

Povzetek

Namen tega diplomskega dela je predstaviti osnove tropske algebre, saj je to področje v matematiki še zelo nepoznano.

V prvem poglavju sem na kratko opisala zgodovino tropske algebre, v drugem pa sem predstavila tropski polkolobar, množico tropskih števil in pripadajoče tropske operacije ter njihove lastnosti.

Osrednjo temo dela, polinome ene spremenljivke, sem obravnavala v tretjem poglavju. Vpeljala sem pojem tropskega polinoma, opisala postopek risanja grafa, predstavila ekvivalenco polinomov, polinome najmanjših koeficientov ter dokazala glavni del te naloge, osnovni izrek tropske algebre.

V zadnjem poglavju sem na kratko predstavila še osnovne lastnosti polinomov več spremenljivk.

Ključne besede: tropska algebra, tropski polkolobar, tropski polinom, funkcijska ekvivalenca, polinom najmanjših koeficientov, osnovni izrek tropske algebre

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Abstract

The aim of this thesis is to introduce the basic properties of tropical algebra, which is still very unknown area of mathematics.

In the first chapter i presented a brief history of tropical algebra, in the second i discussed a tropical semiring, a set of tropical numbers and the corresponding tropical operations.

The main topic - polynomials in one variable is discussed in the third chapter. I presented a definition of a tropical polynomial and a graph drawing and discussed functional equivalence, a least-coefficient polynomials and most importantly, the fundamental theorem of tropical algebra with its proof.

In the final chapter i presented the basics of polynomials in several variables.

Key words: tropical algebra, tropical semiring, tropical polynomial, functional equivalence, least-coefficient polynomial, fundamental theorem of tropical algebra

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