ROZKLADY POLYNÓMOV $x^n + 1$

1. $x^n + 1 = (x + 1)(x^{n-1} + \cdots + x + 1)$
2. $x^{2k} + 1 = (x^k + 1)^2$
3. pre n-nepárne:

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\begin{aligned}
x^3 + 1 &= (x + 1)(x^2 + x + 1)\\
x^5 + 1 &= (x + 1)(x^4 + x^3 + x^2 + x + 1)\\
x^7 + 1 &= (x + 1)(x^6 + x^5 + x^4 + x^3 + x^2 + x + 1) = (x + 1)(x^3 + x^2 + 1)(x^3 + x + 1)\\
x^9 + 1 &= (x + 1)(x^2 + x + 1)(x^6 + x^3 + 1)\\
x^{11} + 1 &= (x + 1)(x^{10} + x^9 + \cdots + x + 1)\\
x^{13} + 1 &= (x + 1)(x^{12} + x^{11} + \cdots + x + 1)\\
x^{15} + 1 &= (x + 1)(x^2 + x + 1)(x^4 + x^3 + x^2 + x + 1)(x^4 + x^3 + 1)(x^4 + x + 1)\\
x^{17} + 1 &= (x + 1)(x^8 + x^7 + x^6 + x^4 + x^2 + x + 1)(x^8 + x^5 + x^4 + x^3 + 1)\\
x^{19} + 1 &= (x + 1)(x^{18} + x^{17} + \cdots + x + 1)\\
x^{21} + 1 &= (x + 1)(x^2 + x + 1)(x^3 + x^2 + 1)(x^3 + x + 1)(x^6 + x^5 + x^4 + x^2 + 1)(x^6 + x^4 + x^2 + x + 1)\\
x^{23} + 1 &= (x + 1)(x^{11} + x^9 + x^7 + x^6 + x^5 + x + 1)(x^{11} + x^{10} + x^6 + x^5 + x^4 + x^2 + 1)\\
x^{25} + 1 &= (x + 1)(x^4 + x^3 + x^2 + x + 1)(x^{20} + x^{15} + x^{10} + x^5 + 1)\\
x^{27} + 1 &= (x + 1)(x^2 + x + 1)(x^6 + x^3 + 1)(x^{18} + x^9 + 1)\\
x^{29} + 1 &= (x + 1)(x^{28} + x^{27} + \cdots + x + 1)\\
x^{31} + 1 &= (x + 1)(x^5 + x^2 + 1)(x^5 + x^3 + 1)(x^5 + x^3 + x^2 + x + 1)\\
&\qquad (x^5 + x^4 + x^2 + x + 1)(x^5 + x^4 + x^3 + x + 1)(x^5 + x^4 + x^3 + x^2 + 1)
\end{aligned}
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4. v rozklade polynómu $x^n + 1$, kde n je v tvare $2^r - 1$ sa nachádzajú všetky ireducibilné polynómy stupňa r