

Contents

1	Introduction	1
	References	6
2	Splitting of the Main Problem into Four Sub-cases	9
	2.1 Introduction	9
	2.2 Two NITA Generated by a Non-real Element of Degree 3 not Derived from a Group and Lemmas	11
	2.3 NITA Generated by b_3 and Satisfying $b_3^2 = b_4 + b_5$	23
	2.4 General Information on NITA Generated by b_3 and Satisfying $b_3^2 = \bar{b}_3 + b_6$ and $b_3^2 = c_3 + b_6$	52
	2.5 NITA Generated by b_3 Satisfying $b_3^2 = \bar{b}_3 + b_6$ and b_6 Nonreal and $b_{10} \in B$ is Real	55
	2.6 NITA Generated by b_3 Satisfying $b_3^2 = c_3 + b_6$, $c_3 \neq b_3, \bar{b}_3, b_6$ Non-real, $(b_3b_8, b_3b_8) = 4$ and $c_3^2 = r_3 + s_6$	82
	2.7 Structure of NITA Generated by b_3 and Satisfying $b_3^2 = c_3 + b_6$, $c_3 \neq b_3, \bar{b}_3$, $(b_3b_8, b_3b_8) = 3$ and c_3 Non-real	83
	2.8 Structure of NITA Generated by b_3 and Satisfying $b_3^2 = c_3 + b_6$, $c_3 \neq b_3, \bar{b}_3$, $(b_3b_8, b_3b_8) = 3$ and c_3 Real	108
	References	150
3	A Proof of a Non-existence of Sub-case (2)	151
	3.1 Introduction	151
	3.2 Preliminary Results	152
	3.3 Case $z = z_3$	158
	3.4 Cases $z = z_4, z = z_5, z = z_6, z = z_7$, and $z = z_8$	174
	3.5 Case $z = z_9$	180
4	Preliminary Classification of Sub-case (3)	187
	4.1 Introduction	187
	4.2 Preliminary Results	188
	4.3 Case $R_{15} = x_5 + x_{10}$	190
	4.4 Case $R_{15} = x_6 + x_9$	195

4.5	Case $R_{15} = x_7 + x_8$	209
4.6	Case $(b_3x_7, b_3x_7) = 3$	233
4.7	Case $b_3b_{10} = b_{15} + x_5 + y_5 + z_5$	238
5	Finishing the Proofs of the Main Results	243
5.1	Introduction	243
5.2	Proof of Theorem 5.1	247
5.3	Proof of Theorem 5.2	268
	References	271
Index	273



<http://www.springer.com/978-0-85729-849-2>

On Normalized Integral Table Algebras (Fusion Rings)
Generated by a Faithful Non-real Element of Degree 3

Arad, Z.; Bangteng, X.; Chen, G.; Cohen, E.; Haj Ihia
Hussam, A.; Muzychuk, M.

2011, X, 274 p., Hardcover

ISBN: 978-0-85729-849-2