

$$123456789 = 100$$

There's a well-known classic puzzle: "Using the digits 1 through 9 in order and no other digits, write an expression that equals 100." There is a simple elegant solution of $1+2+3+4+5+6+7+8\times 9$. This paper provides a different solution, elegant in that it uses no binary operators.

The diagram shows a large, nested structure of brackets and square roots. The innermost part of the structure is the expression $\sqrt{[\sqrt{123456789}]!}$. This is followed by a series of square root symbols, each with a diagonal slash, representing a sequence of square roots. The entire structure is enclosed in a large right-facing square bracket on the right side, with two exclamation marks (!) positioned to the right of the bracket's vertical line.

=100

Inspired by Donald Knuth's seminal paper "Representing Numbers Using Only One 4" (Mathematics Magazine, Vol. 37, Nov/Dec 1964, pp. 308-310)