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

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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 $x^2 + d = \lambda k^n$.

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