MAXIMAL B_p -SUBALGEBRAS OF B-ALGEBRAS

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Abstract

We provide some properties of maximal B_p -subalgebras of B-algebras. In particular, we show that for each prime p , a finite B-algebra has a maximal B_p -subalgebra. We also show that for a finite B-algebra of order $p^r m$, where $(p, m) = 1$, any two maximal B_p -subalgebras are conjugate and the number of maximal B_p -subalgebras is $kp + 1$ for some $k \in \mathbb{Z}^+$.

Keywords: B-algebras, subalgebras, B_p -subalgebras, maximal B_p -subalgebras.

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REFERENCES

- [1] P.J. Allen, J. Neggers and H.S. Kim, *B-algebras and groups*, Sci. Math. Jpn. **9** (2003) 159–165.
- [2] R. Ameri, A. Borumand Saied, S.A. Nematolah Zadeh, A. Radfar and R.A. Borzooei, *On finite B-algebra*, Afr. Mat. **26** (2015) 825–847.
doi:10.1007/s13370-014-0249-8
- [3] J.S. Bantug and J.C. Endam, *Lagrange’s Theorem for B-algebras*, Int. J. Algebra **11** (2017) 15–23.
doi:10.12988/ija.2017.616

- [4] J.R. Cho and H.S. Kim, *On B-algebras and quasigroups*, Quasigroups and Related Systems **8** (2001) 1–6.
- [5] J.C. Endam and J.P. Vilela, *The Second Isomorphism Theorem for B-algebras*, Appl. Math. Sci. **8** (2014) 1865–1872.
doi:10.12988/ams.2014.4291
- [6] J.C. Endam, *Centralizer and Normalizer of B-algebras*, Sci. Math. Jpn. **81** (2018) 17–23.
- [7] J.C. Endam and E.C. Banagua, *B-algebras Acting on Sets*, Sci. Math. Jpn. **2** (Online-2018) 2018.
- [8] J.C. Endam and R.C. Teves, *Some Properties of Cyclic B-algebras*, Int. Math. Forum. **11** (2016) 387–394.
doi:10.12988/imf.2016.6111
- [9] J.C. Endam and J.S. Bantug, *Cauchy’s Theorem for B-algebras*, Sci. Math. Jpn. **21** (Online-2017) 2017.
- [10] N.C. Gonzaga and J.P. Vilela, *On Cyclic B-algebras*, Appl. Math. Sci. **9** (2015) 5507–5522.
doi:10.12988/ams.2015.54299
- [11] H.S. Kim and H.G. Park, *On 0-commutative B-algebras*, Sci. Math. Jpn. (2005) 31–36.
- [12] J. Neggers and H.S. Kim, *On B-algebras*, Mat. Vesnik **54** (2002) 21–29.
- [13] J. Neggers and H.S. Kim, *A fundamental theorem of B-homomorphism for B-algebras*, Int. Math. J. **2** (2002) 207–214.
- [14] R. Soleimani, *A note on automorphisms of finite B-algebras*, Afr. Mat. **29** (2018) 263–275.
doi:10.1007/s13370-017-0540-6
- [15] A. Walendziak, *Some Axiomatizations of B-algebras*, Math. Slovaca **56** (2006) 301–306.
- [16] A. Walendziak, *A note on normal subalgebras in B-algebras*, Sci. Math. Jpn. (2005) 49–53.

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