

An $m \times n$ chessboard with $m, n \geq 2$ is given.

Some dominoes are placed on the chessboard so that the following conditions are satisfied:

- (i) Each domino occupies two adjacent squares of the chessboard,
- (ii) It is not possible to put another domino onto the chessboard without overlapping,
- (iii) It is not possible to slide a domino horizontally or vertically without overlapping.

Prove that the number of squares that are not covered by a domino is less than $\frac{1}{5}mn$.