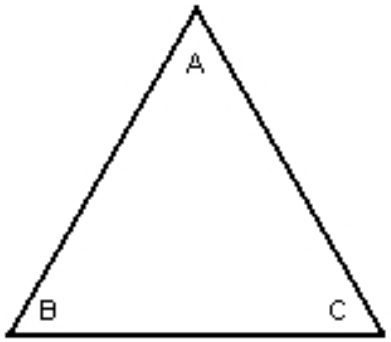
Algebraische Flächen

Scherenschnitte

Kongruenztransformationen in 2D

- Identität
- Rotieren
- Spiegeln
- Schieben
- Gleitspiegelung



Algebraische Scherenschnitte in 2D

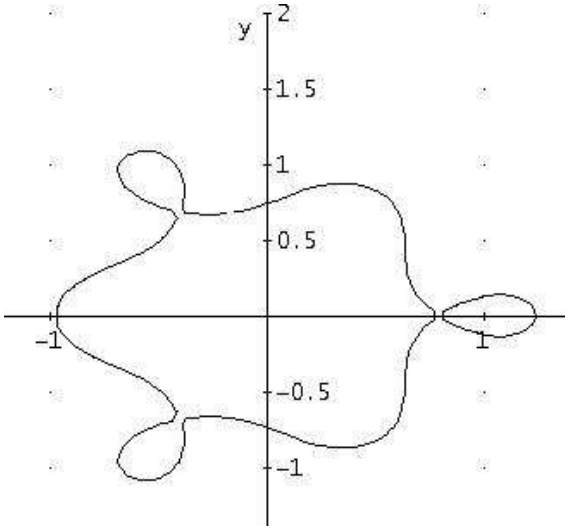
Dn-Faltfunktion

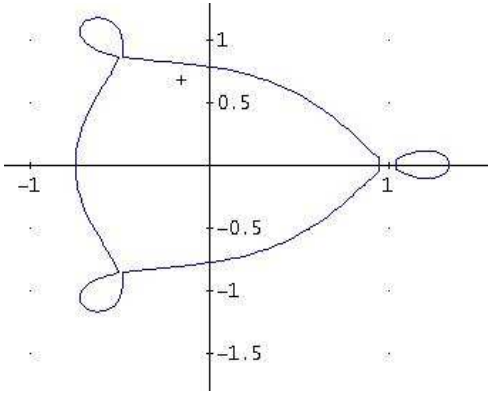
$(x, y) \rightarrow (u, v) = (Q(x, y), Sn(x, y))$

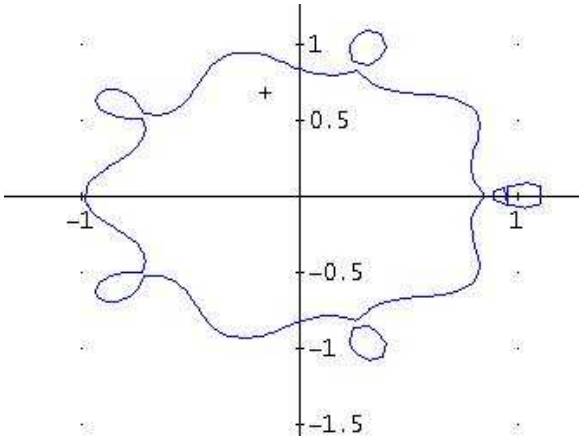
Cn-Faltfunktion

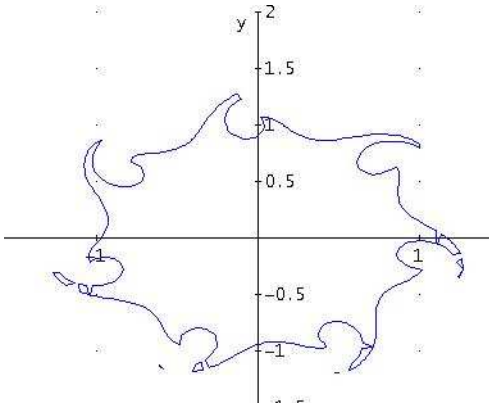
$(x, y) \rightarrow (u, v) = (Sn(x, y), Tn(x, y))$

Beispiele

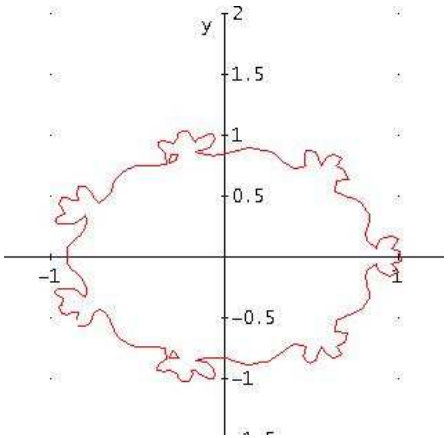


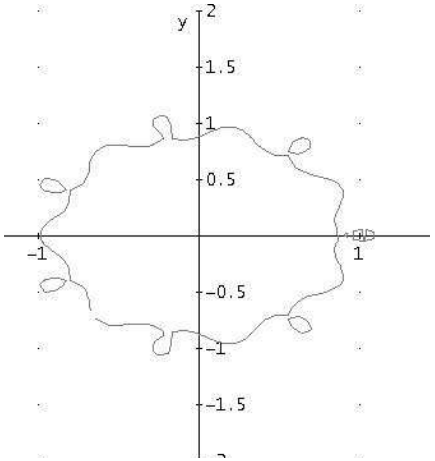


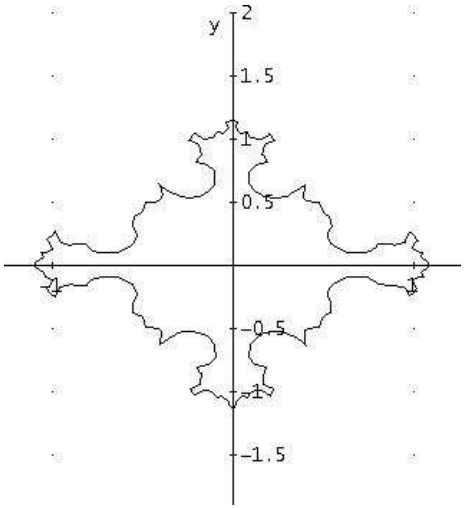




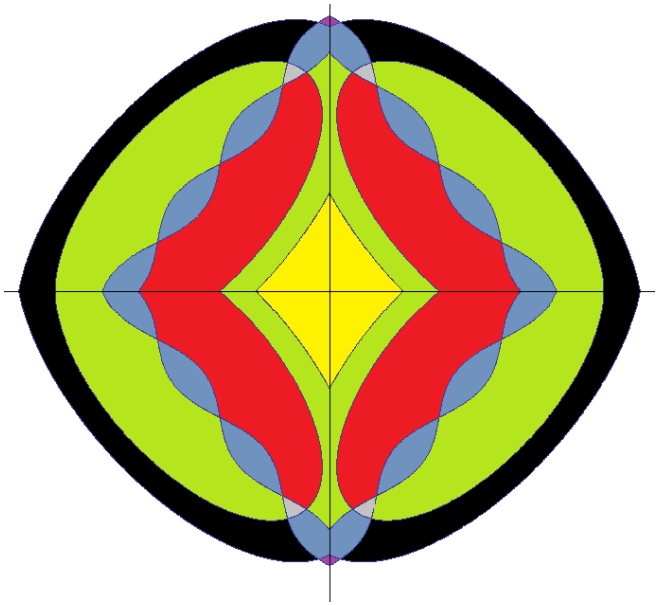
Beispiele

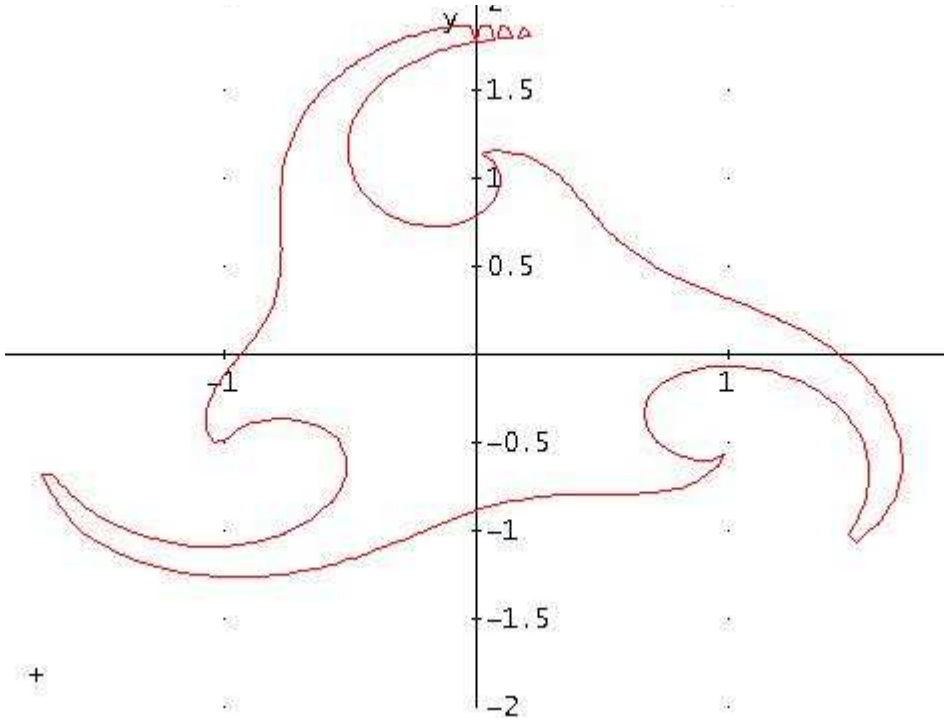






Beispiele





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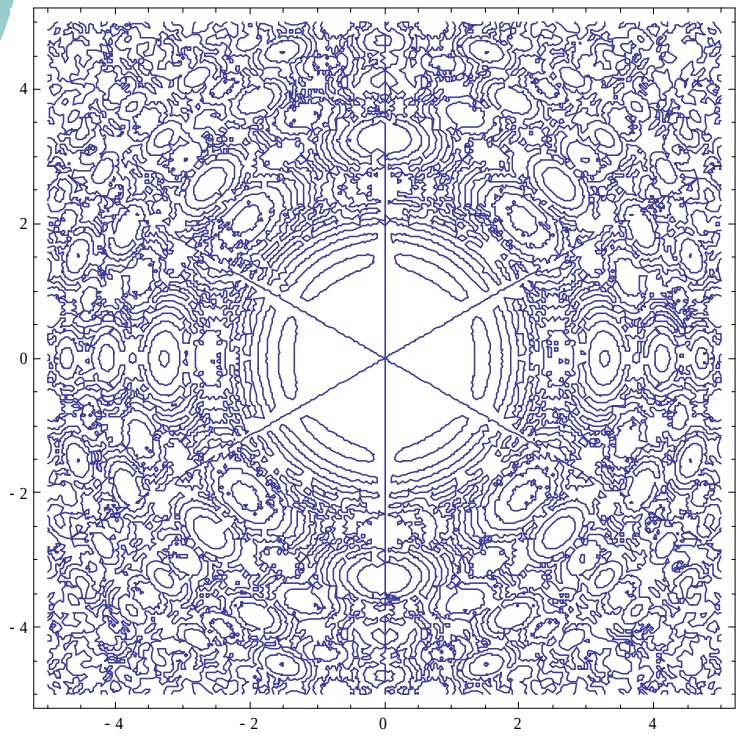
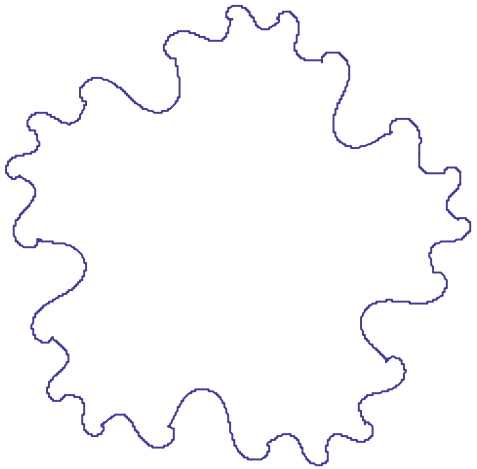
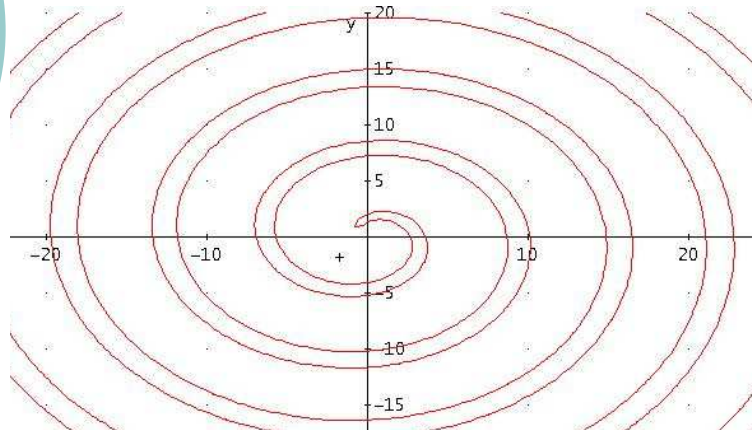
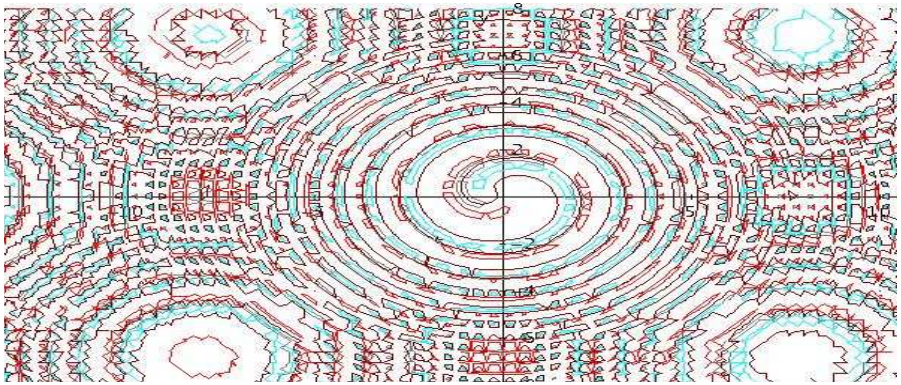




Beispiele





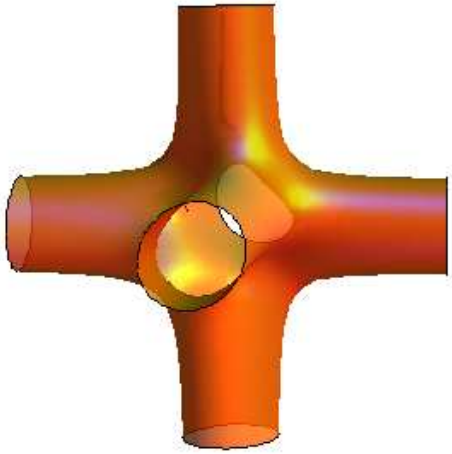
Kongruenztransformationen in 3D

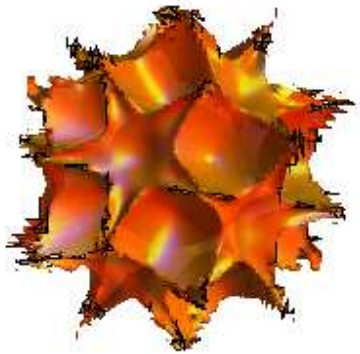
- Identität
- Drehung
- Spiegelung
- Drehspiegelung
- Punktspiegelung
- Schieben
- Schraubung
- Gleitspiegelung

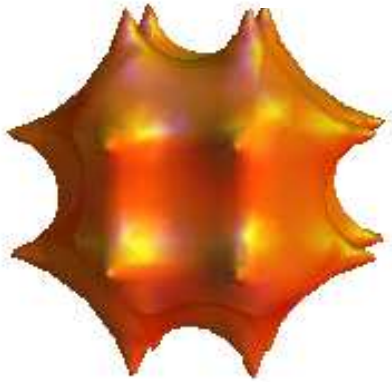
Algebraische Scherenschnitte in 3D

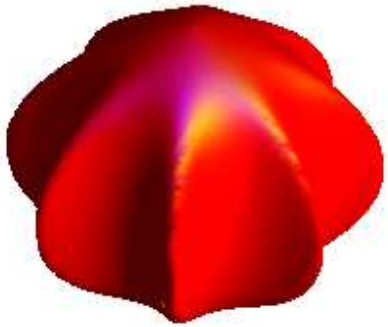
- Dn-Faltfunktion
- Cn-Faltfunktion
- Platonische Körper
- Tetraeder-Symmetriegruppe
- Oktaeder-Symmetriegruppe
- Ikosaeder-Symmetriegruppe

Beispiele

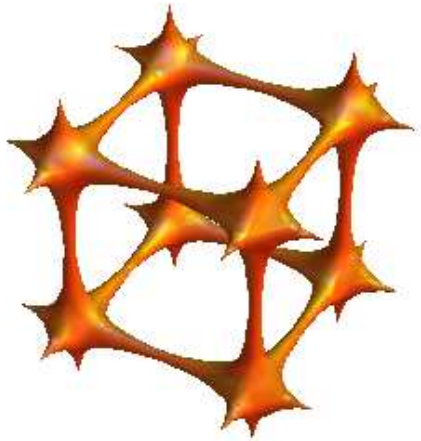


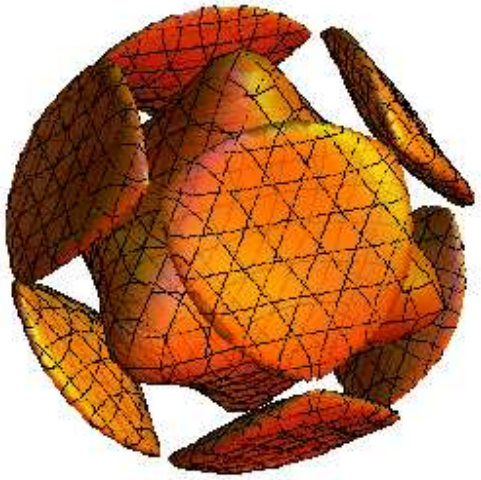


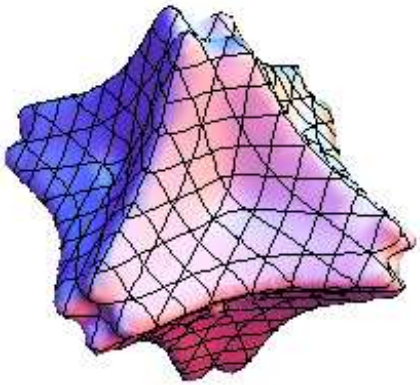




Beispiele







Ein Polynom…

0.5625 +0.294733 (-1.+x^2+y^2+z^2)4-0.860913 (-1.+x^2+y^2+z^2)3 (4 x2-6 x z+z2) (x4-10 x2 y2+5 y4+2 x3 z-30 x y2 z-x2 z2-25 y2 z2-2 x z3+z4) (x4-10 x2 y2+5 y4-8 x3 z+14 x2 z2-10 y2 z2+8 x z3+z4)+0.125 (4 x^2-6 x z+z^2)2 (x^4-10 x^2 y^2+5 y^4+2 x^3 z-30 x y^2 z-x^2 z^2-25 y^2 z^2-2 x z^3+z^4)2 (x^4-10 x^2 y^2+5 y^4-8 x^3 z+14 x^2 z^2-10 y^2 z^2+8 x z^3+z^4)2+0.5625 (4 x^2-6 x z+z^2)4 (x^4-10 x^2 y^2+5 y^4+2 x^3 z-30 x y^2 z-x^2 z^2-25 y^2 z^2-2 x z^3+z^4)4 (x^4-10 x^2 y^2+5 y^4-8 x^3 z+14 x^2 z^2-10 y^2 z^2+8 x z^3+z^4)4+(-2.5+1.5 (4 x^2-6 x z+z^2)2 (x^4-10 x^2 y^2+5 y^4+2 x^3 z-30 x y^2 z-x^2 z^2-25 y^2 z^2-2 x z^3+z^4)2 (x^4-10 x^2 y^2+5 y^4-8 x^3 z+14 x^2 z^2-10 y^2 z^2+8 x z^3+z^4)2) (-1.-z (2 x+z) (x^4-x^2 z^2+z^4+10 (-x^2 y^2+x y^2 z)+5 (y^4-y^2 z^2)+2 (x^3 z-x z^3)))2+1. (-1.-z (2 x+z) (x^4-x^2 z^2+z^4+10 (-x^2 y^2+x y^2 z)+5 (y^4-y^2 z^2)+2 (x^3 z-x z^3)))4+(-1+x2+y2+z2) (4 x2-6 x z+z2) (x4-10 x2 y2+5 y4+2 x3 z-30 x y2 z-x2 z2-25 y2 z2-2 x z3+z4) (x4-10 x2 y2+5 y4-8 x3 z+14 x2 z2-10 y2 z2+8 x z3+z4) (-2.01777-1.18934 (4 x^2-6 x z+z^2)2 (x^4-10 x^2 y^2+5 y^4+2 x^3 z-30 x y^2 z-x^2 z^2-25 y^2 z^2-2 x z^3+z^4)2 (x^4-10 x^2 y^2+5 y^4-8 x^3 z+14 x^2 z^2-10 y^2 z^2+8 x z^3+z^4)2-1.58579 (-1.-z (2 x+z) (x^4-x^2 z^2+z^4+10 (-x^2 y^2+x y^2 z)+5 (y^4-y^2 z^2)+2 (x^3 z-x z^3)))2)+(-1+x^2+y^2+z^2)2 (0.642767 +1.44302 (4 x^2-6 x z+z^2)2 (x^4-10 x^2 y^2+5 y^4+2 x^3 z-30 x y^2 z-x^2 z^2-25 y^2 z^2-2 x z^3+z^4)2 (x^4-10 x^2 y^2+5 y^4-8 x^3 z+14 x^2 z^2-10 y^2 z^2+8 x z^3+z^4)2+1.08579 (-1.-z (2 x+z) (x^4-x^2 z^2+z^4+10 (-x^2 y^2+x y^2 z)+5 (y^4-y^2 z^2)+2 (x^3 z-x z^3)))2) **=0**