

On the Pell equation in polynomials

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ABSTRACT

The classical Pell equation $A^2 - DB^2 = 1$ to be solved in integers has a natural analogue in the ring of polynomials $K[X]$, which goes back to Abel. If such an equation admits a non-trivial solution with $B \neq 0$, we call the polynomial D Pellian. In this case, the existence of a non-trivial solution is not always guaranteed from the property of D not being a square like the integer case, and the behaviour deeply depends on the choice of the field K . In this talk I will discuss the solvability of this equation and of the generalised one and present some properties of Pellian polynomials.