

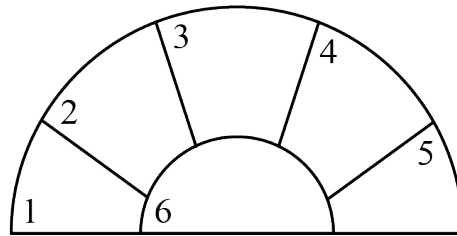


Problem of the Week

Problem D

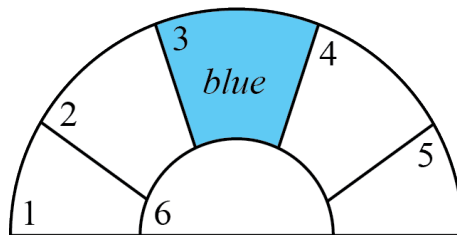
Adding Some Colour 2

Finn and Vidya play a game where they take turns colouring regions in the diagram shown red or blue. On their turn, each player colours a region in the diagram that is not bordering another region of the same colour.



After some number of turns, it won't be possible to colour any more regions, and the game will be over. The winner is the player who coloured the last region.

Finn went first. On his turn, he coloured region 3 blue, so after his turn the diagram is coloured as follows.



It is now Vidya's turn and there are five remaining regions. Determine all possibilities for the colour Vidya should use and the region she should choose in order to guarantee that she wins the game, regardless of what Finn does on his remaining turns.

