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:

$$\begin{aligned}
x^3 + 1 &= (x+1)(x^2+x+1) \\
x^5 + 1 &= (x+1)(x^4+x^3+x^2+x+1) \\
x^7 + 1 &= (x+1)(x^6+x^5+x^4+x^3+x^2+x+1) = (x+1)(x^3+x^2+1)(x^3+x+1) \\
x^9 + 1 &= (x+1)(x^2+x+1)(x^6+x^3+1) \\
x^{11} + 1 &= (x+1)(x^{10}+x^9+\cdots+x+1) \\
x^{13} + 1 &= (x+1)(x^{12}+x^{11}+\cdots+x+1) \\
x^{15} + 1 &= (x+1)(x^2+x+1)(x^4+x^3+x^2+x+1)(x^4+x^3+1)(x^4+x+1) \\
x^{17} + 1 &= (x+1)(x^8+x^7+x^6+x^4+x^2+x+1)(x^8+x^5+x^4+x^3+1) \\
x^{19} + 1 &= (x+1)(x^{18}+x^{17}+\cdots+x+1) \\
x^{21} + 1 &= (x+1)(x^2+x+1)(x^3+x^2+1)(x^3+x+1)(x^6+x^5+x^4+x^2+1)(x^6+x^4+x^2+x+1) \\
x^{23} + 1 &= (x+1)(x^{11}+x^9+x^7+x^6+x^5+x+1)(x^{11}+x^{10}+x^6+x^5+x^4+x^2+1) \\
x^{25} + 1 &= (x+1)(x^4+x^3+x^2+x+1)(x^{20}+x^{15}+x^{10}+x^5+1) \\
x^{27} + 1 &= (x+1)(x^2+x+1)(x^6+x^3+1)(x^{18}+x^9+1) \\
x^{29} + 1 &= (x+1)(x^{28}+x^{27}+\cdots+x+1) \\
x^{31} + 1 &= (x+1)(x^5+x^2+1)(x^5+x^3+1)(x^5+x^3+x^2+x+1) \\
&\qquad (x^5+x^4+x^2+x+1)(x^5+x^4+x^3+x+1)(x^5+x^4+x^3+x^2+1)
\end{aligned}$$

4. v rozklade polynómu $x^n + 1$, kde n je v tvare $2^r - 1$ sa nachádzajú všetky ireducibilné polynómy stupňa r