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Western Michigan University, Kalamazoo, MI 49009. *A Graph Theoretic Division Algorithm.*

A graph H is said to divide a graph G if G has an H -decomposition. A decomposition $\{H_1, H_2, \dots, H_k, R\}$ of G is called an H -maximal k -decomposition if $H_i \cong H$ for $1 \leq i \leq k$ and R contains no subgraph isomorphic to H . Let $Min(G, H)$ and $Max(G, H)$ be the minimum and maximum k , respectively, for which G has an H -maximal k -decomposition. A graph H without isolated vertices is said to possess the intermediate decomposition property if for each connected graph G and each integer k with $Min(G, H) \leq k \leq Max(G, H)$, there exists an H -maximal k -decomposition of G . Results and questions are presented in this area of research. (Received September 05, 2013)