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Graceful Labellings of Triangular Cacti

A graceful labelling of a graph with n edges is a vertex labelling using the elements $\{0, 1, \dots, n\}$ where the weight of an edge is the absolute difference between its two vertex labels, and all weights in $\{1, \dots, n\}$ are achieved. We use Skolem sequences to gracefully label two families of triangular cacti, and then generalize these results. Finally, we use Rosa's well known method to obtain decompositions of complete graphs into triangular cacti. Joint work with Ian Payne, Nabil Shalaby, and Brenda Wicks.