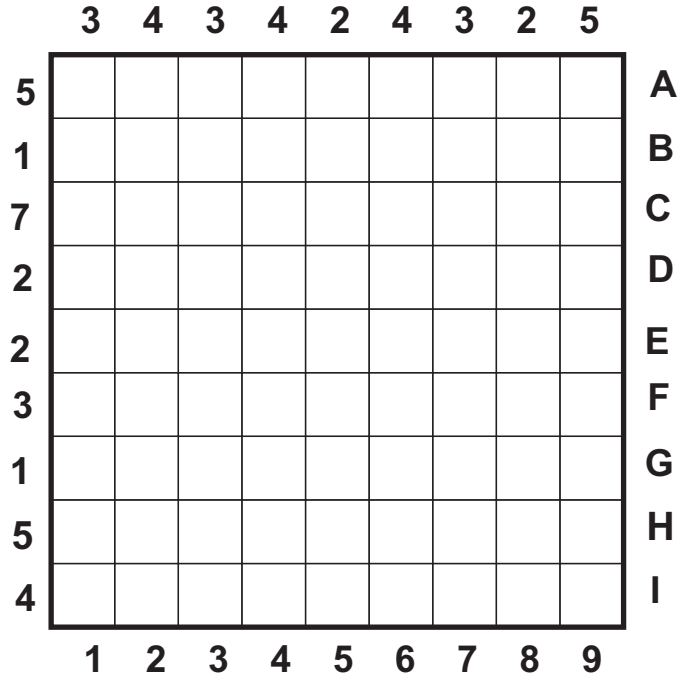
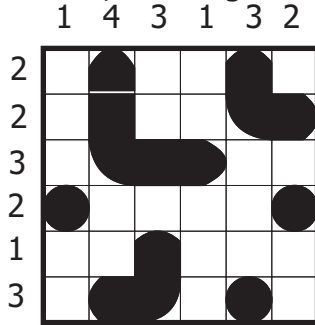
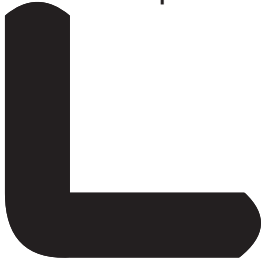


# RUBBER SHIPS

25 points

Locate the complete 10-ship fleet, 1 7-cell, two 5-cell, 3 3-cell, and 4 1-cell (the 7-cell ship is shown below). Ships cannot touch each other. Ships can occupy diagonally touching cells if one or both of the cells contain corner of the ship (ship makes a right angle at the corner). Hints on top and left indicate number of cells occupied by ships.

**Key:** Coordinates of all six corners, from larger to smaller ships.

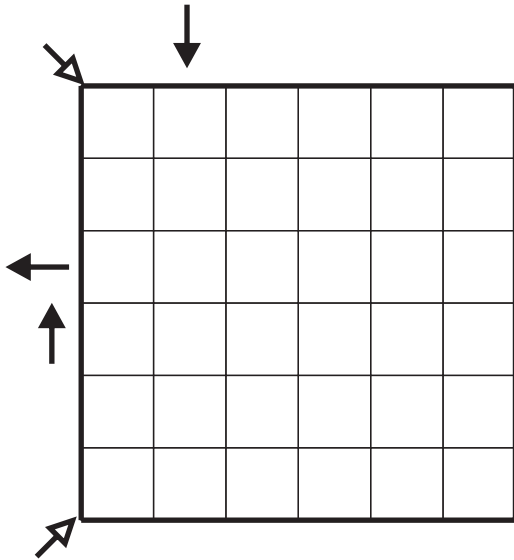


# ARROWSPACE

35 points

Locate seven arrows into the grid, at least one arrow going into every row and column. The arrows must be oriented in any seven of eight different directions, each arrow in a different direction. For each arrow, exactly three contiguous cells, immediately following the arrow, in the direction it is oriented, must be empty. Arrow outside must be oriented in that direction in corresponding row/column.

**Key:** Contents of both main diagonals, using N, S, E, W, NW, NE, SW, SE for arrows and B for blank cell.



# IDENTICAL LOOPS

30 points

Draw two identical loops, identical in both shape and perimeter, through the centers of the white cells. Loops cannot visit the grey cells and cannot overlap or intersect each other or themselves. Number of white cells inside each loop must be equal. The product (number of white cells inside the loop x perimeter of the loop) must be the largest.

**Key:** Contents of bottom-left top-right main diagonal. Use T if loop turns in the cell, or S if it goes straight, or E if the cell is empty.

