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Title:	Some results for the irreducibility of truncated binomial expansions
Authors:	Jakhar, A. (/jspui/browse?type=author&value=Jakhar%2C+A.) Sangwan, N. (/jspui/browse?type=author&value=Sangwan%2C+N.)
Keywords:	Irreducible polynomials Truncated binomial binomial expansions irreducibility truncated
Issue Date:	2018
Publisher:	Elsevier Ltd
Citation:	Journal of Number Theory, 192, pp. 143-149
Abstract:	For positive integers k and n with $k \leqslant n-1$, let $P_{n,k}(x)$ denote the polynomial $\sum_{j=0}^{k}\binom{n}{j}x^j$, where $\binom{n}{j}=$ [Formula presented]. In 2011, Khanduja, Khassa and Laishram proved the irreducibility of $P_{n,k}(x)$ over the field Q of rational numbers for those n,k for which $2 \leq 2k \leq n < (k+1)3$. In this paper, we extend the above result and prove that if $2 \leq 2k \leq n < (k+1)e+1$ for some positive integer e and the smallest prime factor of k is greater than e, then there exists an explicitly constructible constant C_e depending only on e such that the polynomial $P_{n,k}(x)$ is irreducible over Q for $k \geq C_e$.
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