

The Towers of Hanoi with p pegs

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The *Towers of Hanoi* is a classic puzzle introduced by the mathematician É. Lucas in 1883. Given N disks and 3 pegs, with all the disks initially placed on one peg in increasing order according to size, the goal is to move all the disks to another peg, without ever placing a larger disk on a smaller one. The solution is simple and can be described using a recursive procedure.

A well-known generalization asks for the minimum number of moves when $p \geq 3$ pegs are available. This problem is much more difficult and only recently the case $p = 4$ was solved by Bousch. The purpose of my talk is to describe the problem in more detail and then present a lower bound on the number of moves needed for $p \geq 5$ pegs and N disks. This lower bound is asymptotically better than the previously best known when p is fixed and N tends to infinity.