

## Complete solutions of certain Lebesgue–Ramanujan–Nagell type equations

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**Abstract.** It is well-known that for  $p = 1, 2, 3, 7, 11, 19, 43, 67, 163$ , the class number of  $\mathbb{Q}(\sqrt{-p})$  is one. We use this fact to determine all the solutions of  $x^2 + p^m = 4y^n$  in non-negative integers  $x, y, m$  and  $n$ .

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*Mathematics Subject Classification:* Primary: 11D61; Secondary: 11D41, 11R29.  
*Key words and phrases:* Diophantine equation, Lebesgue–Ramanujan–Nagell type equation, integer solution, Lucas sequences, primitive divisors.