

# The Cayley isomorphism property for the group $C_2^5 \times C_p$

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## Abstract

A finite group  $G$  is called a DCI-group if two Cayley digraphs over  $G$  are isomorphic if and only if their connection sets are conjugate by a group automorphism. We prove that the group  $C_2^5 \times C_p$ , where  $p$  is a prime, is a DCI-group if and only if  $p \neq 2$ . Together with the previously obtained results, this implies that a group  $G$  of order  $32p$ , where  $p$  is a prime, is a DCI-group if and only if  $p \neq 2$  and  $G \cong C_2^5 \times C_p$ .

*Keywords:* Isomorphisms, DCI-groups, Schur rings.

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# Lastnost Cayleyjevih izomorfizmov za grupo $C_2^5 \times C_p$

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## Povzetek

Končno grupo  $G$  imenujemo DCI-grupa, če sta poljubna Cayleyjeva digrafa nad  $G$  izomorfna če in samo če sta njuni povezovalni množici konjugirani glede na kakšen avtomorfizem grupe. Dokažemo, da je grupa  $C_2^5 \times C_p$  za praštevilo  $p$  DCI-grupa če in samo če je  $p \neq 2$ . Skupaj s prej dobljenimi rezultati izhaja, da je poljubna grupa  $G$  reda  $32p$ , kjer je  $p$  praštevilo, DCI-grupa če in samo če je  $p \neq 2$  in je  $G \cong C_2^5 \times C_p$ .

*Ključne besede:* Izomorfizmi, DCI-grupa, Schurovi kolobarji.

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