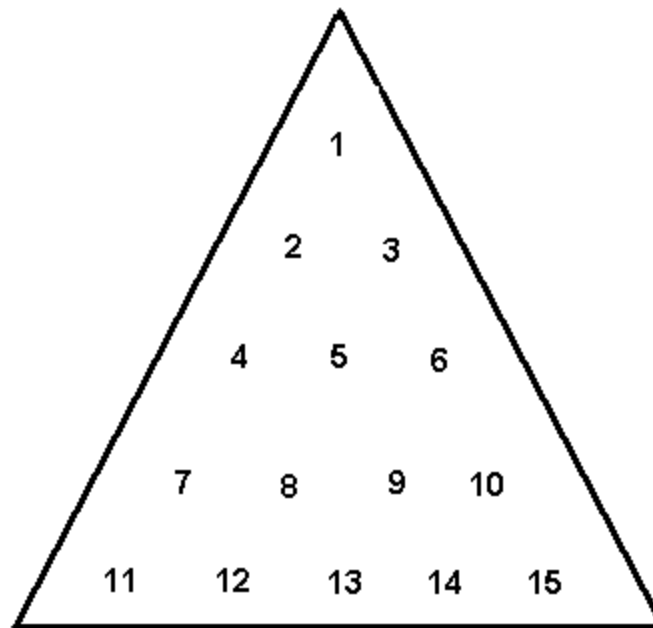


## The Peg Puzzle Challenge

The peg puzzle, often found in a well-known chain of country-themed restaurants along interstates, is a timeless brain teaser. Shaped like a triangle with fifteen holes and fourteen tees, it challenges players to jump one tee over another, landing in an empty hole, and removing the jumped tee. It's highly addictive and, as anyone who's tried it knows, frustratingly difficult to master.



## The Quest for Elegance

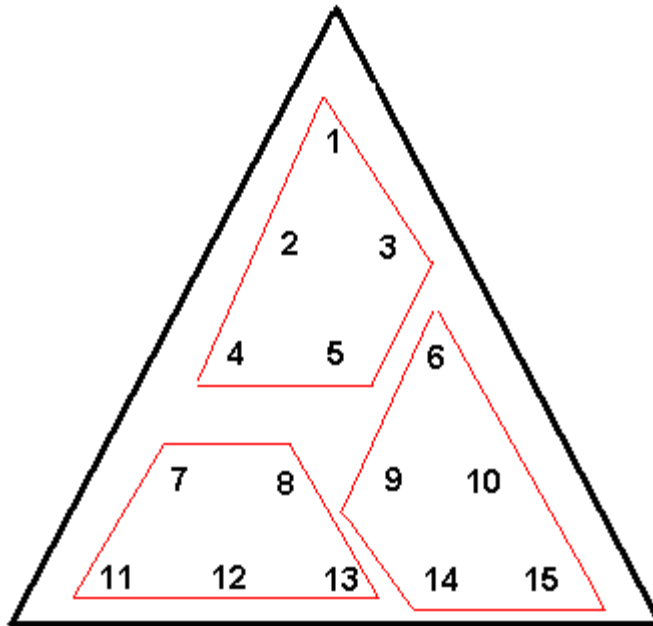
For those seeking an elegant solution, here's a twist: Start with the hole in a specific position and aim to leave the last tee in that very same hole. While not necessary for gameplay, this symmetry adds a satisfying touch of artistry to the challenge. Through careful planning and strategic jumps, achieving this goal is certainly possible.

## Maximizing Leftover Tees

Now, if you decide to embrace the defeatist route—leaving tees on the board—the maximum you can leave is ten. While leaving so many tees might feel like a loss, there's a unique charm in leaving the maximum number behind.

## Simplifying the Solution

Here's a key insight: You don't need to compute all possible combinations for the puzzle. By leveraging rotational symmetry, you only need to solve for five starting positions. The rest of the solutions can be derived by rotating the triangle accordingly. This makes tackling the puzzle much more efficient and manageable. A relatively quick computer program later, this nerd found the answers shown below.



**Starting with the hole in Position 1:**

Move #	Take the Tee in this position	Jump over the Tee in this position (remove this tee)	Landing in the hole in this position
1.	4	2	1
2.	6	5	4
3.	1	3	6
4.	7	4	2
5.	10	6	3
6.	12	8	5
7.	14	13	12
8.	11	12	13
9.	13	9	6
10.	3	6	10
11.	15	10	6
12.	6	5	4
13.	4	2	1

**Starting with the hole in Position 2:**

Move #	Take the Tee in this position	Jump over the Tee in this position (remove this tee)	Landing in the hole in this position
1.	7	4	2
2.	6	5	4
3.	1	3	6
4.	2	4	7
5.	10	6	3
6.	12	8	5
7.	14	13	12
8.	11	12	13
9.	13	9	6
10.	3	6	10
11.	15	10	6
12.	6	5	4
13.	7	4	2

**Starting with the hole in Position 3:**

Move #	Take the Tee in this position	Jump over the Tee in this position (remove this tee)	Landing in the hole in this position
1.	10	6	3
2.	4	5	6
3.	1	2	4
4.	3	6	10
5.	7	4	2
6.	13	8	4
7.	2	4	7
8.	11	7	4
9.	15	14	13
10.	12	13	14
11.	14	9	5
12.	4	5	6
13.	10	6	3

**Starting with the hole in Position 4:**

Move #	Take the Tee in this position	Jump over the Tee in this position (remove this tee)	Landing in the hole in this position
1.	1	2	4
2.	6	3	1
3.	4	5	6
4.	10	6	3
5.	1	3	6
6.	13	8	4
7.	7	4	2
8.	15	14	13
9.	12	13	14
10.	14	9	5
11.	6	5	4
12.	2	4	7
13.	11	7	4

### Starting with the hole in Position 5:

For starting with a hole in position 5, there is no elegant solution. But if you start with a hole there, you can leave the most tees in the puzzle – 10, taking only four moves! There are two ways to do this, the second is just a reflection of the first.

Move #	Take the Tee in this position	Jump over the Tee in this position (remove this tee)	Landing in the hole in this position
1.	14	9	5
2.	2	5	9
3.	12	8	5
4.	9	5	2

OR

1.	12	8	5
2.	3	5	8
3.	14	9	5
4.	8	5	3

Just in case someone doesn't want to rotate the puzzle and solve as above, I've translated the moves for starting with a hole in the other positions.

**Starting with the hole in Position 6:**

Move #	Take the Tee in this position	Jump over the Tee in this position (remove this tee)	Landing in the hole in this position
1.	15	10	6
2.	13	14	15
3.	6	9	13
4.	12	13	14
5.	15	14	13
6.	4	5	6
7.	3	6	10
8.	11	7	4
9.	2	4	7
10.	7	8	9
11.	13	9	6
12.	10	6	3
13.	1	3	6



**Starting with the hole in Position 7:**

Move #	Take the Tee in this position	Jump over the Tee in this position (remove this tee)	Landing in the hole in this position
1.	2	4	7
2.	13	8	4
3.	11	12	13
4.	7	4	2
5.	14	13	12
6.	6	9	13
7.	12	13	14
8.	15	14	13
9.	1	3	6
10.	10	6	3
11.	3	5	8
12.	13	8	4
13.	2	4	7

**Starting with the hole in Position 8: (Leaving 10)**

Move #	Take the Tee in this position	Jump over the Tee in this position (remove this tee)	Landing in the hole in this position
1.	3	5	8
2.	12	8	5
3.	10	9	8
4.	5	8	12

**OR**

1.	10	9	8
2.	7	8	9
3.	3	5	8
4.	9	8	7

**Starting with the hole in Position 9: (Leaving 10)**

Move #	Take the Tee in this position	Jump over the Tee in this position (remove this tee)	Landing in the hole in this position
1.	7	8	9
2.	10	9	8
3.	2	5	9
4.	8	9	10

**OR**

1.	2	5	9
2.	14	9	5
3.	7	8	9
4.	5	9	14

**Starting with the hole in Position 10:**

Move #	Take the Tee in this position	Jump over the Tee in this position (remove this tee)	Landing in the hole in this position
1.	3	6	10
2.	13	9	6
3.	15	14	13
4.	10	6	3
5.	12	13	14
6.	2	5	9
7.	7	4	2
8.	1	2	4
9.	4	8	13
10.	14	13	12
11.	11	12	13
12.	13	9	6
13.	3	6	10

**Starting with the hole in Position 11:**

Move #	Take the Tee in this position	Jump over the Tee in this position (remove this tee)	Landing in the hole in this position
1.	13	12	11
2.	4	8	13
3.	11	7	4
4.	14	13	12
5.	8	4	7
6.	10	9	8
7.	3	6	10
8.	9	10	6
9.	6	5	4
10.	7	4	2
11.	1	2	4
12.	4	8	13
13.	13	12	11

**Starting with the hole in Position 12:**

Move #	Take the Tee in this position	Jump over the Tee in this position (remove this tee)	Landing in the hole in this position
1.	14	13	12
2.	4	8	13
3.	11	7	4
4.	12	13	14
5.	2	4	7
6.	10	9	8
7.	3	6	10
8.	15	10	6
9.	6	5	4
10.	7	4	2
11.	1	2	4
12.	4	8	13
13.	14	13	12

**Starting with the hole in Position 13:**

Move #	Take the Tee in this position	Jump over the Tee in this position (remove this tee)	Landing in the hole in this position
1.	11	12	13
2.	4	7	11
3.	13	8	4
4.	2	4	7
5.	11	7	4
6.	6	9	13
7.	14	13	12
8.	1	3	6
9.	10	6	3
10.	3	5	8
11.	4	8	13
12.	12	13	14
13.	15	14	13

**Starting with the hole in Position 14:**

Move #	Take the Tee in this position	Jump over the Tee in this position (remove this tee)	Landing in the hole in this position
1.	12	13	14
2.	6	9	13
3.	15	10	6
4.	14	13	12
5.	3	6	10
6.	4	5	6
7.	10	6	3
8.	1	3	6
9.	11	7	4
10.	2	4	7
11.	7	8	9
12.	6	9	13
13.	12	13	14



**Starting with the hole in Position 15:**

Move #	Take the Tee in this position	Jump over the Tee in this position (remove this tee)	Landing in the hole in this position
1.	6	10	15
2.	13	9	6
3.	15	14	13
4.	3	6	10
5.	12	13	14
6.	2	5	9
7.	7	4	2
8.	1	2	4
9.	4	8	13
10.	14	13	12
11.	11	12	13
12.	13	9	6
13.	6	10	15