

Table for $GF(4) = GF(2)(\alpha)$ where $\alpha^2 + \alpha + 1 = 0$

binary	$GF(4)$	Polynomial
00	0	0
01	1	1
10	α	α
11	α^2	$\alpha + 1$

Table for $GF(8) = GF(2)(\alpha)$ where $\alpha^3 + \alpha + 1 = 0$

binary	$GF(8)$	Polynomial in α
000	0	0
001	1	1
010	α	α
100	α^2	α^2
011	α^3	$\alpha + 1$
110	α^4	$\alpha^2 + \alpha$
111	α^5	$\alpha^2 + \alpha + 1$
101	α^6	$\alpha^2 + 1$

Table for $GF(16) = GF(2)(\alpha)$ where $\alpha^4 + \alpha^3 + 1 = 0$

binary	$GF(16)$	Polynomial in α
0000	0	0
0001	1	1
0010	α	α
0100	α^2	α^2
1000	α^3	α^3
1001	α^4	$\alpha^3 + 1$
1011	α^5	$\alpha^3 + \alpha + 1$
1111	α^6	$\alpha^3 + \alpha^2 + \alpha + 1$
0111	α^7	$\alpha^2 + \alpha + 1$
1110	α^8	$\alpha^3 + \alpha^2 + \alpha$
0101	α^9	$\alpha^2 + 1$
1010	α^{10}	$\alpha^3 + \alpha$
1101	α^{11}	$\alpha^3 + \alpha^2 + 1$
0011	α^{12}	$\alpha + 1$
0110	α^{13}	$\alpha^2 + \alpha$
1100	α^{14}	$\alpha^3 + \alpha^2$

Table for $GF(32) = GF(2)(\alpha)$ where $\alpha^5 + \alpha^2 + 1 = 0$

binary	$GF(32)$	Polynomial in α
00000	0	0
00001	1	1
00010	α	α
00100	α^2	α^2
01000	α^3	α^3
10000	α^4	α^4
00101	α^5	$\alpha^2 + 1$
01010	α^6	$\alpha^3 + \alpha$
10100	α^7	$\alpha^4 + \alpha^2$
01101	α^8	$\alpha^3 + \alpha^2 + 1$
11010	α^9	$\alpha^4 + \alpha^3 + \alpha$
10001	α^{10}	$\alpha^4 + 1$
00111	α^{11}	$\alpha^2 + \alpha + 1$
01110	α^{12}	$\alpha^3 + \alpha^2 + \alpha$
11100	α^{13}	$\alpha^4 + \alpha^3 + \alpha^2$
11101	α^{14}	$\alpha^4 + \alpha^3 + \alpha^2 + 1$
11111	α^{15}	$\alpha^4 + \alpha^3 + \alpha^2 + \alpha + 1$
11011	α^{16}	$\alpha^4 + \alpha^3 + \alpha + 1$
10011	α^{17}	$\alpha^4 + \alpha + 1$
00011	α^{18}	$\alpha + 1$
00110	α^{19}	$\alpha^2 + \alpha$
01100	α^{20}	$\alpha^3 + \alpha^2$
11000	α^{21}	$\alpha^4 + \alpha^3$
10101	α^{22}	$\alpha^4 + \alpha^2 + 1$
01111	α^{23}	$\alpha^3 + \alpha^2 + \alpha + 1$
11110	α^{24}	$\alpha^4 + \alpha^3 + \alpha^2 + \alpha$
11001	α^{25}	$\alpha^4 + \alpha^3 + 1$
10111	α^{26}	$\alpha^4 + \alpha^2 + \alpha + 1$
01011	α^{27}	$\alpha^3 + \alpha + 1$
10110	α^{28}	$\alpha^4 + \alpha^2 + \alpha$
01001	α^{29}	$\alpha^3 + 1$
10010	α^{30}	$\alpha^4 + \alpha$

Table for $GF(64) = GF(2)(\alpha)$ where $\alpha^6 + \alpha + 1 = 0$

binary	$GF(64)$	Polynomial in α
000000	0	0
000001	1	1
000010	α	α
000100	α^2	α^2
001000	α^3	α^3
010000	α^4	α^4
100000	α^5	α^5
000011	α^6	$\alpha + 1$
000110	α^7	$\alpha^2 + \alpha$
001100	α^8	$\alpha^3 + \alpha^2$
011000	α^9	$\alpha^4 + \alpha^3$
110000	α^{10}	$\alpha^5 + \alpha^4$
100011	α^{11}	$\alpha^5 + \alpha + 1$
000101	α^{12}	$\alpha^2 + 1$
001010	α^{13}	$\alpha^3 + \alpha$
010100	α^{14}	$\alpha^4 + \alpha^2$
101000	α^{15}	$\alpha^5 + \alpha^3$
010011	α^{16}	$\alpha^4 + \alpha + 1$
100110	α^{17}	$\alpha^5 + \alpha^2 + \alpha$
001111	α^{18}	$\alpha^3 + \alpha^2 + \alpha + 1$
011110	α^{19}	$\alpha^4 + \alpha^3 + \alpha^2 + \alpha$
111100	α^{20}	$\alpha^5 + \alpha^4 + \alpha^3 + \alpha^2$
111011	α^{21}	$\alpha^5 + \alpha^4 + \alpha^3 + \alpha + 1$
110101	α^{22}	$\alpha^5 + \alpha^4 + \alpha^2 + 1$
101001	α^{23}	$\alpha^5 + \alpha^3 + 1$
010001	α^{24}	$\alpha^4 + 1$
100010	α^{25}	$\alpha^5 + \alpha$
000111	α^{26}	$\alpha^2 + \alpha + 1$
001110	α^{27}	$\alpha^3 + \alpha^2 + \alpha$
011100	α^{28}	$\alpha^4 + \alpha^3 + \alpha^2$
111000	α^{29}	$\alpha^5 + \alpha^4 + \alpha^3$
110011	α^{30}	$\alpha^5 + \alpha^4 + \alpha + 1$

binary	$GF(64)$	Polynomial in α
100101	α^{31}	$\alpha^5 + \alpha^2 + 1$
001001	α^{32}	$\alpha^3 + 1$
010010	α^{33}	$\alpha^4 + \alpha$
100100	α^{34}	$\alpha^5 + \alpha^2$
001011	α^{35}	$\alpha^3 + \alpha + 1$
010110	α^{36}	$\alpha^4 + \alpha^2 + \alpha$
101100	α^{37}	$\alpha^5 + \alpha^3 + \alpha^2$
011011	α^{38}	$\alpha^4 + \alpha^3 + \alpha + 1$
110110	α^{39}	$\alpha^5 + \alpha^4 + \alpha^2 + \alpha$
101111	α^{40}	$\alpha^5 + \alpha^3 + \alpha^2 + \alpha + 1$
011101	α^{41}	$\alpha^4 + \alpha^3 + \alpha^2 + 1$
111010	α^{42}	$\alpha^5 + \alpha^4 + \alpha^3 + \alpha$
110111	α^{43}	$\alpha^5 + \alpha^4 + \alpha^2 + \alpha + 1$
101101	α^{44}	$\alpha^5 + \alpha^3 + \alpha^2 + 1$
011001	α^{45}	$\alpha^4 + \alpha^3 + 1$
110010	α^{46}	$\alpha^5 + \alpha^4 + \alpha$
100111	α^{47}	$\alpha^5 + \alpha^2 + \alpha + 1$
001101	α^{48}	$\alpha^3 + \alpha^2 + 1$
011010	α^{49}	$\alpha^4 + \alpha^3 + \alpha$
110100	α^{50}	$\alpha^5 + \alpha^4 + \alpha^2$
101011	α^{51}	$\alpha^5 + \alpha^3 + \alpha + 1$
010101	α^{52}	$\alpha^4 + \alpha^2 + 1$
101010	α^{53}	$\alpha^5 + \alpha^3 + \alpha$
010111	α^{54}	$\alpha^4 + \alpha^2 + \alpha + 1$
101110	α^{55}	$\alpha^5 + \alpha^4 + \alpha^2 + 1$
011111	α^{56}	$\alpha^4 + \alpha^3 + \alpha^2 + \alpha + 1$
111110	α^{57}	$\alpha^5 + \alpha^4 + \alpha^3 + \alpha^2 + \alpha$
111111	α^{58}	$\alpha^5 + \alpha^4 + \alpha^3 + \alpha^2 + \alpha + 1$
111101	α^{59}	$\alpha^5 + \alpha^4 + \alpha^3 + \alpha^2 + 1$
111001	α^{60}	$\alpha^5 + \alpha^4 + \alpha^3 + 1$
110001	α^{61}	$\alpha^5 + \alpha^4 + 1$
100001	α^{62}	$\alpha^5 + 1$