

# Exact critical temperature of Ising models with external field

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On the squares of two lattices, square and 4-8 lattice, besides the interactions between nearest neighbour spins, additional diagonal and four-spin interactions are present. Under some restrictions, by introducing central decorating spins on each square, the square lattice is transformed to another square lattice, while the 4-8 model becomes a square lattice with decorated bonds. Exact critical temperatures are obtained. In the case of antiferromagnetic interactions this is also possible in the case when an external magnetic field is acting on all lattice sites.

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