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# Chebyshev polynomials of the first kind

Definition.

$$\frac{1 - xt}{1 - 2xt + t^2} =: \sum_{n \in \mathbb{N}} T_n(x) t^n$$

[1]

```
from sympy import polys
for i in range(15):
    print(polys.orthopolys.chebyshevt_poly(i))
```

[2]

Current note has 0 direct children and 0 total descendants.

- [squishy](#)
  - [Polynomials](#)
    - [Chebyshev polynomials of the first kind](#)

And it has 17 siblings.

- [squishy](#)
  - [Polynomials](#)
    - $X^n + Y^n = Z^n$
    - $8X^3 + 4X^2 - 4X - 1$
    - $x^2 + y^2 - 3$
    - [Folium of Descartes](#)
$$X^3 + Y^3 - 3aXY$$
    - $X^3 + Y^3 - a$
    - $3X^3 + 10X^2 + 3 - Y^2$
    - $3X^8 + 10X^4 + 3 - Y^2$
    - $XYZ - 1$
    - [Pythagorean triples](#)
    - [Bolza curve](#)
    - [Irreducible polynomials in  \$\mathbb{C}\[x, y\]\$](#)
    - [Polynomial maps  \$\mathbb{C}^n \rightarrow \mathbb{C}^n\$  of degree at most  \$d\$](#)
    - [Chebyshev polynomials of the first kind](#)
    - [Logistic map](#)
    - [Dynamics of the map  \$z^2 + c\$](#)
    - $\begin{pmatrix} x \\ y \\ y \end{pmatrix} \mapsto \begin{pmatrix} (1 + xy)^3 z + y^2(1 + xy)(4 + 3xy) \\ y + 3x(1 + xy)^2 z + 3xy^2(4 + 3xy) \\ 2x - 3x^2 y - x^3 z \end{pmatrix}$
    - $(w^2 - 1)^2$

1. [Chebyshev Polynomial of the First Kind -- from Wolfram MathWorld](#) ↩  
2. [Polynomials Manipulation Module Reference - SymPy 1.14.0 documentation](#) ↩