

How to connect the CAS with graphic capabilities - Calculating and Representing 3D- tasks on the TI.

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Intersection cone - plane, intersection pyramide - plane, producing special space curves, ... all is done in home screen and the results will be presented in any projection on the graphic screen.

Comment connecter les Systèmes de Calcul Formel et les Capacités Graphiques.- Calculer et représenter en 3-D avec la TI

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Computeralgebra koppelen aan grafische mogelijkheden. 3D-opdrachten berekenen en voorstellen met de TI

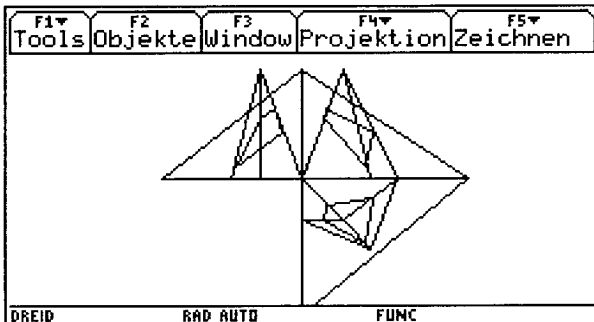
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Doorsnede kegel - vlak, doorsnede piramide - vlak, speciale ruimtekrommen produceren, ... alles gebeurt in het basisscherm en de resultaten worden getoond in eender welke projectie op het grafisch scherm.

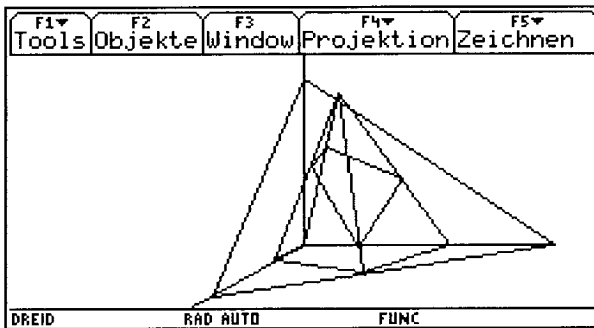
DG auf dem TI

Schnitt der Pyramide $A(3,0,0)$, $B(5,5,0)$, $C(0,7,0)$, $D(0,0,0)$ mit der Ebene $E [PX(10,0,0), PY(0,12,0), PZ(0,0,8)]$ - Intersection pyramid - plane (Calculated in Home Screen)

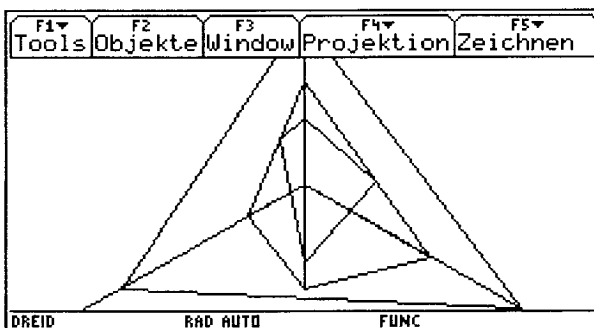
Pyramidenschnitt im Grund- Auf- und Seitenriss - pyramid in top-, front- and side view



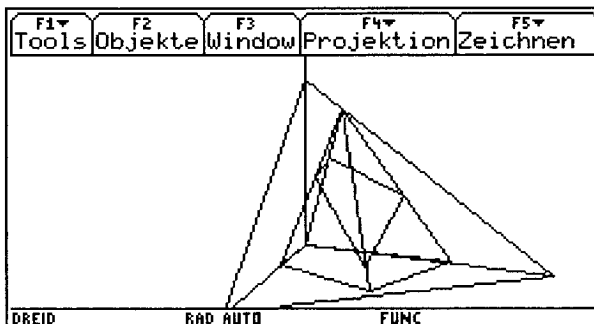
Im Schrägriss - oblique view



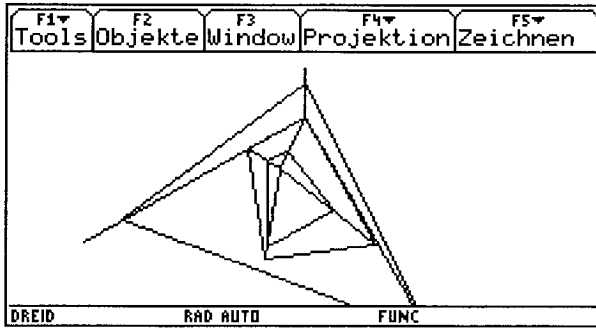
Die isometrische Darstellung - isometric projection



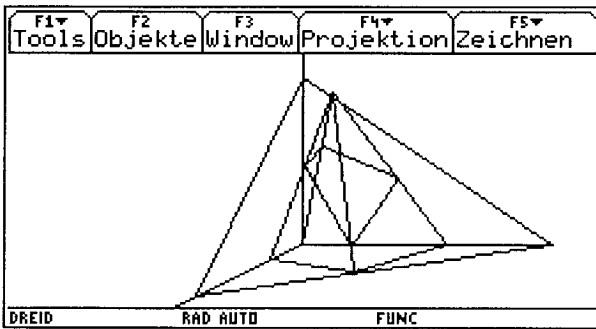
In dimetrischer Abbildung - dimetric projection



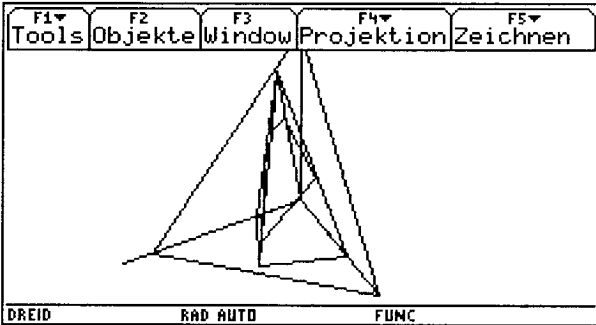
In Militärperspektive - military projection



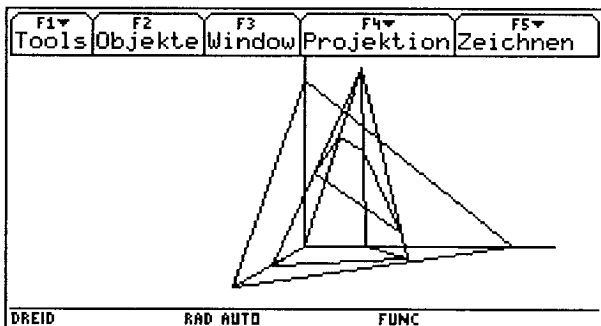
und in Kavaliersperspektive - and in Cavalier Projection



eine beliebige axonometrische Darstellung - an arbitrary axonometric projection:

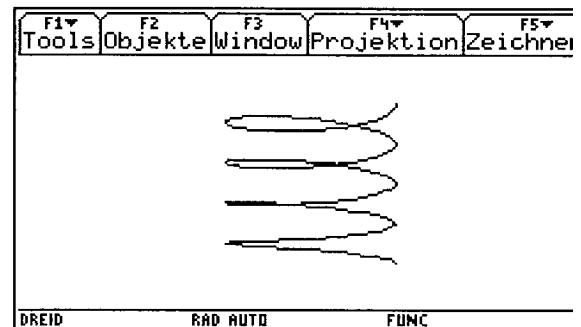
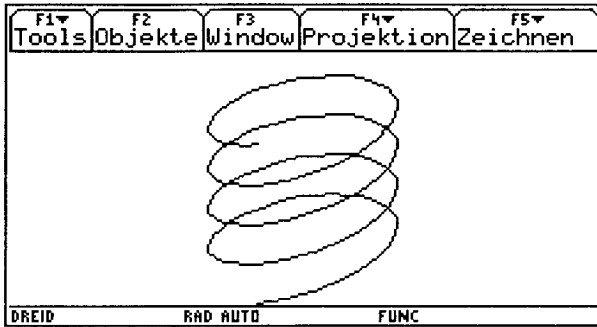


in Zentralperspektive (Projektion auf die x-z-Ebene aus dem Augpunkt $O(5,30,3)$)

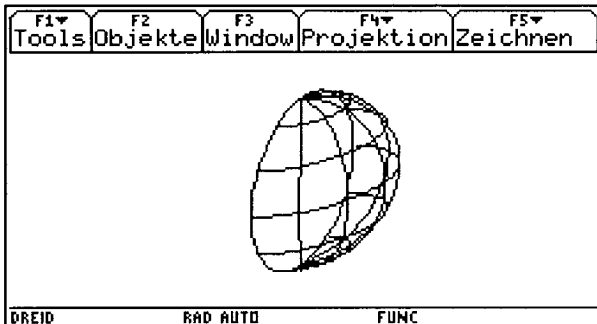


central projection with eye-point $[5,30,3]$

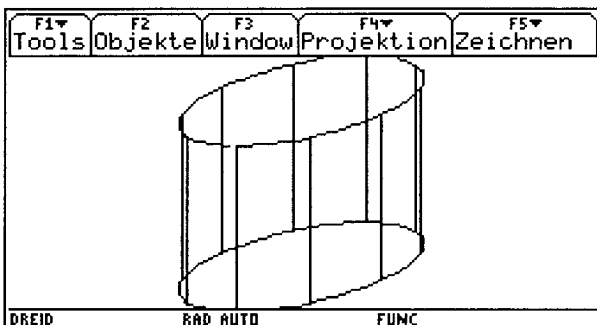
Schraublinie in Schrägriss und in Perspektive - helix in oblique view and central projection



Halbkugel im Schrägriss - a semi sphere in oblique view

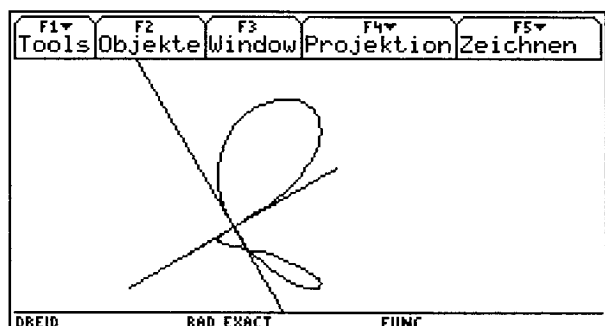
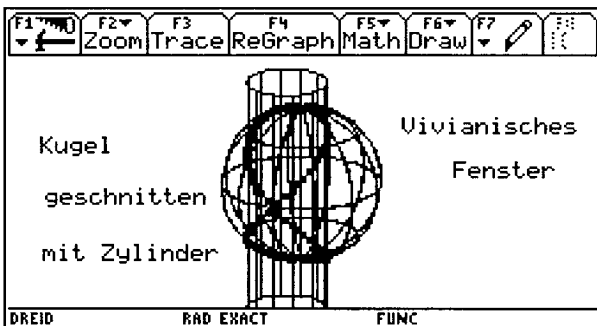


Senkrechter Kreiszyylinder in Perspektive - a cylinder in perspective projection



$$[3 \cos(u), 3 \sin(u), v]$$

Durchdringung einer Kugel mit einem berührenden Zylinder → Vivianisches Fenster



Intersection cylinder - sphere gives the "Window of Viviani" or "Hippopede"

Die Hippopede mit Doppelpunktstangenten in isometrischer Darstellung - the hippopede with tangents in the double point in isometric projection.