

A pentagonal board from Hungary

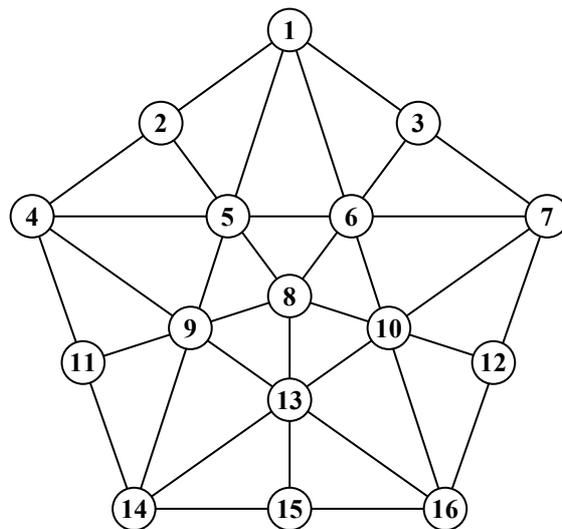
John Beasley, May 2016

George Bell recently drew my attention to a paper “How to solve puzzles? - Peg solitaire with optimization” by Imre Polík. This is available on

<http://blogs.sas.com/content/operations/2015/03/11/how-to-solve-puzzles-peg-solitaire-with-optimization/>

and is concerned with computing rather than with peg solitaire, but it uses as a test example a problem on an attractive pentagonal solitaire board developed by Merse Előd Gáspár (who is not named in the paper, being described merely as “a friend”, and whose name I owe to correspondence with the author). But the paper confines itself to the solution of elementary problems by a particular computer algorithm, and those whose interests are in peg solitaire rather than in computing will find that the board has a lot more to offer.

Merse Előd Gáspár’s board is shown here:



Note that while we can jump into and out of the centre, we cannot jump across it.

This board is far superior to the pentagram board which is Figure 14.13 in *The Ins and Outs*. The holes are more evenly spaced (a point of importance to board makers, however irrelevant it may be theoretically), and the problem “vacate the central hole and play to leave a single survivor there” can be solved.

More generally, the holes divide into two sets, the inner six and the outer ten, and a single-vacancy single-survivor problem can be solved if and only if the initial vacancy and the hole to receive the final survivor are in the same set. I have not attempted to minimize moves, but the centre-peg problem “vacate and finish at 8” has a solution with a seven-sweep as its penultimate move, and “vacate and finish at 13” can be finished with an eight-sweep. Further problems which readers may care to try are “vacate and finish at 1 ending with a five-sweep around the edge”, “vacate 8 and play to leave a symmetric six-man pattern with men in 8 itself and in the five outside corners 1/4/7/14/16”, “vacate 15, mark the men at 14 and 16, and play to interchange them clearing the rest of the board”, and “vacate 1, mark the men at 4 and 7, and play to interchange them similarly”. All can be solved.

Merse tells me that he submitted the board as a competition entry at the Fifth National Hungarian Annual Puzzle Meeting at Bakonysárkány in 2011, and that it won second prize. It is a very pleasant addition to the fold.