

## Table of Primitive Polynomials over $F_2$

If  $\deg(f(x)) = d$  then  $o(f(x)) = 2^d - 1$  and  $f(x)$  is primitive for  $F_{2^d}$  over  $F_2$ .

$x + 1$	$x^{11} + x^2 + 1$	$x^{21} + x^2 + 1$
$x^2 + x + 1$	$x^{12} + x^6 + x^4 + x + 1$	$x^{22} + x^1 + 1$
$x^3 + x + 1$	$x^{13} + x^4 + x^3 + x + 1$	$x^{23} + x^5 + 1$
$x^4 + x + 1$	$x^{14} + x^5 + x^3 + x + 1$	$x^{24} + x^4 + x^3 + x + 1$
$x^5 + x^2 + 1$	$x^{15} + x + 1$	$x^{25} + x^3 + 1$
$x^6 + x + 1$	$x^{16} + x^5 + x^3 + x^2 + 1$	$x^{26} + x^6 + x^2 + x + 1$
$x^7 + x + 1$	$x^{17} + x^3 + 1$	$x^{27} + x^5 + x^2 + x + 1$
$x^8 + x^4 + x^3 + x^2 + 1$	$x^{18} + x^5 + x^2 + x + 1$	$x^{28} + x^3 + x^3 + 1$
$x^9 + x^4 + 1$	$x^{19} + x^5 + x^2 + x + 1$	$x^{29} + x^2 + x^2 + 1$
$x^{10} + x^3 + 1$	$x^{20} + x^3 + 1$	$x^{30} + x^6 + x^4 + x + 1$

## Table of Primitive Polynomials over $F_3$

If  $\deg(f(x)) = d$  then  $o(f(x)) = 3^d - 1$  and  $f(x)$  is primitive for  $F_{3^d}$  over  $F_3$ .

$x + 1$	$x^6 + x^5 + 2$	$x^{11} + x^{10} + x^4 + 1$
$x^2 + x + 2$	$x^7 + x^6 + x^4 + 1$	$x^{12} + x^{11} + x^7 + 2$
$x^3 + 2x^2 + 1$	$x^8 + x^5 + 2$	$x^{13} + x^{12} + x^6 + 1$
$x^4 + x^3 + 2$	$x^9 + x^7 + x^5 + 1$	$x^{14} + x^{13} + 2$
$x^5 + x^4 + x^2 + 1$	$x^{10} + x^9 + x^7 + 2$	$x^{15} + x^{14} + x^4 + 1$

## Additional Primitive Polynomials

If  $\deg(f(x)) = d$  then  $o(f(x)) = q^d - 1$  and  $f(x)$  is primitive for  $F_{q^d}$  over  $F_q$ .

$x^2 + x + 2 \quad (q=5)$	$x^2 + x + 3 \quad (q=7)$	$x^3 + x^2 + 5 \quad (q=11)$
$x^3 + x^2 + 2 \quad (q=5)$	$x^3 + x^2 + x + 2 \quad (q=7)$	$x^4 + x + 2 \quad (q=11)$
$x^4 + x^3 + x + 3 \quad (q=5)$	$x^4 + x^3 + x^2 + 3 \quad (q=7)$	$x^2 + x + 2 \quad (q=13)$
$x^5 + x^3 + 2 \quad (q=5)$	$x^5 + x^4 + 4 \quad (q=7)$	$x^3 + 10x + 7 \quad (q=13)$
$x^6 + x^5 + 2 \quad (q=5)$	$x^2 + x + 7 \quad (q=11)$	<del><math>x^4 + 10x + 2 \quad (q=13)</math></del>

$$x^2 + x + 10 \quad (q=17)$$

$$x^2 + x + 2 \quad (q=19)$$

$$x^2 + 2x + 49 \quad (q=23)$$