NOTES ON INTEGRAL COMPLETE MULTIPARTITE GRAPHS

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Abstract

A graph is called integral if all the eigenvalues of its adjacency matrix are integers. In our recent work, we have determined some classes of integral complete r-partite graphs $K_{p_1, p_2, ..., p_r} = K_{a_1 \cdot p_1, a_2 \cdot p_2, ..., a_s \cdot p_s}$ with $s = 5, 6$ in [L. G. Wang and Q. Wang, Integral complete multipartite graphs $K_{a_1 \cdot p_1, a_2 \cdot p_2, ..., a_s \cdot p_s}$ with $s = 5, 6$, Discrete Math. 310 (2010), 812-818]. In this note, we continue to investigate such integral graphs $K_{a_1 \cdot p_1, a_2 \cdot p_2, ..., a_s \cdot p_s}$ with $s = 5, 6$ by computer search. Infinite many new classes of such integral graphs are constructed by solving some certain Diophantine equations.