

Year: 2007

Vol.: 71

Fasc.: 3-4

Title: Solutions of some generalized Ramanujan–Nagell equations via binary quadratic forms

Author(s): N. Saradha and Anitha Srinivasan

Let h be the class number of binary quadratic forms of discriminant $-4d$, where d is odd and I is the identity form $x^2 + dy^2$. Let λk^n be represented by I , where λ is a prime power represented by I and k is prime. Then we show that k^r is represented by I for some r dividing h and representations of λk^n by I arise out of the representations by I of λ and k^r . As an application we solve several generalized Ramanujan–Nagell equations of the type $x^2 + d = \lambda k^n$.

Address:

N. Saradha
School of Mathematics
TIFR, Mumbai
India
E-mail: saradha@math.tifr.res.in

Address:

Anitha Srinivasan
Department of Mathematics
IIT, Mumbai
India