# UKPA Open Tournament
# 2nd March, 2025
# Round 5
# Tour Down Under

## Puzzles by Anthea McMillan, Helen Arnold, James McGowan and Bram de Laat

| | Puzzle | Points |
|---|---|---|
| 1 | ACT: Roundabout Hashi | 25 |
| 2 | NSW: Skyscrapers | 47 |
| 3 | QLD: Cassowaries and Drop Bears | 13 |
| 4 | NT: Crocodile Hunters | 55 |
| 5 | WA: Minesweeper | 25 |
| 6 | SA: Ripple Effect | 37 |
| 7 | VIC: Akari | 14 |
| 8 | TAS: Nurikabe | 13 |
| 9 | NZ:  Sheep | 37 |
| | **Total** | **266** |

**Time: 45 minutes.**

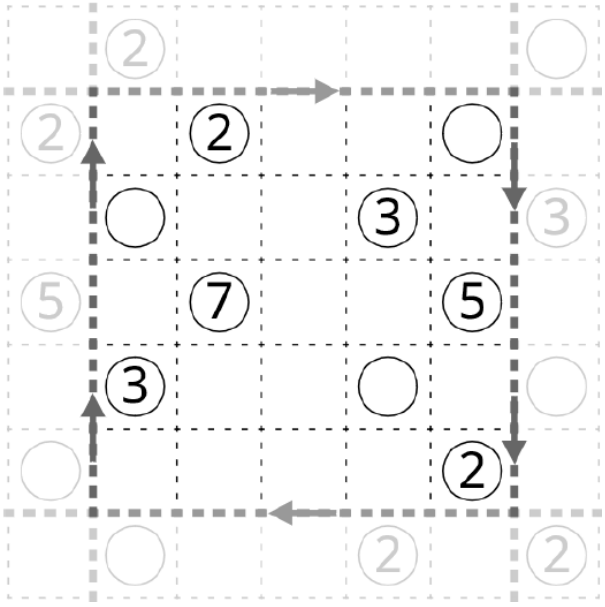
**Note:** Fun facts about the jurisdictions are included in the instruction booklet.  These will not be included in the competition booklet.

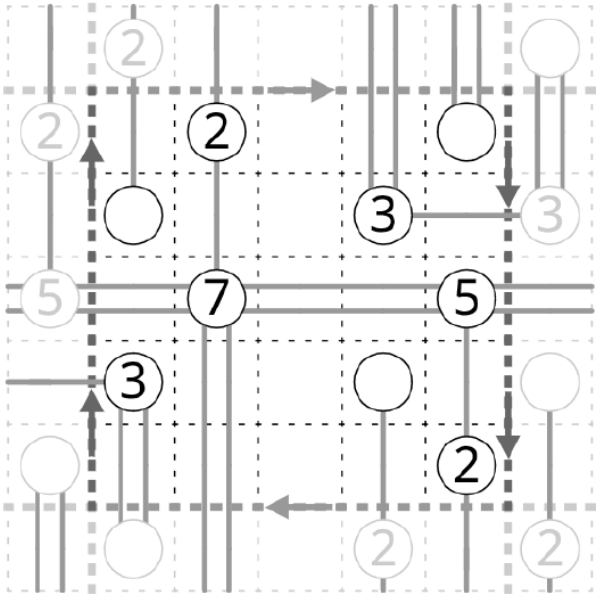
## 1 ACT: Roundabout Hashi (25)

*The ACT is home to Australia's capital city and Parliament. Maybe that's why we spend so much time going around in circles. Visitors always complain about the roundabouts.*

Each circle containing a number represents an island. Connect each island with vertical or horizontal bridges so that the number of bridges connected to an island equals the number inside the island and there must be a continuous path connecting all the islands. There can be up to two bridges between two islands. Bridges cannot cross islands or other bridges.
The grid is a projective plane, meaning that the first row is adjacent to the last row (in reversed order) and similarly the first column is adjacent to the last column in reversed order). For example, the fop left corner of the grid is the same point as the bottom right corner. The top right corner of the grid is the same point as the bottom left corner. If a circle connects to itself both endpoints of the connections are included in the count (i.e. the segment will be counted twice).

The first and last row and column are duplicated on the opposite sides of the grid (in reversed order) in light grey for convenience. It is sufficient to draw the connections within the main part of the grid.

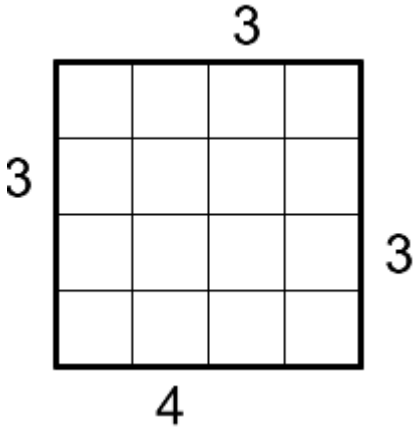


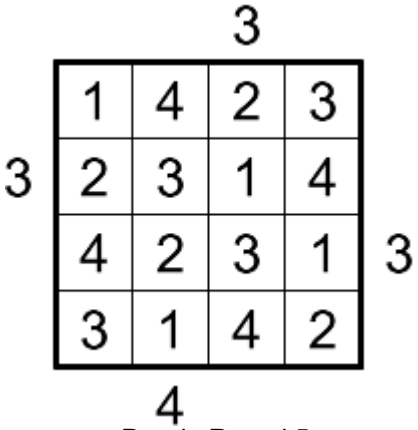


## 2 NWSL Skyscrapers (47)

*We're not good at naming icons here in Australia. Want to build an opera house in Sydney? Let's call it the Sydney Opera House. Need a bridge built over the harbour? Why not call it the Sydney Harbour Bridge? Fun fact: the tallest structure in Sydney is a skyscraper called the Sydney Tower Eye... so here's a Skyscrapers.*

Place the digits 1-6 (1-4 in the example) once in every row and column. Digits in the grid indicate skyscrapers of that height. Clues on the outside indicate the number of skyscrapers visible in that row or column from that side. Larger skyscrapers block the sight of smaller skyscrapers.

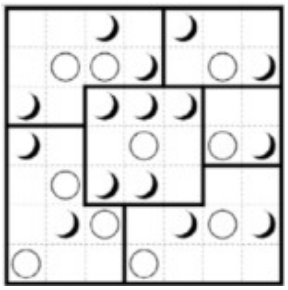


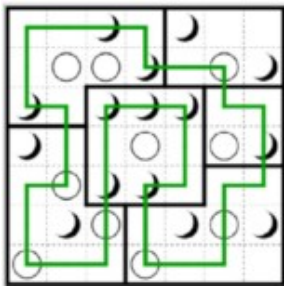



## 3 QLD: Cassowaries and Drop Bears (13)

*Australian wildlife is dangerous. So next time you're in the Sunshine State, remember: dropbears are south, cassowaries are north. You deter drop bears by putting vegemite behind your ears. To escape cassowaries, you just have to run faster than the slowest person in your group.*

Draw a single closed loop in the grid. The loop may only go horizontally and vertically and may only turn on centres of cells. The loop visits each outlined region exactly once. In each region the loop must either visit all of the cassowaries (at least one) and none of the drop bears or all of the drop bears (at least one) and none of the cassowaries. The loop must alternate between the two symbols as it visits consecutive regions. Note: The example uses sun and moon symbols.

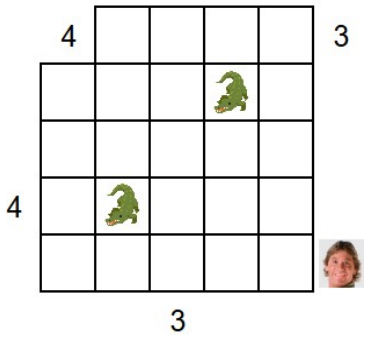


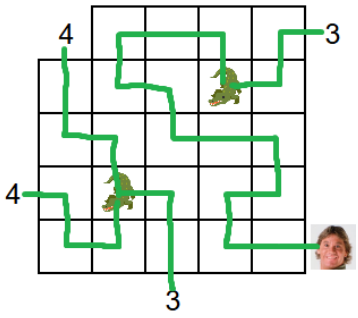


## 4 NT: Crocodile Hunters (55)

*Crikey! What do you do if you're getting rolled by a giant saltwater croc in the Outback? Poke them in the eyes. No, seriously, this is your second best plan of escaping a crocodile. The best plan is (obviously) not to get close enough to them in the first place.*

Each number outside the grid represents a crocodile hunter and the length of his rope.
Each hunter helps to catch one crocodile. The ropes run horizontally and vertically connecting the centres of cells.
Crocodiles are tough. Every crocodile needs to be caught by at least 3 crocodile hunters.
However, Steve Irwin and Crocodile Dundee are even tougher. They each have the strength of 3 crocodile hunters by themselves so may capture a crocodile without help. They can both have any length rope.
Apart from cells with crocodiles, each cell may only contain one rope and all cells must contain a rope segment.

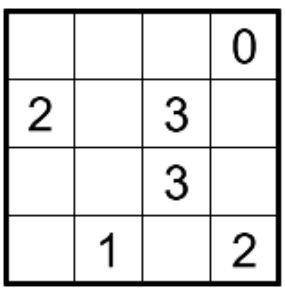


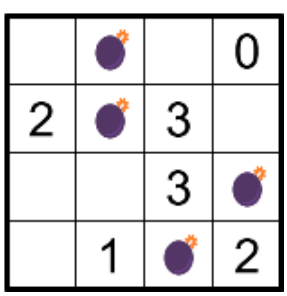




## 5 WA: Minesweeper (25)

*WA is famous for a few things: black swans, quokkas, Heath Ledger, and mining. We couldn't bring you Australian fauna, but we could make you a Minesweeper.*

Place a mine into some of the empty cells so that each number represents the total number of mines in the neighbouring cells, including diagonally adjacent cells.

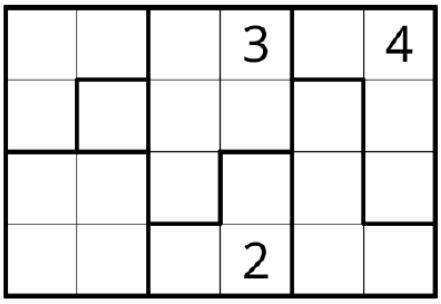


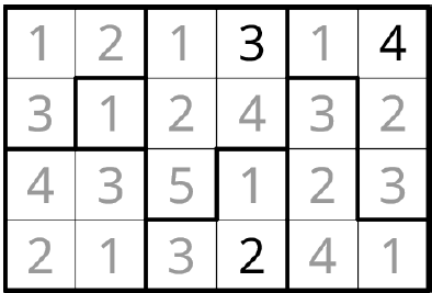



## 6 SA: Ripple Effect (37)

*Blue Lake (another creative name) in a volcanic crater near Mt Gambier is well worth a visit if you're ever in SA. It's famous for having different shades of blue at different seasons of the year.*

Place a number into each empty cell so that each region contains the numbers from 1 to N, where N is the number of cells in that regions. Identical numbers in the same row or column must be separated by at least as many cells (including holes) as the value of the number. Some numbers may be already placed in the grid.

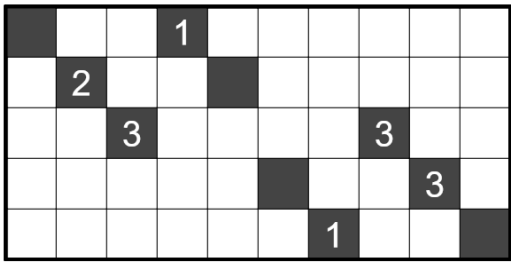


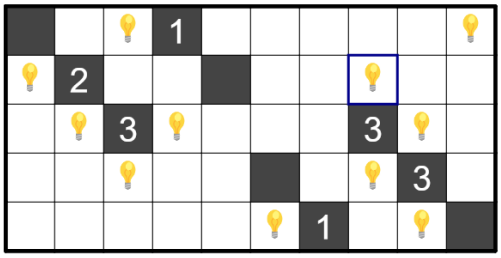




## 7 VIC: Akari (14)

*Australia's oldest lighthouse is in Victoria on the very scenic Great Ocean Road. Nicknamed the Beacon of Hope, it reminds people that the best coffee in Australia is only 3 hours up the road in Melbourne.*

Place light bulbs in some white cells in the grid so that every white cell is illuminated. A cell is illuminated by a light bulb if they are in the same row or column, and if there are no black cells between them. No light bulb may illuminate another light bulb, i.e two bulbs cannot be in the same row or column unless separated by a black cell). A number in a black cell indicates the number of light bulbs sharing an edge with that cell.

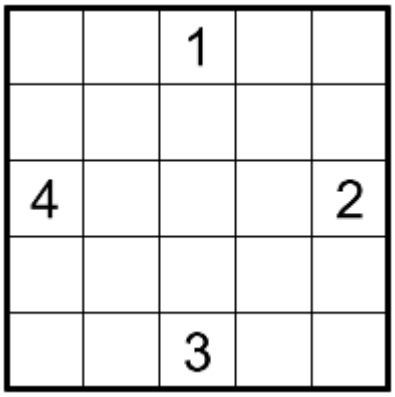


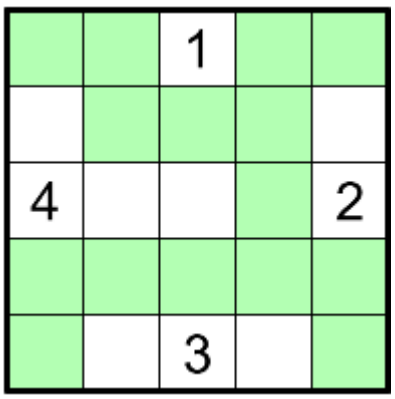




## 8 TAS: Nurikabe (13)

*Tasmania is about the same size as Switzerland but with cleaner air. Other than that, its main claim to fame is being the birthplace of Errol Flynn and Queen Mary of Denmark. The cheese is nice.*

Shade some cells to form a single connected wall. This wall cannot occupy a 2x2 area anywhere. Each number in the grid is part of a separate unshaded area, with the number indicating the number of cells in that area. Unshaded areas cannot touch each other by a side. Each unshaded area must contain exactly one number.



## 9 NZ: Sheep (37)

*Here in Australia we have a lot of sheep, but our Antipodean cousins across the ditch have 4.5 sheep for every single Kiwi. The only place with more sheep per person is the Falkland Islands. So we made a sheep puzzle just in case our Kiwi friends felt left out... since they're often left off maps.*

Although sheep generally live in flocks it has been necessary to quarantine this flock with each sheep in its separate corral 5 cells in size in the shape of an N or Z pentomino. The pentominoes may be rotated and/or reflected, however, they cannot touch each other, not even diagonally.

