$type\big(\text{sqrt}(x^2-1), polynom(anything, [\ ])\big);$

$$true \tag{1}$$

> $[seq(simplify(\text{ChebyshevU}(n, -1)), '\text{ChebyshevU}'), n = -5..5)];$

$$[4, -3, 2, -1, 0, 1, -2, 3, -4, 5, -6] \tag{2}$$

$limit\big(\text{binomial}(-2, k) \cdot x^k, k = infinity\big) \text{ assuming } abs(x) < 1;$

$$\lim_{k \to \infty} \text{binomial}(-2, k)\, x^k \tag{3}$$

$sum\big(sum\big((-1)^{i+j} \cdot \text{binomial}(i+j, i) \cdot \text{binomial}(n, i) \cdot \text{binomial}(n, j), j = 0..n\big), i = 0..n\big);$

$$0 \tag{4}$$

$add\big(add\big((-1)^{i+j} \cdot \text{binomial}(i+j, i) \cdot \text{binomial}(3, i) \cdot \text{binomial}(3, j), j = 0..3\big), i = 0..3\big);$

$$1 \tag{5}$$

$evalf\,(\text{StruveL}(1+I, 700 \cdot I), 25);$

$$-0.1721150049480079451246076 + 0.1240770953126831093464055\ I \tag{6}$$

$evalf\,(\text{StruveL}(1+I, 100 \cdot I), 25);$

$$0.1745249349140313153158106 + 0.08029354364282519308755723\ I \tag{7}$$

$plot\,(\text{Re}(\text{StruveL}(1+I, x \cdot I)), x = 0..1000);$
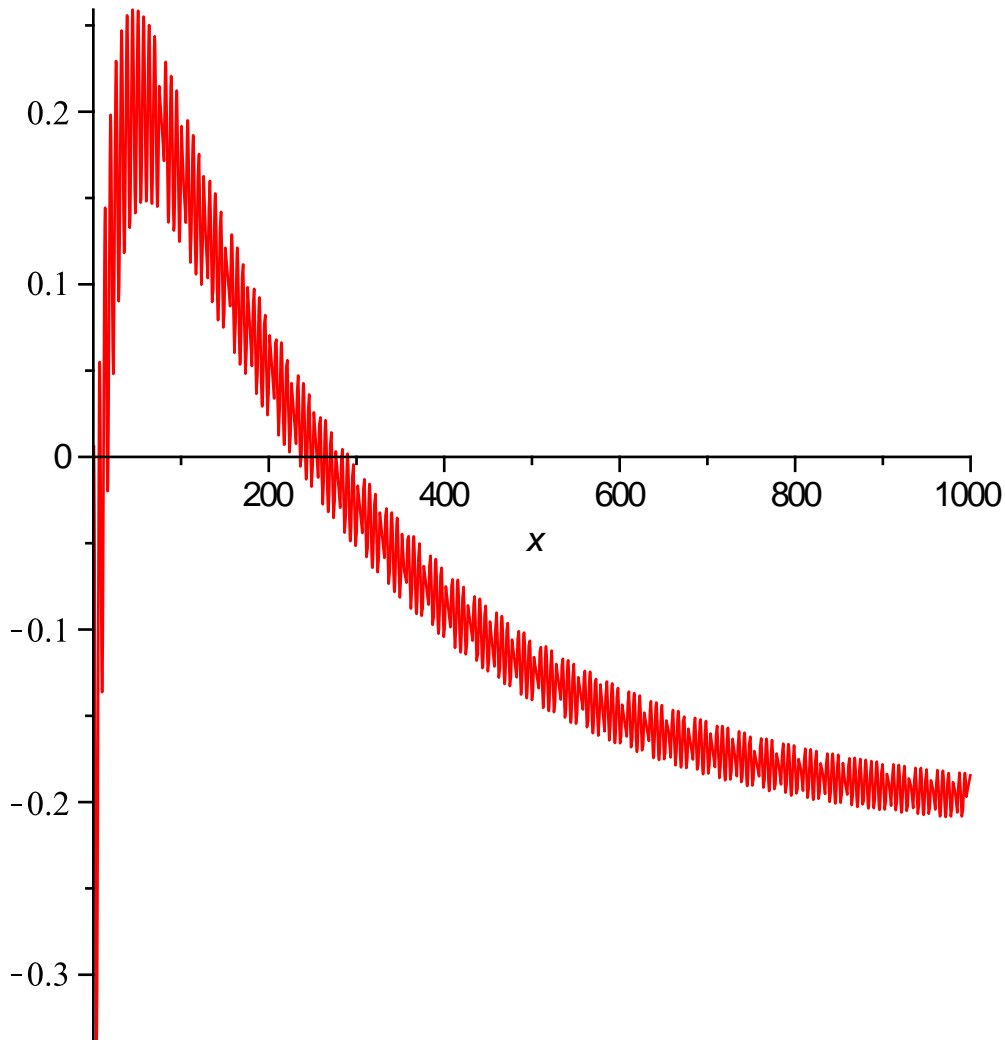
$with(LinearAlgebra):$
$mat := Matrix((i, j) \to x, 9, 10) + RandomMatrix(9, 10);$

$$\begin{bmatrix} x+42 & x-40 & x-19 & x+81 & x-69 & x-58 & x-93 & x+69 & x+42 & x+69 \\ x-86 & x-43 & x-53 & x+22 & x+17 & x+75 & x+12 & x-89 & x+55 & x+31 \\ x-77 & x+23 & x-15 & x+50 & x-87 & x-31 & x+82 & x+95 & x+34 & x-66 \\ x-48 & x+68 & x-89 & x+78 & x+37 & x-30 & x-4 & x+77 & x-55 & x-81 \\ x-27 & x-2 & x+66 & x-8 & x+33 & x-50 & x+14 & x-84 & x+54 & x+11 \\ x-46 & x+80 & x+77 & x-90 & x-17 & x+98 & x+78 & x-63 & x+79 & x-76 \\ x-60 & x-69 & x-80 & x-81 & x+58 & x+5 & x-75 & x+96 & x-99 & x+82 \\ x-86 & x+7 & x-19 & x-43 & x-21 & x-23 & x-3 & x+69 & x-32 & x-29 \\ x+64 & x+86 & x-62 & x-2 & x+15 & x+19 & x+19 & x+72 & x-9 & x+29 \end{bmatrix} \qquad (8)$$

$t := time(\ ) : NullSpace(mat); time(\ ) - t;$

$$\left\{ \left[\begin{array}{c} \dfrac{3}{4} \dfrac{1015250698731521\,x - 162999429722893866}{4385215652803275\,x + 190970707413455578} \\[2mm] \dfrac{1}{4} \dfrac{4046344610544861\,x + 572295904898775895}{4385215652803275\,x + 190970707413455578} \\[2mm] \dfrac{1}{4} \dfrac{31928026163193198\,x + 788489686204759405}{4385215652803275\,x + 190970707413455578} \\[2mm] \dfrac{1}{4} \dfrac{27090004272528360\,x + 633432311813344717}{4385215652803275\,x + 190970707413455578} \\[2mm] -\dfrac{1}{4} \dfrac{29324585651256153\,x + 222624705678055978}{4385215652803275\,x + 190970707413455578} \\[2mm] \dfrac{1}{4} \dfrac{20010665084942943\,x + 410420025685003435}{4385215652803275\,x + 190970707413455578} \\[2mm] \dfrac{1}{4} \dfrac{12098291629000557\,x + 26954492614206107}{4385215652803275\,x + 190970707413455578} \\[2mm] -\dfrac{1}{4} \dfrac{20270445627348750\,x + 26706198436330607}{4385215652803275\,x + 190970707413455578} \\[2mm] -\dfrac{1}{4} \dfrac{66164915189012679\,x + 781240757640386986}{4385215652803275\,x + 190970707413455578} \\[2mm] 1 \end{array} \right] \right\}$$

$$0.064 \qquad (9)$$

$t := time(\ ) : Determinant\left(Matrix\left((i,j) \to \dfrac{1}{(x+i-1)^{j-1}}, 8, 8 \right) \right); time(\ ) - t;$

$$\dfrac{125411328000}{(x+7)^7 (x+6)^7 (x+5)^7 (x+4)^7 (x+3)^7 (x+2)^7 (x+1)^7 x^7}$$

$$0.076 \qquad (10)$$

$degree(x^2 - x - x \cdot (x-1), x);$

$$2 \qquad (11)$$

$degree(mul(x + y + z + i, i = 1..100), x);$

$$100 \tag{12}$$

$lcoeff(x^2 - x - x \cdot (x + 1), x);$

$$0 \tag{13}$$

$denom\left(\dfrac{1}{x + 1} + \dfrac{x}{x - 1} \right);$

$$(x + 1)(x - 1) \tag{14}$$

$denom(x^{-n});$

$$1 \tag{15}$$

$denom\left(\dfrac{1}{x^n} \right);$

$$x^n \tag{16}$$

$simplify(x^4 + 4 \cdot (x^3 + x) + 6 \cdot x^2 + 1);$

$$x^4 + 4x^3 + 6x^2 + 4x + 1 \tag{17}$$

$simplify((x^2 + 1) \cdot (x^2 - 1));$

$$x^4 - 1 \tag{18}$$