

Pelabelan Simpul Antiajaib Lokal pada Graf Perkalian Korona Dua Lintasan = Local Antimagic Vertex Coloring of Corona Product Graph Two Paths

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Deskripsi Lengkap: <https://lib.ui.ac.id/detail?id=20525526&lokasi=lokal>

Abstrak

Misalkan $G=(V(G),E(G))$ adalah graf dengan himpunan simpul $V(G)$ dan himpunan busur $E(G)$. Misalkan $f:V(G) \rightarrow \{1,2,\dots,|E(G)|\}$ suatu pemetaan bijektif. Untuk setiap simpul $u \in V(G)$, bobot dari simpul u adalah $w(u)=|E(u)|$, dimana $E(u)$ adalah himpunan busur yang bersisian dengan u . Jika untuk setiap $u, v \in V(G)$ berlaku $w(u)w(v) \mid f(u)f(v)$ maka f disebut pelabelan antiajaib dari G . Selanjutnya, f disebut pelabelan antiajaib lokal jika untuk $u, v \in V(G)$ dengan u dan v bertetangga, maka $w(u)w(v) \mid f(u)f(v)$. Pelabelan antiajaib lokal memunculkan sifat pewarnaan simpul dimana simpul u diberi warna berdasar bobot $w(u)$. Bilangan kromatik antiajaib lokal graf G , dinotasikan $X_{la}(G)$ adalah banyaknya warna minimum pada pelabelan simpul yang ditimbulkan oleh pelabelan antiajaib lokal. Operasi perkalian korona dari dua graf G dan H , dinotasikan dengan $G \odot H$, adalah graf yang dibentuk dari graf G dan graf H dengan menyalin graf H sebanyak $|V(G)|$, sebut $H_1, H_2, \dots, H_{|V(G)|}$ selanjutnya ditambahkan busur sehingga semua simpul di H_i bertetangga dengan simpul x_i di G , untuk $1 \leq i \leq |G|$. Tesis ini membahas bilangan kromatik antiajaib lokal graf perkalian korona dua lintasan, yaitu $X_{la}(P_n \odot P_k)$, dimana $k=2,3,5$. Hasil penelitian menunjukkan bahwa bilangan kromatik pelabelan simpul antiajaib lokal, $X_{la}(P_n \odot P_k)$, untuk $k=2,3,5$ adalah $X_{la}(P_n \odot P_2)=6$ untuk $n \geq 4$, $X_{la}(P_n \odot P_3)=6$ untuk $n \geq 4$ and $X_{la}(P_n \odot P_5)=7$, untuk $n \geq 5$.

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labelling of G if for any two adjacent vertices $u, v \in V(G)$, then $w(u) \neq w(v)$. The local antimagic labeling induces a proper vertex coloring of G where the vertex v is assigned the color (vertex sum) $w(v)$. The local antimagic chromatic number, denoted $\chi_{la}(G)$, is the minimum number of colors taken over all colorings induced by local antimagic labelings of G . Let G and H be two graphs. The corona product graph $G \odot H$ is obtained by taking one copy of G along with $|V(G)|$ copies of H , and via putting extra edges making the i th vertex of G adjacent to every vertex of the i th copy of H , where $1 \leq i \leq |V(G)|$. This thesis discusses the local antimagic chromatic number of corona product graph two paths, $\chi_{la}(P_n \odot P_k)$, where $k=2,3,5$. The result showed that the chromatic number of local antimagic vertex coloring $P_n \odot P_k$, for $k=2,3,5$ are $\chi_{la}(P_n \odot P_2)=6$ for $n \geq 4$, $\chi_{la}(P_n \odot P_3)=6$, for $n \geq 4$, $\chi_{la}(P_n \odot P_5)=7$, for $n \geq 5$.

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