



SEMINARIUM MATEMATYKA DYSKRETNA

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The semi-strong product of graphs

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The semi-strong product of graphs is an orphan product that is neither commutative, nor associative, nor does unique prime factorization hold for connected graphs. It is closely related to the direct product, and has interesting properties. For example cancellation and the n th-root property, which says that two graphs G and H are isomorphic if their n th-powers are isomorphic. This property also holds for disconnected infinite graphs. The proofs are in many cases easier than for the standard products, which are commutative, associative, and have unique prime factorization. At the end of the talk we also show that the hypercube of arbitrary infinite dimension can be represented as a semi-strong product in only one way.