

Abstract Submitted
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The free energies of six-vertex models and the n-equivalence relation. KAZUHIKO MINAMI¹, Graduate School of Mathematics, Nagoya University — The free energies of six-vertex models on general domain D with various boundary conditions are investigated with the use of the n -equivalence relation which classifies the thermodynamic limit properties. It is derived that the free energy of the six-vertex model on the rectangle is unique in the limit where both the height and the width go to infinity. It is derived that the free energies of the model on D are classified through the densities of left/down arrows on the boundary. Specifically the free energy is identical to that obtained by Lieb and Sutherland with the cyclic boundary condition when the densities are both equal to $1/2$. This fact explains several results already obtained through the transfer matrix calculations. The relation to the domino tiling (or dimer, or matching) problems is also noted.

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