

CONJUGACY CLASSES OF TORSION IN $GL_N(\mathbb{Z})^*$

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Abstract. The problem of integral similarity of block-triangular matrices over the ring of integers is connected to that of finding representatives of the classes of an equivalence relation on general integer matrices. A complete list of representatives of conjugacy classes of torsion in the 4×4 general linear group over ring of integers is given. There are 45 distinct such classes and each torsion element has order of 1, 2, 3, 4, 5, 6, 8, 10 or 12.

Key words. General linear group, Ring of integers, Integral similarity, Direct sum, Torsion, Cyclotomic polynomial.

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