

Dem'yanenko, V. A.**On Abel's relations.** (Russian) Zbl 0539.14021

Zap. Nauchn. Semin. Leningr. Otd. Mat. Inst. Steklova 121, 58-61 (1983).

For an elliptic curve E given in Weierstrass form, the author derives a relationship among the coordinates of the n -torsion points of E similar to Abel's relations (cf. *H. Weber*, *Lehrbuch der Algebra*, Vol. 3, §62). The proof uses identities from former work of the author [cf. *Mat. Zametki* 14, 827-832 (1973; [Zbl 0284.14013](#)) and 33, 111-116 (1982; [Zbl 0532.14015](#))]. As a consequence, the author obtains the following: if E and its n -torsion points are defined over an algebraic number field K such that $12 \equiv 0 \pmod{n}$, then $D^{1/n} \in K$, where D is the discriminant of E .

Reviewer: [G. Angermüller](#)**MSC:**

- [14H45](#) Special algebraic curves and curves of low genus
- [14H52](#) Elliptic curves
- [14K15](#) Arithmetic ground fields for abelian varieties
- [14G25](#) Global ground fields in algebraic geometry

Cited in 2 Reviews**Keywords:**[Abel relations](#); [n-torsion points](#)**Full Text:** [EuDML](#)