

Wolfdieter Lang, Jun 01 2007

Rationals $r(n) := A130187(n)/A130188(n)$, $n \geq 0$.

$r(n) = -2^*z(2^n+1)$, with the e.g.f. for $-z(n)$ given by $2^*(\exp((x^2)/4)-1)/x$.

$r(n)$, $n=0..29$:

[1, 3/4, 5/4, 105/32, 189/16, 3465/64, 19305/64, 2027025/1024, 3828825/256, 130945815/1024, 1249937325/1024, 105411381075/8192, 608142583125/4096, 30494006668125/16384, 412685556908625/16384, 191898783962510625/524288, 372509404162520625/65536, 24627010608522196875/262144, 431620764875678503125/262144, 63966197354575554163125/2097152, 624431926556570885878125/1048576, 51260184516416682722540625/4194304, 1103208318940272084680765625/4194304, 397522730924811374513302546875/67108864, 2337433657837890882138218975625/16777216, 229248301057177759594325322609375/67108864, 5850077015866499124462598047328125/67108864, 1241052052651678742832422585754609375/536870912, 17075164448552407530694365921244453125/268435456, 1947707091431544619001204006083283953125/1073741824]

$z(n)$, $n=0..40$:

[0, -1/2, 0, -3/8, 0, -5/8, 0, -105/64, 0, -189/32, 0, -3465/128, 0, -19305/128, 0, -2027025/2048, 0, -3828825/512, 0, -130945815/2048, 0, -1249937325/2048, 0, -105411381075/16384, 0, -608142583125/8192, 0, -30494006668125/32768, 0, -412685556908625/32768, 0, -191898783962510625/1048576, 0, -372509404162520625/131072, 0, -24627010608522196875/524288, 0, -431620764875678503125/524288, 0, -63966197354575554163125/4194304]

For the z-sequence of a Sheffer matrix $S=(g,f)$ see the W. Lang link under A006232.

The a-sequence for the Sheffer matrix of the coefficients of the Hermite polynomials A048993 is

[2,0,0,0,...].

Numerators of $r(n)$ A130187, $n=0..29$:

[1, 3, 5, 105, 189, 3465, 19305, 2027025, 3828825, 130945815, 1249937325, 105411381075, 608142583125, 30494006668125, 412685556908625, 191898783962510625, 372509404162520625, 24627010608522196875, 431620764875678503125, 63966197354575554163125, 624431926556570885878125, 51260184516416682722540625, 1103208318940272084680765625, 397522730924811374513302546875, 2337433657837890882138218975625, 229248301057177759594325322609375, 5850077015866499124462598047328125, 1241052052651678742832422585754609375, 17075164448552407530694365921244453125, 1947707091431544619001204006083283953125]

Denominators of $r(n)$ A130187, $n=0..29$:

[1, 4, 4, 32, 16, 64, 64, 1024, 256, 1024, 1024, 8192, 4096, 16384, 16384, 524288, 65536, 262144, 262144, 2097152, 1048576, 4194304, 4194304, 67108864, 16777216, 67108864, 67108864, 536870912, 268435456, 1073741824]

e.o.f.#####

