Hi-q

What is the quickest solution of the game Hi-Q (also called Solitaire)?

For those of you who aren't sure what the game looks like:

32 movable pegs ("+") are arranged on the following board such that
only the middle position is empty ("-"). Just to be complete: the board
consists of only these 33 positions.

```
      1 2 3 4 5 6 7
  1       + + +
  2       + + +
  3   + + + + + + +
  4   + + + - + + +
  5   + + + + + + +
  6       + + +
  7       + + +
```

A piece moves on this board by jumping over one of its immediate
neighbor (horizontally or vertically) into an empty space opposite.
The peg that was jumped over, is hit and removed from the board. A
move can contain multiple hits if you use the same peg to make the
hits.

You have to end with one peg exactly in the middle position (44).

Solution:

```
1:      46*44
2:      65*45
3:      57*55
4:      54*56
5:      52*54
6:      73*53
7:      43*63
8:      75*73*53
9:      35*55
10:     15*35
11:     23*43*63*65*45*25
12:     37*57*55*53
13:     31*33
14:     34*32
15:     51*31*33
16:     13*15*35
17:     36*34*32*52*54*34
18:     24*44
```

Found by Ernest Bergholt in 1912 and was proved to be minimal by John
Beasley
in 1964.

see also entry "peg.solitaire"

References (out of print, unfortunately):
        The Ins and Outs of Peg Solitaire
        John D Beasley
        Oxford U press, 1985
        ISBN 0-19-853203-2

        Winning Ways, Vol. 2, Ch. 23
        Berlekamp, E.R.
        Academic Press, 1982
        ISBN 01-12-091102-7