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Lindsay Anne Merchant* (Lindsay.Merchant@ndsu.edu), 21 South Broadway #406, Fargo, ND 58103. *A Nim-type game played on the complete graph.*

The two-player game of Nim on graphs is played on a simple graph with positive integrally weighted edges by moving alternately from a fixed starting vertex to an adjacent vertex, decreasing the weight of the incident edge to a strictly smaller non-negative integer. The game ends when a player is unable to move since all edges incident with the vertex from which the player is to move have weight zero. In this paper, we consider previously known results to this game, offer new strategies to the game on specific graphs, and give a solution to the complete graph with arbitrary weight. We also consider Nim on the n-Cube, and Nim on trees. (Received July 26, 2010)