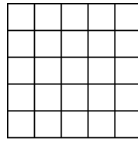


Puzzle 4 - SOLUTION

Problem 1 *There is a 5x5 board as the picture below shows. So happens, on each one of the fields there is a ladybug sitting. Suddenly, each decides to move to a neighboring field. (Two fields are neighbors if they have an edge in common.) Is it possible that after each have moved there is again exactly one ladybug sitting on each field?*



Solution 1 *This problem also boils down to coloring. Let us color the fields as if it was a chess board. Then we have 12 black and 13 white fields (or the other way around, 13 black and 12 white fields). Every bug that sat on a black field will sit on a white field, and every bug that sat on a white field will sit on a black field. Thus, it is impossible to have one bug on every field after the move.*