
we find that the number of n-lacings is

$$\frac{(n!)^2}{2} \sum_{k=0}^{\lfloor n/2 \rfloor} \frac{1}{n-k} \left| \begin{matrix} n-k \\ k \end{matrix} \right|^2$$

»

Mathematics: What is the best way to lace your shoes?
Burkard Polster
Nature 420, 476 (5 December 2002)

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51 840

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Nouage