# Decorating (solution)

by Ong Kah Kien

There are 15 given puzzle pieces which each depict an image. The first step is to identify these images which will be able to help solvers decide which pieces should go into which of the three grids. As hinted by the phrase "one-acre garden" in the flavortext, each image references a phrase in a similar format, with the numeric quantity also corresponding to the number of spaces in that piece, and the dimension unit being either inch, yard or mile, corresponding to the piece belonging based in magnitude to the small, medium or large grid respectively. The table below summarizes the pieces which are formatted in the puzzle in alphabetical order of the last part of the names of their images, and the grids they belong to:

| Image | Grid |
|---|---|
| Six-yard box | Medium |
| Seven Mile Bridge | Large |
| Five-inch gun | Small |
| Four-inch heel | Small |
| Three Mile Island | Large |
| Ten Mile Junction | Large |
| Three-mile limit | Large |
| Five-yard line | Medium |
| Nine Inch Nails | Small |
| Five-yard penalty | Medium |
| One-inch punch | Small |
| Seven-inch record | Small |
| Eight Mile Road | Large |
| Nine-yard saree | Medium |
| Six-yard touchdown | Medium |

The next step is to solve the three Statue Park grids using their associated pieces. The logic paths and solutions for each grid are outlined below over the following pages. The black circles have been numbered in the solutions for ease of reference in the described logic paths.

**Logic solution for small grid:**

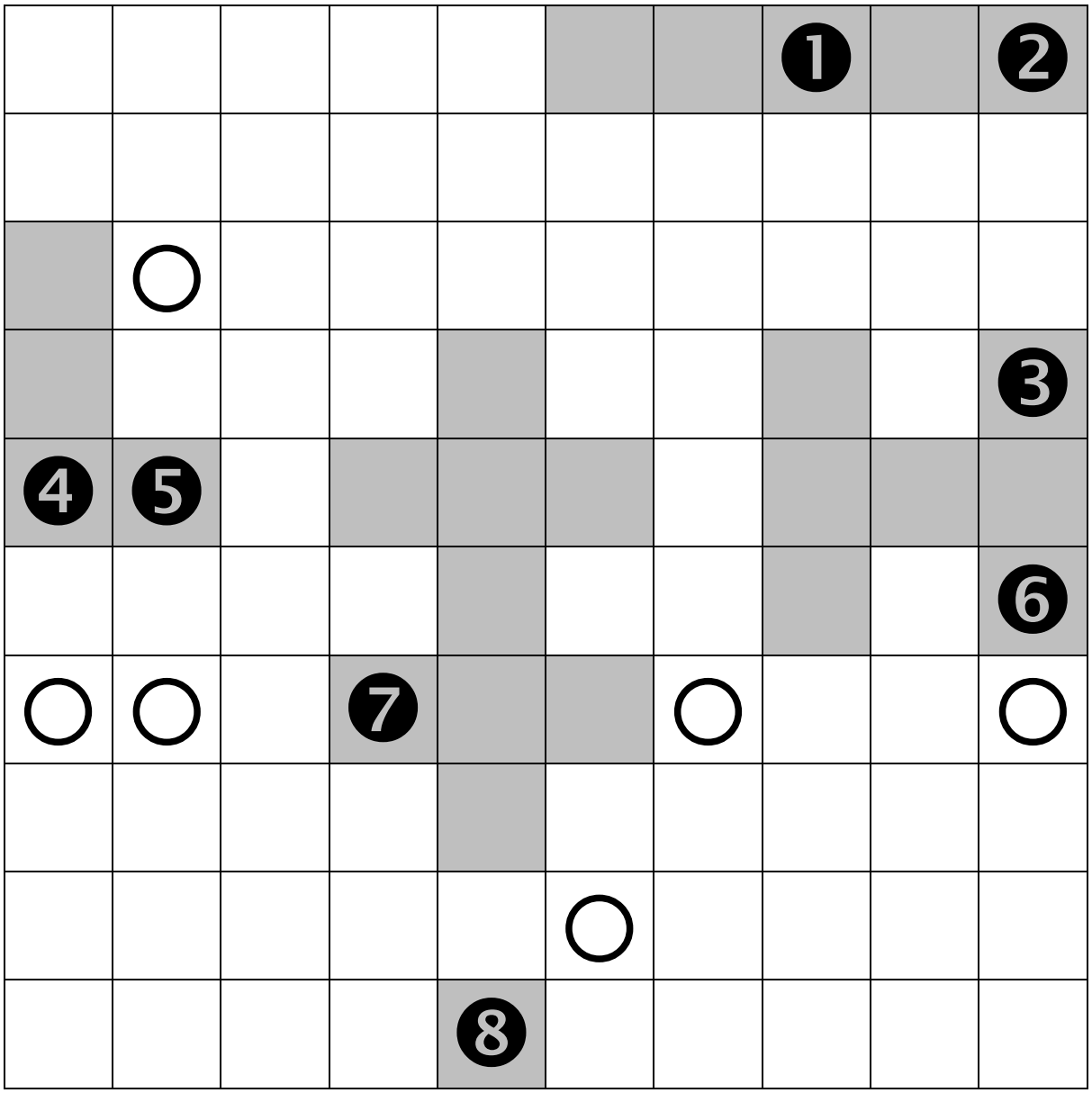
1) There are 8 black circles for 5 pieces, so ❶ and ❷ must be occupied by the same piece, and ❸ and ❻ must be occupied by another piece.
2) The 9-space piece cannot occupy the black circles along the edges, otherwise it would either isolate some blank spaces, or also adjoin ❼. So the 9-piece must occupy ❼.
   a) To avoid the white circles, adjoining other black circles, or creating an isolated blank region, there are only two possible orientations for the 9-space piece – the other being horizontally with ❼ on its bottom-left space. Both orientations rule out the 5-space and 7-space pieces occupying ❹ and ❺.
   So the 4-space piece must occupy that position, and can only be in the orientation shown in the grid below.
   b) Therefore, ❸ and ❻ must be occupied by the 7-space piece in the orientation

shown in the grid below (since the 5-space piece is also already ruled out by the nearby white circle and ❷).

c) This narrows down the 9-space piece to the orientation shown in the grid below.

3) This leaves the 5-space piece occupying ❶ and ❷ in the orientation shown in the grid below.
4) The remaining 1-space piece occupies ❽.

**SOLUTION FOR SMALL**



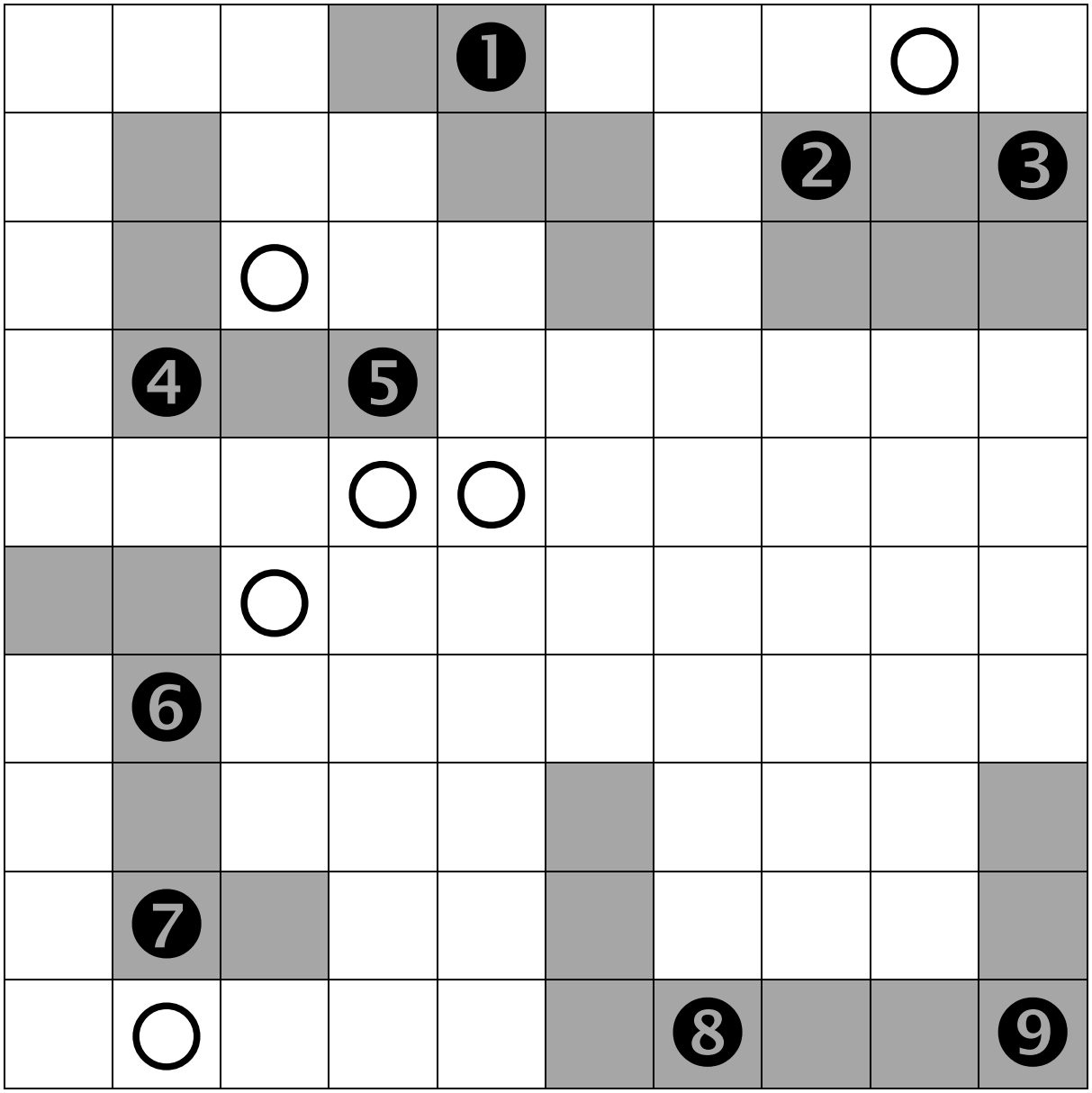

**Logic solution for medium grid:**

1) There are 9 black circles for 5 pieces, so ❽ and ❾ must be occupied by the same piece, which can only be the 9-space piece in the orientation shown in the grid below.
2) ❶ and ❷ can only be occupied together using the Z-shaped piece, but then ❸ can no longer fit any piece. So ❷ and ❸ have to be occupied by the same piece instead.
3) ❶ and ❺ can only be occupied together using the Z-shaped piece, but this will adjoin

❹. So ❹ and ❺ have to be occupied by the same piece instead.

4) Therefore, ❻ and ❼ have to be occupied by the same piece.
5) The preceding three pieces cannot be the W-shaped piece, as they occupy two black circles one space apart. So the W-shaped piece occupies ❶, and must be in the orientation shown in the grid below, otherwise it will adjoin ❺ or ❷ or isolate some blank spaces at the top right corner.
6) The piece occupying ❷ and ❸ and the piece occupying ❹ and ❺ are both not the Z-shaped piece, otherwise it will adjoin the W-shaped piece. So the Z-shaped piece occupies ❻ and ❼ and can only be in the orientation shown in the grid below.
7) The piece occupying ❹ and ❺ is not the rectangle, so it must be the L-shaped piece in the orientation shown in the grid below.
8) The piece occupying ❷ and ❸ must be the remaining rectangle, and in the orientation shown in the grid below.

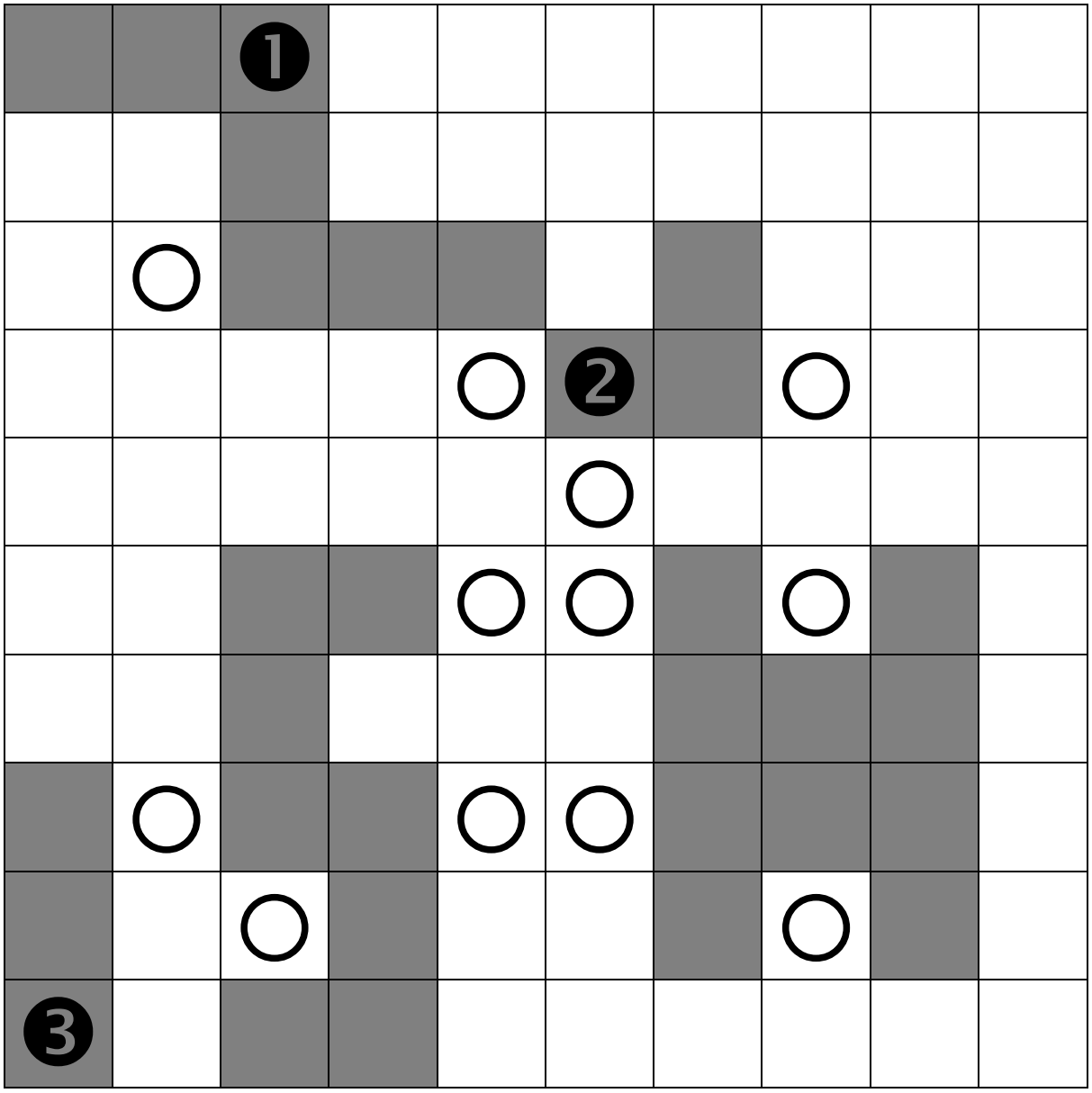
**MEDIUM**



**Logic solution for large grid:**

1) ❷ and ❸ cannot be occupied by the larger pieces, so must be occupied by the two trominoes.
2) ❶ cannot be occupied by the S-shaped or H-shaped pieces, so it must be occupied by the Z-shaped piece in the orientation shown in the grid below.
3) The S-shaped piece can only fit in the position and orientation shown in the grid below.
4) The H-shaped piece can only fit in the position and orientation shown in the grid below.
5) ❷ must be occupied by the L-shaped piece in the orientation shown in the grid below.
6) ❸ must be occupied by the I-shaped piece in the orientation shown in the grid below.

**LARGE**



The positions of all the pieces across the three grids are non-overlapping. Replicating these on the final letter grid as shown below leaves 12 occupied spaces which spell out another thematic decoration for the garden and the answer for this puzzle **TWO-FOOT TUSKS**.

| K | C | E | T | F | G | U | R | N | A |
|---|---|---|---|---|---|---|---|---|---|
| T | M | H | W | Y | B | O | H | E | C |
| S | L | I | V | D | A | Y | G | M | P |
| P | N | B | H | M | K | D | W | F | R |
| G | M | O | E | R | N | O | L | J | A |
| K | H | S | N | Y | T | R | K | D | H |
| T | L | H | P | R | F | I | Y | B | U |
| I | E | O | A | L | D | T | S | Z | D |
| N | H | P | V | S | C | G | K | X | S |
| L | S | A | U | E | L | Q | H | P | T |

Constructor's notes:

The format of the answer phrase led to initial ideas to use length or unit elements for some part of this puzzle. The decoration theme also eventually steered me towards grid-based puzzles, and specifically region-division or tile-placement type of Nikoli logic puzzles, which could be analogous to the theme. Amongst the many options, Statue Park was clearly the best fit for this theme, and also had the advantage of not having an online solver which could find solutions using tiles beyond the standard trominoes, pentominoes and hexominoes.