

Jakimczuk, Rafael**Generalized cyclotomic numbers of order 2 and the quadratic reciprocity law.** (English)

Zbl 1253.11005

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Let p be an odd prime number; for positive integers n , the author considers the number of solutions of congruences of the form $a_1x_1^2 + \dots + a_nx_n^2 \equiv a \pmod{p}$. Using Dirichlet's theorem on primes in arithmetic progression he then derives the quadratic reciprocity law from his results. Much simpler proofs along these lines have been obtained recently e.g. by *W. Castryck* [Am. Math. Mon. 115, No. 6, 550–551 (2008; Zbl 1228.11006)].

Reviewer: [Franz Lemmermeyer \(Jagstzell\)](#)**MSC:**

11A15 Power residues, reciprocity

11D79 Congruences in many variables

Keywords:

quadratic residues; quadratic reciprocity law; congruences

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