

Title: Distinguished elements of group rings

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Abstract: This thesis is about finding idempotents in a group ring. We describe three techniques of finding idempotents in a semisimple group ring and in the last chapter there is an attempt to find idempotents in a group ring that does not have to be semisimple. The first technique uses representations and characters of a group. The second technique finds idempotents through the use of Shoda pairs. The third technique lifts idempotent from the factor ring with the help of *CNC* system of ideals, which is a generalization of a well-known technique with nilpotent ideals, and it is here extended to group rings formed by non-abelian group and noncommutative ring.