

THE GENERALIZED FERMAT CONJECTURE

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Abstract

If a, b, c are non-zero integers, we consider the following problem: for which values of n the line $ax + by + cz = 0$ may be tangent to the curve $x^n + y^n = z^n$? We give a partial solution: if $n = 5$ or if $n-1$ is a prime a number, then the answer is the line cannot be tangent to the curve. This problem is strongly related to Fermat's Last Theorem.

Keywords

Chebyshev polynomials, Fermat curve, Tangent