

Coefficients for the Hermite Polynomials $H_n(x)$ and for x^n in terms of $H_m(x)$

Table 22.12

$$H_n(x) = \sum_{m=0}^n c_m x^m \quad x^n = b_n^{-1} \sum_{m=0}^n d_m H_m(x)$$

	x^0	x^1	x^2	x^3	x^4	x^5	x^6	x^7	x^8	x^9	x^{10}	x^{11}	x^{12}	
b_n	1	2	4	8	16	32	64	128	256	512	1024	2048	4096	b_n
H_0	1 1		2		12		120		1680		* 30240		665280	H_0
H_1		2 1		6		60		840		15120		332640		H_1
H_2	-2		4 1		12		180		3360		75600		1995840	H_2
H_3		-12		8 1		20		420		10080		277200		H_3
H_4	12		-48		16 1		30		840		25200		831600	H_4
H_5		120		-160		32 1		42		1512		55440		H_5
H_6	-120		720		-480		64 1		56		2520		110880	H_6
H_7		-1680		3360		-1344		128 1		72		3960		H_7
H_8	1680		-13440		13440		-3584		256 1		90		5940	H_8
H_9		30240		-80640		48384		-9216		512 1		110		H_9
H_{10}	-30240		302400		-403200		161280		-23040		1024 1		132	H_{10}
H_{11}		-665280		2217600		-1774080		506880		-56320		2048 1		H_{11}
H_{12}	665280		-7983360		13305600		-7096320		1520640		-135168		4096 1	H_{12}
	x^0	x^1	x^2	x^3	x^4	x^5	x^6	x^7	x^8	x^9	x^{10}	x^{11}	x^{12}	

$$H_6(x) = 64x^6 - 480x^4 + 720x^2 - 120$$

$$x^6 = \frac{1}{64} [120H_0 + 180H_2 + 30H_4 + H_6]$$

*See page 11.