

VÎRGOLICI, Horia, ON THE EXPONENTIAL DIOPHANTINE EQUATION

$$p^x + 1009^y = 2^z$$

Abstract: The aim of this paper is to give all nonnegative solutions (x, y, z) to the equation $p^x + 1009^y = 2^z$, where p is a positive rational prime number with $3 \leq p \leq 997$ (we discuss 167 equations).

Keywords: exponential Diophantine equation, Lebesgue-Nagell equation, Catalan equation.

ACM/AMS Classification: 11D61, Exponential Diophantine Equations; 11Y50
Computer solution of Diophantine equation