

**MR2303470 (Review)** 11D57 (11A55 11R11)

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**Quadratic Diophantine equations  $x^2 - Dy^2 = c^n$ . (English summary)**

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Let  $D$  be a non-square integer,  $n$  a positive integer, and  $c$  a nonzero integer. The paper concerns integral solutions  $(x, y)$  of the norm-form equation  $x^2 - Dy^2 = c^n$ . The author first finds a criterion for the solvability of the quadratic equation  $x^2 - Dy^2 = c$  in terms of the central norm (arising from the infrastructure of the underlying real quadratic field  $\mathbb{Q}(\sqrt{D})$ ). Then he determines the fundamental solution and writes out all other continued fraction solutions of this equation in a simple matrix form. In conclusion, the author makes use of the above integral solutions of the equation  $x^2 - Dy^2 = c$  to provide continued fraction solutions of the Diophantine equation  $x^2 - Dy^2 = c^n$  for an arbitrary  $n \geq 1$ .

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