

Open Source Resources for Teaching and Research in Mathematics



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Outline

- ~ History
- ~ Definition
- ~ General Applications
- ~ Open Source Mathematics
 - ~ Applications
 - ~ Environments
- ~ Comments

In the Beginning ...

then there were Unix, GNU, and Linux

- ~ 1969 UNIX was born,
 - ~ Portable OS (PDP-7 to PDP-11) – in new “C”
 - ~ Ken Thompson, Dennis Ritchie, and J.F. Ossanna
 - ~ Mailed OS => Unix hackers
- ~ Berkeley Unix - BSD
 - ~ (Berkeley Systems Distribution) 1970-80's
- ~ MIT Hackers
 - ~ Public Domain projects => commercial
 - ~ RMS – Richard M. Stallman
 - ~ EMACS, GNU - GNU's Not Unix, GPL

History

- ~ Free Software Movement – 1983
 - ~ RMS - GNU Project – 1983
 - ~ GNU GPL – GNU General Public License
- ~ Free Software Foundation (FSF) – 1985
 - ~ Free = “free speech not free beer”
- ~ Open Source Software (OSS) – 1998
 - ~ Netscape released Mozilla source code
 - ~ Open Source Initiative (OSI) – 1998
 - ~ Eric S. Raymond and Bruce Perens
 - ~ *The Cathedral and the Bazaar* 1997 - Raymond

The Cathedral and the Bazaar

- ~ The Cathedral model,
 - ~ source code is available with each software release,
 - ~ code developed between releases is restricted to an exclusive group of software developers.
 - ~ GNU Emacs and GCC are examples.
 - ~ The Bazaar model,
 - ~ code is developed over the Internet in public view
 - ~ Raymond credits Linus Torvalds, Linux leader, as the inventor of this process.
- http://en.wikipedia.org/wiki/The_Cathedral_and_the_Baz

Given Enough Eyeballs ...

- ~ central thesis is that "given enough eyeballs, all bugs are shallow"
- ~ the more widely available the source code is for public testing, scrutiny, and experimentation, the more rapidly all forms of bugs will be discovered.
- ~ Example: Wikipedia

The Free Software Definition

Free software is a matter of liberty, not price. To understand the concept, you should think of free as in free speech, not as in free beer.

Free software is a matter of the users' freedom to run, copy, distribute, study, change and improve the software. More precisely, it refers to four kinds of freedom, for the users of the software:

- * The freedom to run the program, for any purpose (freedom 0).
- * The freedom to study how the program works, and adapt it to your needs (freedom 1). Access to the source code is a precondition for this.
- * The freedom to redistribute copies so you can help your neighbor (freedom 2).
- * The freedom to improve the program, and release your improvements to the public, so that the whole community benefits (freedom 3). Access to the source code is a precondition for this.

A program is free software if users have all of these freedoms. Thus, you should be free to redistribute copies, either with or without modifications, either gratis or charging a fee for distribution, to anyone anywhere. Being free to do these things means (among other things) that you do not have to ask or pay for permission.

The Open Source Definition

1. Free Redistribution: the software can be **freely given away or sold**. (This was intended to encourage sharing and use of the software on a legal basis.)
2. Source Code: the **source code must either be included or freely obtainable**. (Without source code, making changes or modifications can be impossible.)
3. Derived Works: **redistribution of modifications must be allowed**. (To allow legal sharing and to permit new features or repairs.)
4. Integrity of The Author's Source Code: licenses may require that modifications are redistributed only as patches.
5. No Discrimination Against Persons or Groups: **no one can be locked out**.
6. No Discrimination Against Fields of Endeavor: **commercial users cannot be excluded**.
7. Distribution of License: The **rights attached to the program must apply to all** to whom the program is redistributed without the need for execution of an additional license by those parties.
8. **License Must Not Be Specific to a Product**: the program cannot be licensed only as part of a larger distribution.
9. **License Must Not Restrict Other Software**: the license cannot insist that any other software it is distributed with must also be open source.
10. **License Must Be Technology-Neutral**: no click-wrap licenses or other medium-specific ways of accepting the license must be required.

Obituary – Netscape

Oct 13, 1994- Mar 1, 2008

- ~ Oct 13 1994 Mosaic Netscape 0.9
 - ~ Marc Andreessen, and others from Mosaic
- ~ 1995 MS IE appeared in Windows 95 Plus Pack
- ~ Jan 1998 Free Netscape Communicator 4.0
 - ~ Under Netscape Public License
- ~ Nov 24, 1998 To be purchased by AOL
- ~ Nov 14, 2000 AOL released Netscape 6.0
- ~ July 15, 2003 Time Warner disbanded Netscape
- ~ Oct 2007 Last Release – Netscape Navigator 9.0
- ~ Dec 28 2007, AOL announced pending death of Netscape

How not to do open source

“**Jamie Zawinski**, another of the key figures in opening up Netscape Navigator, and the person who had come up with the Mozilla name back in 1994 – a combination of the original “Mosaic” and Godzilla – **wrote** in his resignation letter when he left AOL, which had recently bought Netscape in November 1998:

Open source does work, but it is most definitely not a panacea. If there's a cautionary tale here, it is that you can't take a dying project, sprinkle it with the magic pixie dust of “open source,” and have everything magically work out. Software is hard. The issues aren't that simple.”

- The Netscape Story: From Mosaic to Mozilla, Glyn Moody, 12/1/2007

Some Open Source Software

Web Browsing



Mozilla Firefox

Graphics



GIMP



Paint.NET



Inkscape

3D Graphics



Blender

Word Processing / Office Suites



OpenOffice.org



AbiWord

Note Taking



Freemind



Keynote

Outer Space



Celestia



Stellarium

Video Player



Miro

DVD Ripping



Handbrake

E-mail



Thunderbird

Sound Recording



Audacity

Podcasting



Juice

Utilities



7-Zip



Filezilla



ClamWin

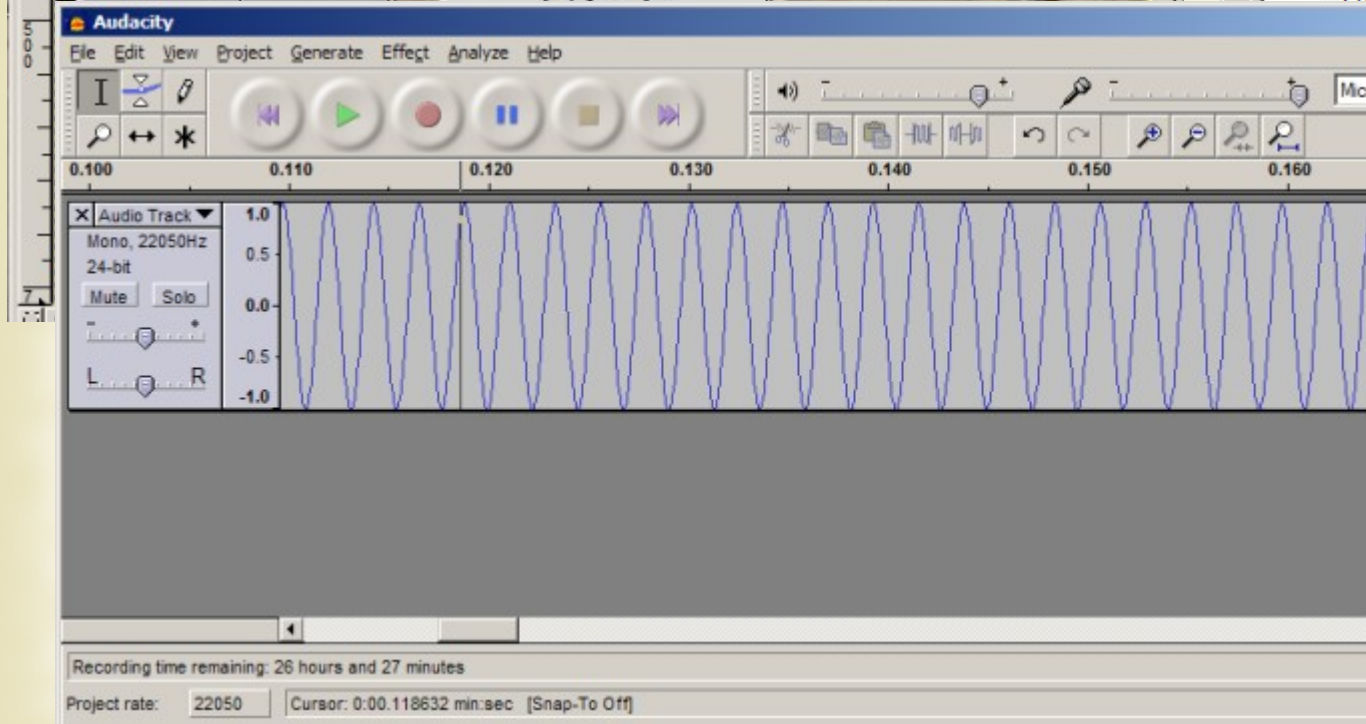
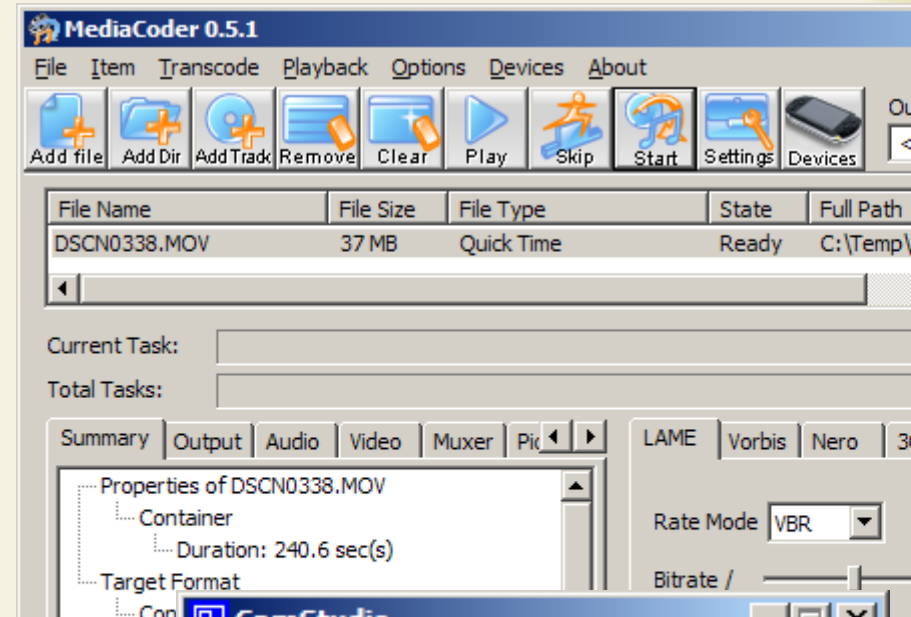
Portable Apps

Carry your
favorite
applications and
operating system
on a (USB) stick

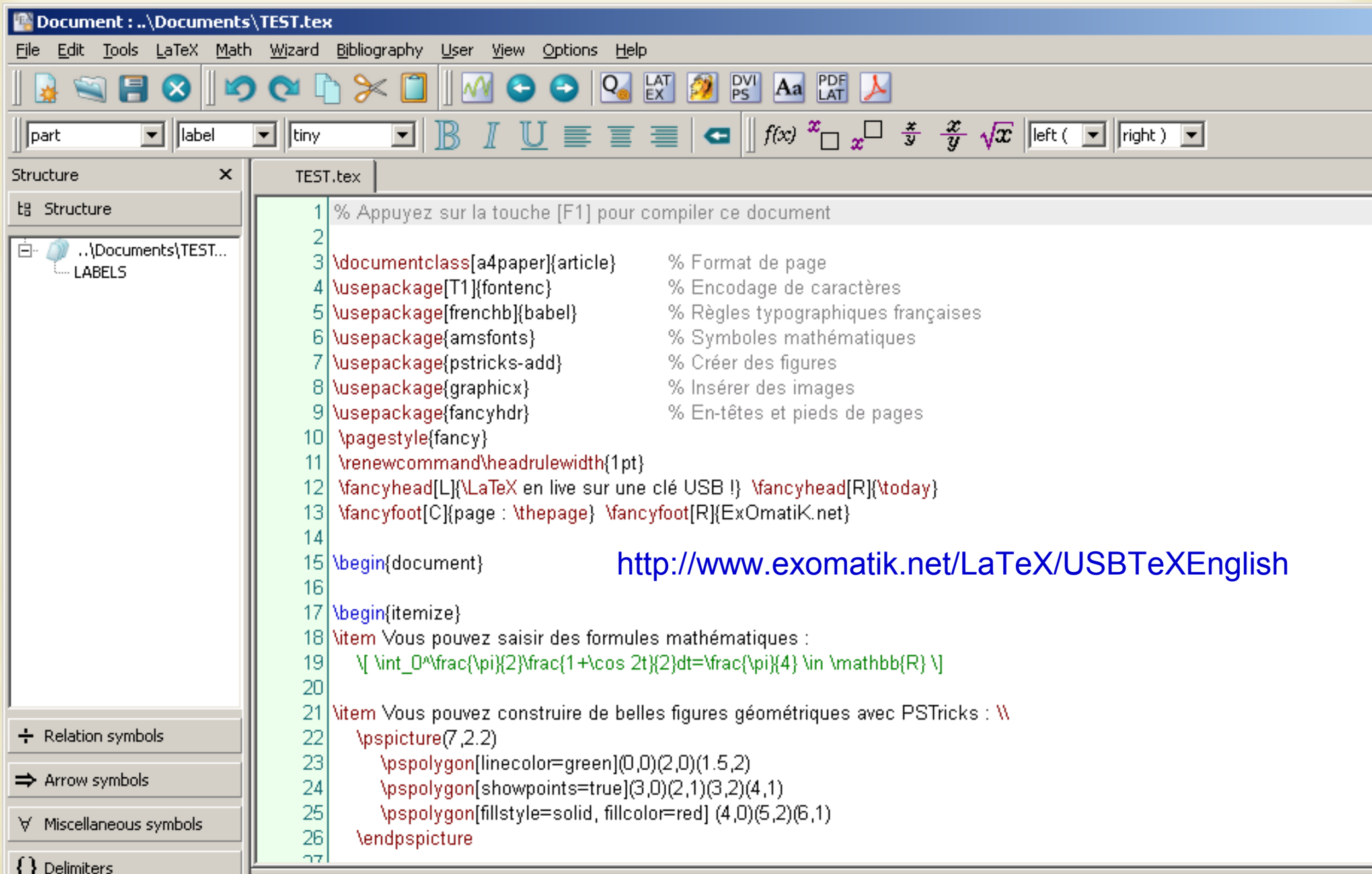


Multimedia-

GIMP, Audacity, Mediacoder, CamStudio



USB TeX – on the go



The screenshot shows a LaTeX editor window titled "Document : ..\Documents\TEST.tex". The menu bar includes File, Edit, Tools, LaTeX, Math, Wizard, Bibliography, User, View, Options, and Help. The toolbar contains icons for file operations, navigation, and LaTeX-specific functions like font selection and PDF generation. The main editing area displays the following LaTeX code:

```
1 % Appuyez sur la touche [F1] pour compiler ce document
2
3 \documentclass[a4paper]{article}      % Format de page
4 \usepackage[T1]{fontenc}            % Encodage de caractères
5 \usepackage[frenchb]{babel}        % Règles typographiques françaises
6 \usepackage{amsfonts}              % Symboles mathématiques
7 \usepackage{pstricks-add}          % Créer des figures
8 \usepackage{graphicx}              % Insérer des images
9 \usepackage{fancyhdr}              % En-têtes et pieds de pages
10 \pagestyle{fancy}
11 \renewcommand\headrulewidth{1pt}
12 \fancyhead[L]{\LaTeX en live sur une clé USB !} \fancyhead[R]{\today}
13 \fancyfoot[C]{page : \thepage} \fancyfoot[R]{ExOmatik.net}
14
15 \begin{document}                    http://www.exomatik.net/LaTeX/USBTexEnglish
16
17 \begin{itemize}
18 \item Vous pouvez saisir des formules mathématiques :
19     \[ \int_0^{\frac{\pi}{2}} \frac{1+\cos 2t}{2} dt = \frac{\pi}{4} \in \mathbb{R} \]
20
21 \item Vous pouvez construire de belles figures géométriques avec PSTricks : \\\
22     \pspicture(7,2.2)
23         \pspolygon[linecolor=green](0,0)(2,0)(1.5,2)
24         \pspolygon[showpoints=true](3,0)(2,1)(3,2)(4,1)
25         \pspolygon[fillstyle=solid, fillcolor=red](4,0)(5,2)(6,1)
26     \endpspicture
27
```

The left sidebar shows a "Structure" panel with a tree view of the document's content, including a folder named "LABELS". Below the sidebar are buttons for "Relation symbols", "Arrow symbols", "Miscellaneous symbols", and "Delimiters".

Linux OS

Developed in response to proprietary UNIX

Users needed a complete Unix-compatible software system

"I'm doing a (free) operating system (just a hobby, won't be big and professional like gnu)..."
- Linus Torvalds, 1991 (Torvalds)

Linux & GNU worked to provide fully functional and free operating system

Portable Operating Systems



Open Source Resources, ICTCM 2008, San Antonio

Mathematics Software - Survey

Reduce 1960s/1968

Macsyma 1968/1978

/Maxima 1998 (1982
version)

Axiom 1971/2002

MuMath 1970s/1980

/Derive 1988

/TI-Nspire 2006

MATLAB late 70's/1984

Maple 1979/1985

Cayley (1982-1993)

/Magma 1990/1993

MathCAD 1985

Mathematica 1986/1988

PARI/GP 1985

GAP 1986

MuPad 1989/92

Fermat 1985/1993

LiveMath – 1999

/Expressionist/Theorist

/Mathview & MathPlus

Python 1991, VPython 2000,

IPython 2005, SymPy 2006,
matplotlib, ...

SAGE Feb 24, 2005

http://en.wikipedia.org/wiki/Comparison_of_computer_algebra_systems

Open Source Mathematics

- ~ Computer Algebra Systems
- ~ Numerical Computing
- ~ Programming
- ~ Geometry
- ~ Number Theory
- ~ Graphics
- ~ Mathematics Environments

Axiom

The screenshot shows the Axiom computer algebra system interface. The window title is "no name". The menu bar includes "File", "Edit", "Insert", "Session", "Format", "Document", "View", "Go", "Tools", and "Help". The toolbar contains various icons for file operations, editing, and viewing. The main workspace displays the following sequence of commands and outputs:

```
→ s:= rule(u(x, t) == f(x/sqrt(t))/sqrt(t))
```

$$u(x, t) == \frac{f\left(\frac{x}{\sqrt{t}}\right)}{\sqrt{t}} \tag{5}$$

Type: RewriteRule(Integer,Integer,Expression Integer)

```
→ s(lhs(heat)) = 0
```

$$\frac{-2t f''\left(\frac{x}{\sqrt{t}}\right) - x\sqrt{t} f'\left(\frac{x}{\sqrt{t}}\right) - t f\left(\frac{x}{\sqrt{t}}\right)}{2t^2\sqrt{t}} = 0 \tag{6}$$

Type: Equation Expression Integer

```
→ subst(lhs(%), x = z*sqrt(t)) = 0
```

$$\frac{-2f''(z) - z f'(z) - f(z)}{2t\sqrt{t}} = 0 \tag{7}$$

Type: Equation Expression Integer

```
→ % * denom(lhs(%))
```

$$-2f''(z) - z f'(z) - f(z) = 0 \tag{8}$$

Type: Equation Expression Integer

Maxima

Maxima Manual - Matrices and Linear Algebra

File Edit Options Maxima Help

```
A:matrix([1,2],[3,4]);
```

```
(D1)      [ 1  2 ]
          [    ]
          [ 3  4 ]
```

```
(C2)
DETERMINANT(A);
```

```
(D2)      - 2
(C3)
```

```
B:matrix([1,5.3,7],[5,4,0],[1,0,0]);
```

```
(D3)      [ 1  5.3  7 ]
          [    ]
          [ 5   4   0 ]
          [    ]
          [ 1   0   0 ]
```

```
(C4)
ECHELON(D3);
```

```
RAT replaced 5.3 by 53//10 = 5.3
```

```
(D4)      [ 1  0  0 ]
          [    ]
          [ 0  1  0 ]
          [    ]
          [ 0  0  1 ]
```

```
(C5) |
```

File Back Forward Edit Options Url: file:/C:/PROGRA~1/Maxima/share/maxima/592E9D~1.0/doc/html/maxima_26.html

Variable: **DOTIDENT**

default: [1] The value to be returned by X^0 .

Variable: **DOTSCRULES**

default: [FALSE] when TRUE will cause $A.SC$ or $SC.A$ to simplify to $SC*A$ and $A.(SC*B)$ to simplify to $SC*(A.B)$

Function: **ECHELON** (*M*)

produces the echelon form of the matrix *M*. That is, *M* with elementary row operations performed on it such that the first non-zero element in each row in the resulting matrix is column elements under the first one in each row are all zero.


```
[2  1 - A -5 B ]
```

Yacas

Computer calculations made easy.

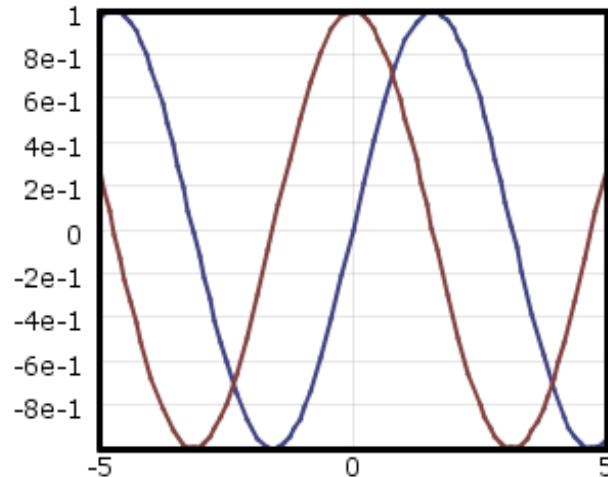


[Home](#) [Tutorial](#) [My Yacas](#) [Manual](#)

Write code 

Yacas calculation center

In> `Plot2D({Sin(x),Cos(x)})`



Out> True

[Click here to enter an expression](#)

Find function:

D
DiagonalMatrix
Div
Factor
ForEach
Integrate
Limit
N
Pi
Plot2D
Select
Simplify
Solve
Sum
Taylor
Abs
Add
Append
Apply
ArcCos
ArcSin
ArcTan
Arg

Function Plot2D — adaptive two-dimensional plotting [more...](#)

Prototypes

- ◆ `Plot2D(f(x))`
- ◆ `Plot2D(f(x), a b)`
- ◆ `Plot2D(f(x), a b, option=value)`
- ◆ `Plot2D(f(x), a b, option=value, ...)`
- ◆ `Plot2D(list, ...)`

Examples

(clicking on one of the items below sends them to the Yacas calculation center on the left)

- ◆ [Plot2D\(Sin\(x\)\)](#)
- ◆ [Plot2D\(Sin\(x\)/x,-10:10\)](#)
- ◆ [Plot2D\({Sin\(x\),Cos\(x\)}\)](#)

Mathomatic

```
xterm
1-> ; This is the famous Bailey-Borwein-Plouffe (BBP) algorithm.
1-> ; Sum this n = 0 to infinity to compute pi.
1-> ; This is especially useful for calculating pi in hexadecimal.
1-> ; One hexadecimal digit of pi is generated with each iteration.
1->
1-> ((4/((8*n) + 1)) - (2/((8*n) + 4)) - (1/((8*n) + 5)) - (1/((8*n) + 6)))/(16^n)

      4           2           1           1
      -----
      ((8*n) + 1) ((8*n) + 4) ((8*n) + 5) ((8*n) + 6)
#1: -----
      (16^n)

1-> simplify

      ((120*(n^2)) + (151*n) + 47)
#1: -----
      ((16^n)*((512*(n^4)) + (1024*(n^3)) + (712*(n^2)) + (194*n) + 15))

1-> sum n 0 10 ; Sum as n goes from 0 to 10.
#2: 3.1415926535898

1-> pi ; Verify that the digits are the same.
answer = 3.1415926535898

1-> x^n/n! ; Sum this n = 0 to infinity to compute (e^x).

      (x^n)
#3: -----
      (n!)

3-> replace x with 1 ; Sum this n = 0 to infinity to compute e:

      1
#3: -----
      (n!)
```

<http://mathomatic.org/math/>

MATLAB Wanna Be's

The screenshot displays the MATLAB 7.4.0 (R2007a) environment. The workspace window shows three variables: 'a' (a 3x3 matrix), 'q' (a 3x3 matrix), and 'r' (a 3x3 matrix). The Command Window shows the execution of the following commands:

```
>> a = [12, -51, 4; 6, 167, -68; -4, 24, -41]
a =
    12   -51    4
     6   167   -68
    -4    24   -41

>> [q,r]=qr(a)
q =
   -0.857142857142857    0.394285714285714    0.331428571428571
   -0.428571428571429   -0.902857142857143   -0.0342857142857143
    0.285714285714286   -0.171428571428571    0.942857142857143

r =
         -14         -21         14
          0        -175         70
          0           0        -35

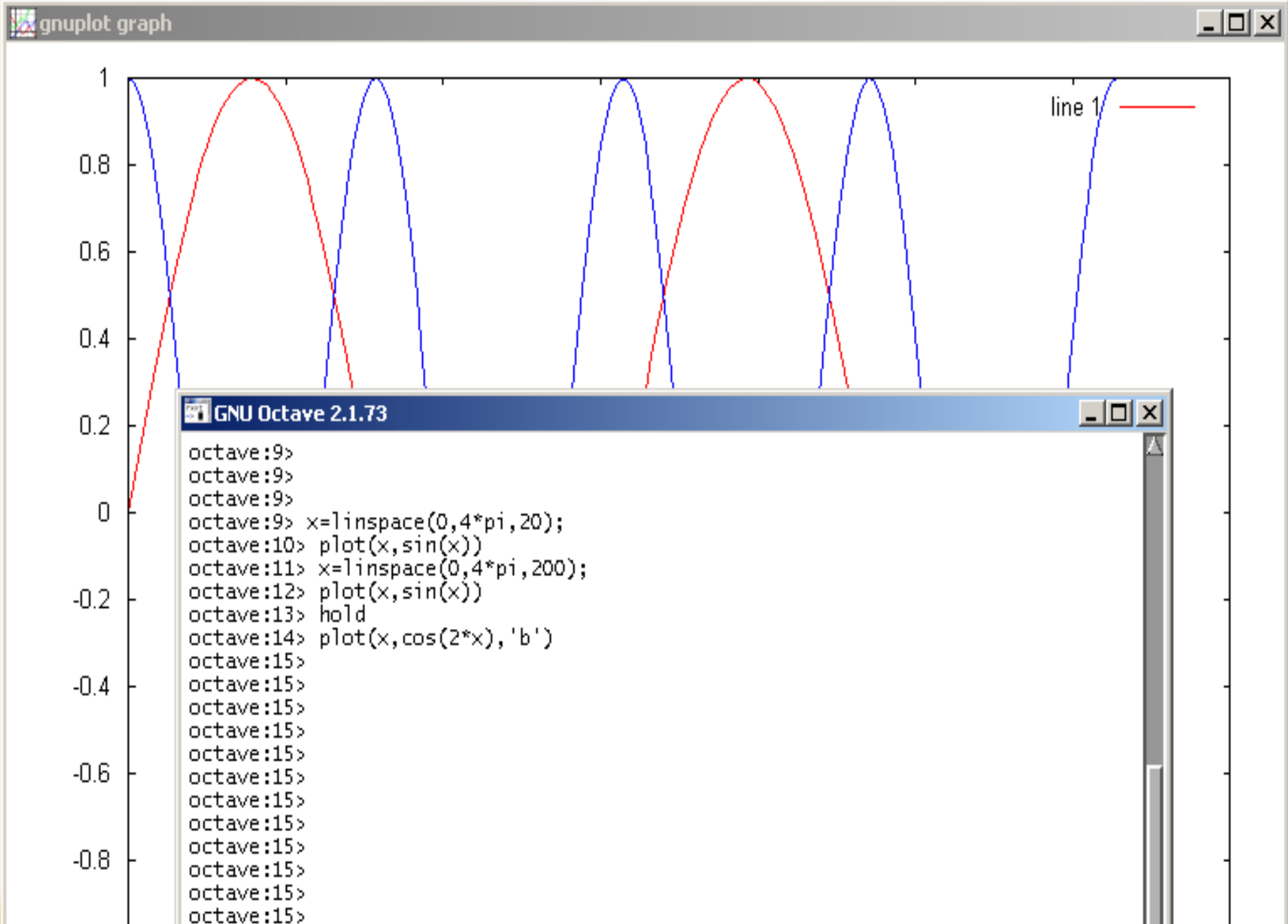
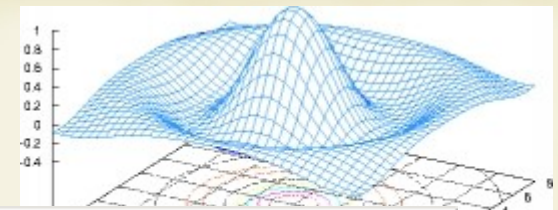
>>
```

The Command History window shows the following sequence of commands:

```
29/04/07 0:36 --t
  qr ()
29/04/07 0:41 --t
  ver
29/04/07 1:59 --t
  a ? [12, -51, 4; 6, 167, -68; -4, 24,
  a = [12, -51, 4; 6, 167, -68; -4, 24,
  [q,r]=qr(a)
  clc
  a = [12, -51, 4; 6, 167, -68; -4, 24,
  [q,r]=qr(a)
  clc
  a = [12, -51, 4; 6, 167, -68; -4, 24,
  [q,r]=qr(a)
```

GNU Octave

<http://www.gnu.org/software/octave/>



Scilab

The screenshot displays the Scilab environment with three main windows:

- SciPad - kulka na sprzynkach(bart).sci [ReadOnly]**: A script editor containing the following code:

```
//Bartosz Kosiorek
clear
xdel(winsid())
g=10;
masa=1;
k=0.1;
wsp_tl=0.01;

tk=1000; //
podz=3000;

odl=5; //odlegl
dl=5; //dlugosc

r0=[2.51;-5]; //
v0=[0.0;0]; // po

y0=[r0;v0];
t0=0;
t=linspace(t0, tk, p

// yy - wartosc zw
// y0 - wartosci p
// t0 - czas pocza

function [x]=wspol
    x=sqrt(d^2/(a^2+
endfunction

function [yy]=ruch
    yy(1)=y(3); //y
    yy(2)=y(4);
    //wek=[y(1);y(2)
    wek=[y(1);y(2)]*
    wek2=[y(1)-odl;y

    yy(3)= (-k+
    yy(4)= (-k+
endfunction

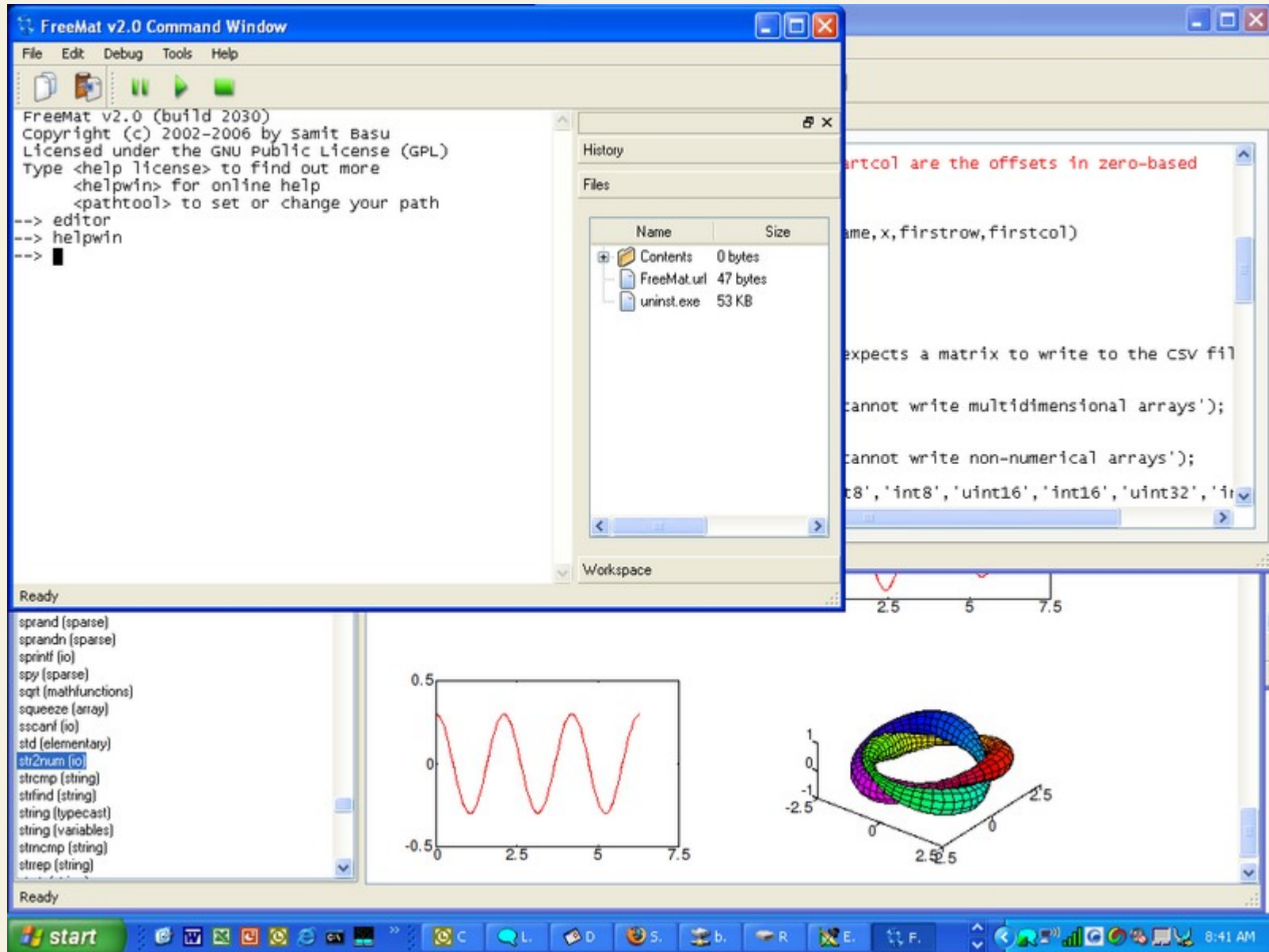
YY=ode(y0, t0, t, ruch);
```
- scilex**: A console window showing the startup execution process:

```
scilab-4.0
Copyright (c) 1989-2006
Consortium

Startup execution:
loading initial enviro
-->
```
- Scilab Graphic (1)**: A 3D plot window displaying a complex, multi-lobed attractor structure. The plot features a dense blue wireframe mesh forming a large, irregular shape. Inside this structure, a smaller, more solid red shape is visible, with a green dot at its center. The axes are labeled with numerical values: the x-axis ranges from 2.485 to 2.515, and the y-axis ranges from -110 to 0.

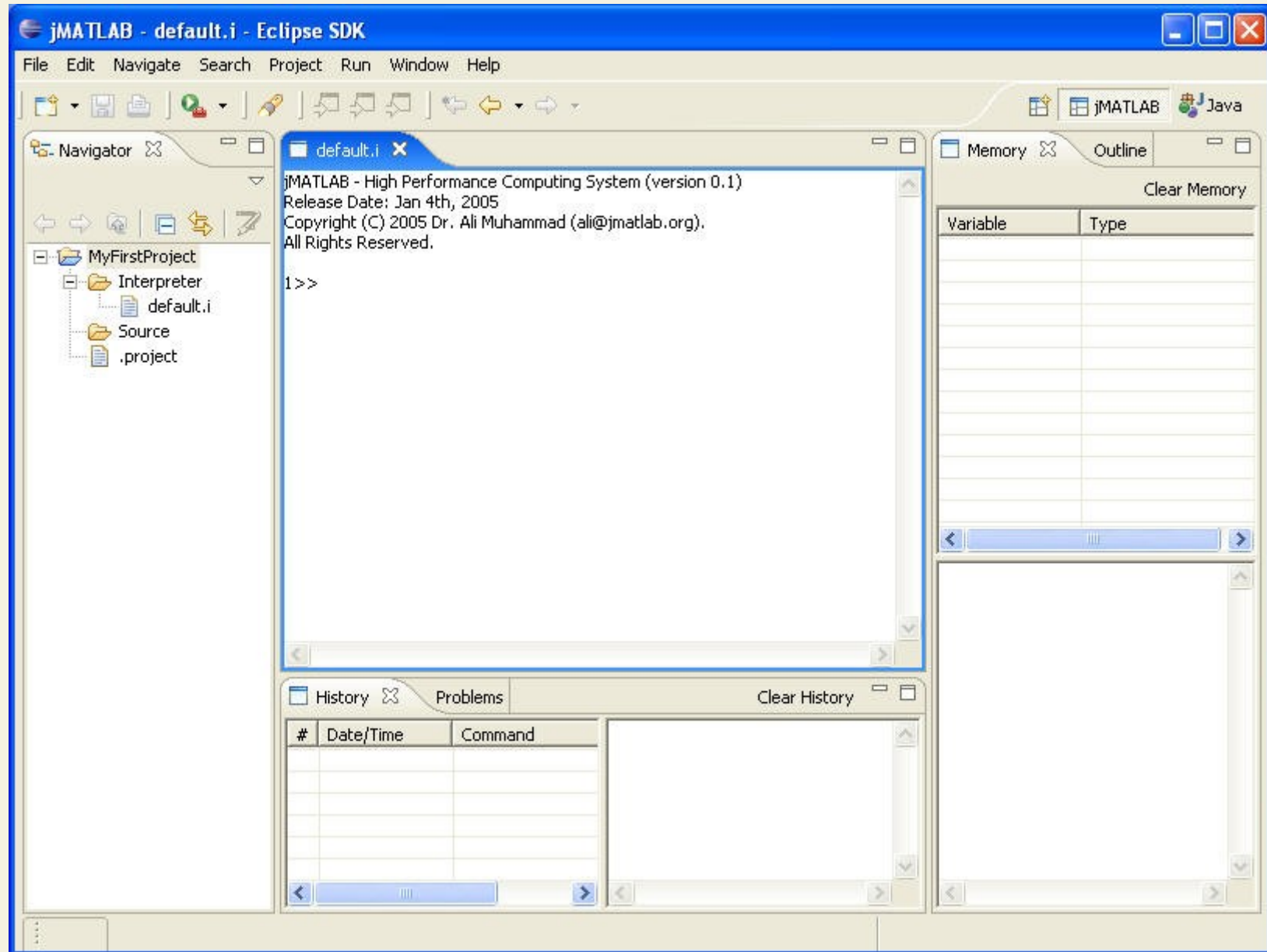
The bottom of the image shows the Windows taskbar with several open applications: [fizyka komputero..., [Kadu: 6299727], [GIMP], SciPad - kulka na..., scilex, and Scilab Graphic (1).

FreeMat



http://freemat.sourceforge.net/wiki/index.php/Main_Page

jMatlab



<http://www.jmatlab.org/>

Open Source Resources, ICTCM 2008, San Antonio

Euler

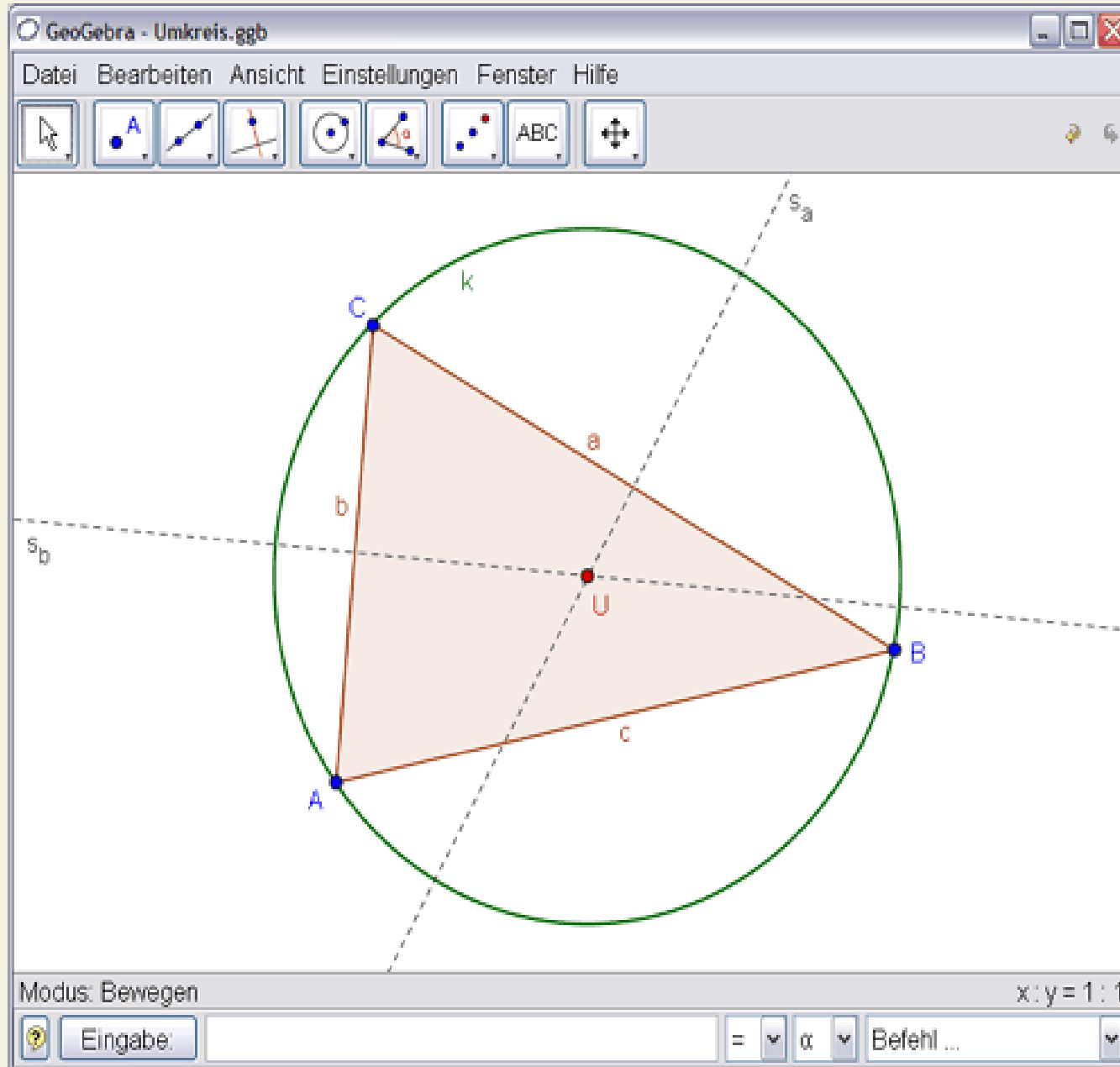
The screenshot displays the Euler Math Toolbox interface. On the left, a text editor window titled "Euler Math Toolbox (02) - Introduction to 3D Graphics" contains the following code and text:

```
This is a demo of the 3d plotting features of Euler.  
  
First, we see the all in one function plot3d.  
We wait for a key at most 5 seconds.  
plot3d("x*y",title="Please press Return"); wait  
We can add user interaction easily.  
  
Turn the plot around with the function keys.  
in and out. The space key resets the view.  
  
End the interaction with the return key.  
plot3d("sin(x)-sin(y)",axes=1,shaded="on")+|y|"  
We can also change the bounds of the plot.  
plot3d("sin(x)*sin(y)",xmax=0,xmax=2*pi,ymax=0,  
The next plot uses a finer grid and adds shaded  
source is overhead, but this can be changed to  
plot3d("sin(x)*sin(y)",xmax=0,xmax=2*pi,ymax=0,  
  
plot3d("sin(x)*sin(y)",xmax=0,xmax=2*pi,ymax=0,  
>plot3d("sin(x)*sin(y)",xmax=0,xmax=2*pi,ymax=0,
```

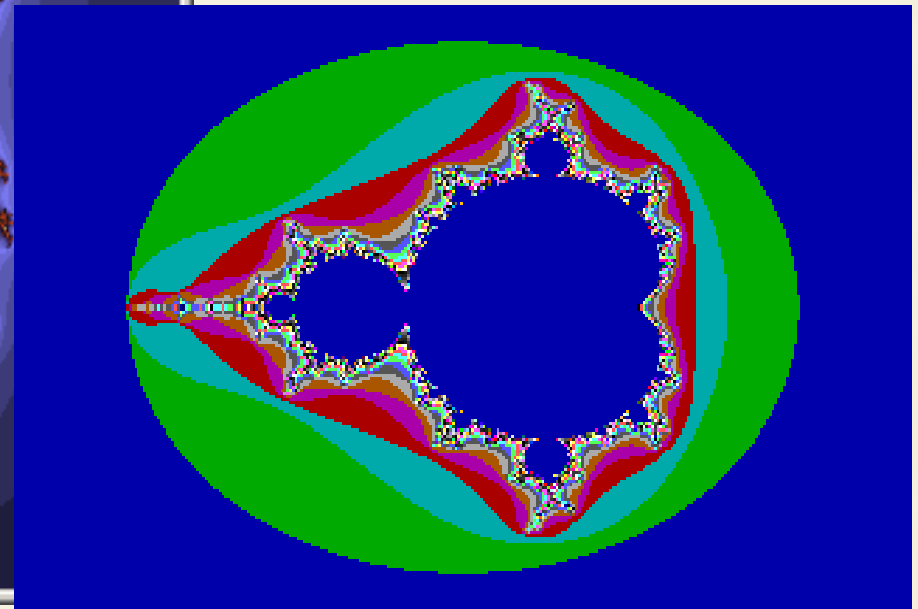
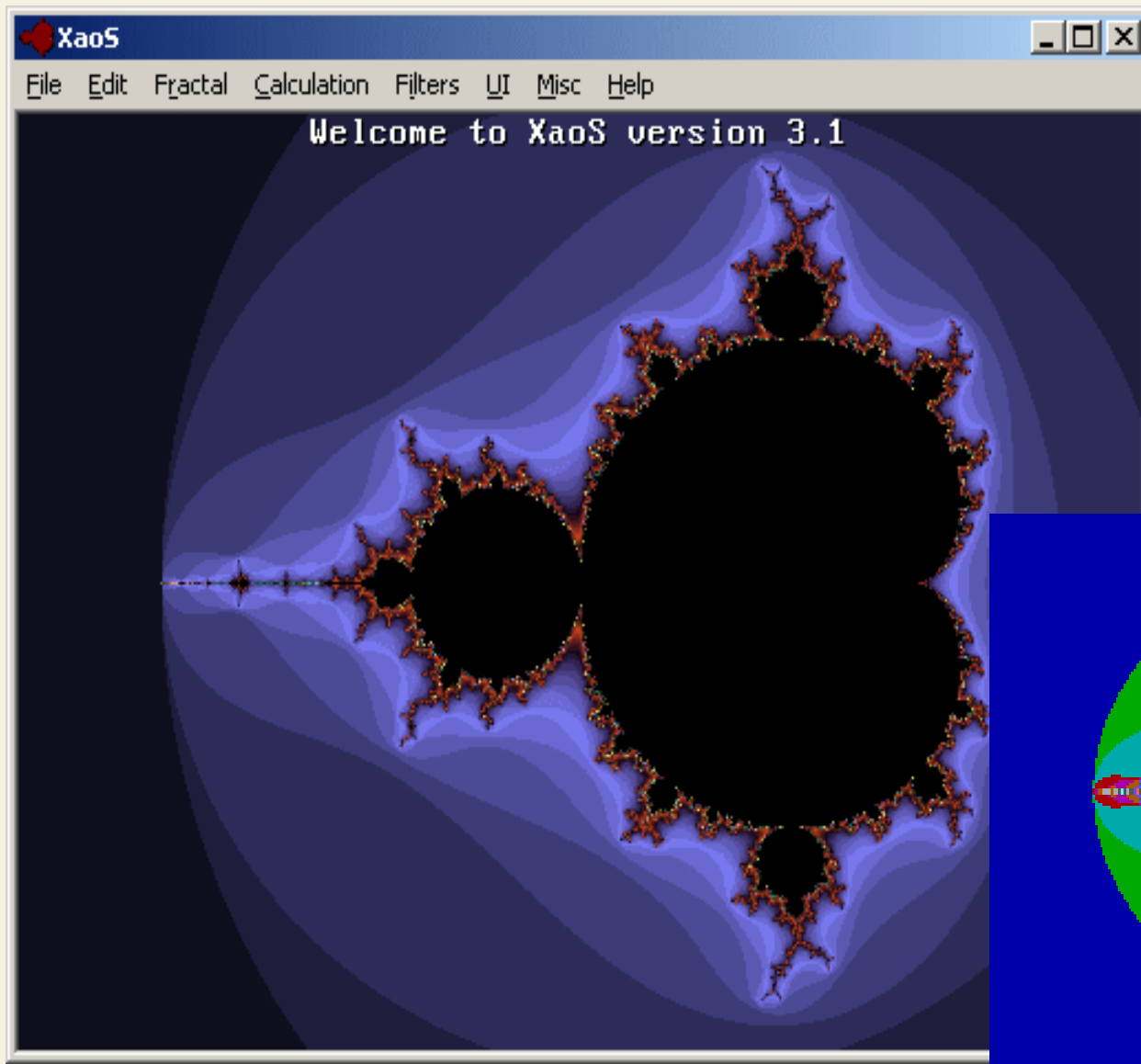
Below the code, a small 3D plot shows a surface with a grid. The main window on the right, titled "Euler Math Toolbox - Graphics", shows a larger 3D plot of a surface with a grid, viewed from a perspective angle. The plot is contained within a 3D coordinate system with axes labeled from 0 to 6.3. The background of the software interface shows a desktop with a clock displaying "DECEMBER" and a date "16 23 30".

<http://mathsrv.ku-eichstaett.de/MGF/homes/grothmann/euler/index.html>

GeoGebra



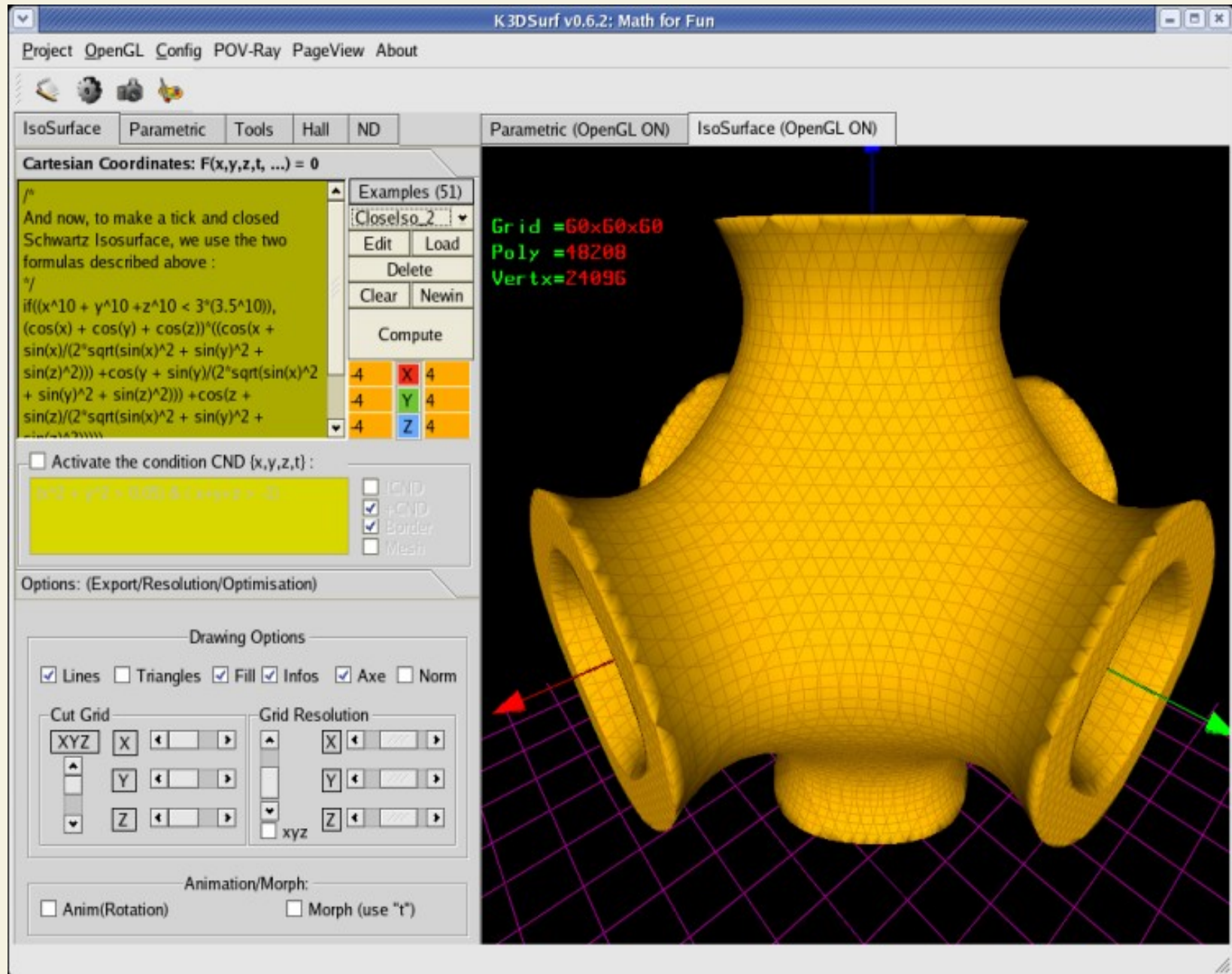
Fractint and Xaos



<http://wmi.math.u-szeged.hu/xaos/doku.php>

<http://spanky.triumf.ca/www/fractint/fractint.html>

K3DSurf



And more ...

- ~Pari/GP <http://pari.math.u-bordeaux.fr/>
- ~GAP <http://www.gap-system.org/>
- ~Macaulay 2
<http://www.math.uiuc.edu/Macaulay2/>
- ~Singular <http://www.singular.uni-kl.de/>
- ~The R Project <http://www.r-project.org/>

Can projects be bundled together?

Quantian - Linux

<http://dirk.eddelbuettel.com/quantian.html>

The screenshot displays the Quantian Linux desktop environment. On the left, the desktop background features icons for Trash, CD-ROM [cdrom], Floppy disk, and Hard Disk Partition [hda1]. The main workspace contains several windows:

- emacs: *R***: A text editor window showing R code and documentation for the `nlm` package. The code includes `demo(xmpGBSgreeks3D)` and `demo(xmpGBSgreeks3D)`. The documentation text reads: "Some linear and generalized linear modelling examples from 'An Introduction to Statistical Modelling' by Annette Dobson. Nonlinear least-squares using nlm() 'Visualize' steps in Tukey's smoothers".
- Shell - Konsole**: A terminal window showing the command `knoppix@tty1[knoppix]# sleep 2 && import -window root tmp/quantian_0.5.9.2.jpeg`.
- R Graphics: Device 2 (ACTIVE)**: A window displaying six 3D surface plots arranged in a 3x2 grid, showing various mathematical surfaces.
- openMosixview 1.5**: A monitoring window showing system statistics. It includes a table with columns for id, clusternodes, load-balancing efficiency, overall load, overall used memory, all memory, and all cpu.

The openMosixview window displays the following data:

id	clusternodes	load-balancing efficiency	overall load	overall used memory	all memory	all cpu
all	all-nodes	100%	0%	12%	502 MB	2
506	192.168.1.250	17023	0%	10%	255	1
357	192.168.1.101	18009	0%	14%	247	1

The desktop also features a taskbar at the bottom with icons for system settings, network, and other applications. A cartoon penguin character is visible on the right side of the screen, pointing towards the text "The Quantian Scientific Computing Environment".

The Quantian Scientific Computing Environment

```

Shell - sage dev
Session Edit View Bookmarks Settings Help

| SAGE Version 0.9.26, Build Date: 2005-12-23-0959 |
| Distributed under the terms of the GNU General Public License |
| For help type <object>?, <object>??, %magic, or help |
-----

sage: E = EllipticCurve(GF(5),[0,0,1,-1,0])
sage: maxima_console()
Maxima 5.9.2 http://maxima.sourceforge.net
Using Lisp GNU Common Lisp (GCL) GCL 2.6.7 (aka GCL)
Distributed under the GNU Public License. See the file COPYING.
Dedicated to the memory of William Schelter.
This is a development version of Maxima. The function bug_report()
provides bug reporting information.
(%i1) laplace(sin(a*t),t,s);

(%o1)
          a
        -----
          2      2
         s  + a

(%i2) plot2d (sec(x), [x, -2, 2], [y, -20, 20], [nticks, 200]);

(%o2)
sage: E.abelian_group()
(Abelian Group with invariants [8], ((4 : 0 : 1),))
sage: singular_console()
      SINGULAR
A Computer Algebra System for Polynomial Computations / Development
                                                    version 3-0-1
by: G.-M. Greuel, G. Pfister, H. Schoenemann          0<
FB Mathematik der Universitaet, D-67653 Kaiserslautern \
> ring r = 0,(x,y),dp; poly f = 9x16-18x13y2; factorize(f);
[1]:
  _[1]=-9
  _[2]=x
  _[3]=-x3+2y2
[2]:
  1,13,1
> Auf Wiedersehen.
sage: E.points()

[(0 : 1 : 0),
 (0 : 0 : 1),
 (0 : 4 : 1),
 (1 : 0 : 1),
 (1 : 4 : 1),
 (2 : 2 : 1),
 (4 : 0 : 1),
 (4 : 4 : 1)]
sage: gap_console()
GAP4, Version: 4.4.6 of 02-Sep-2005, x86_64-unknown-linux-gnu-gcc
gap> G:=SpecialUnitaryGroup(4,2); Size(G);
SU(4,2)
    
```

SAGE: Software for Algebra and Geometry Experimentation - Mozilla

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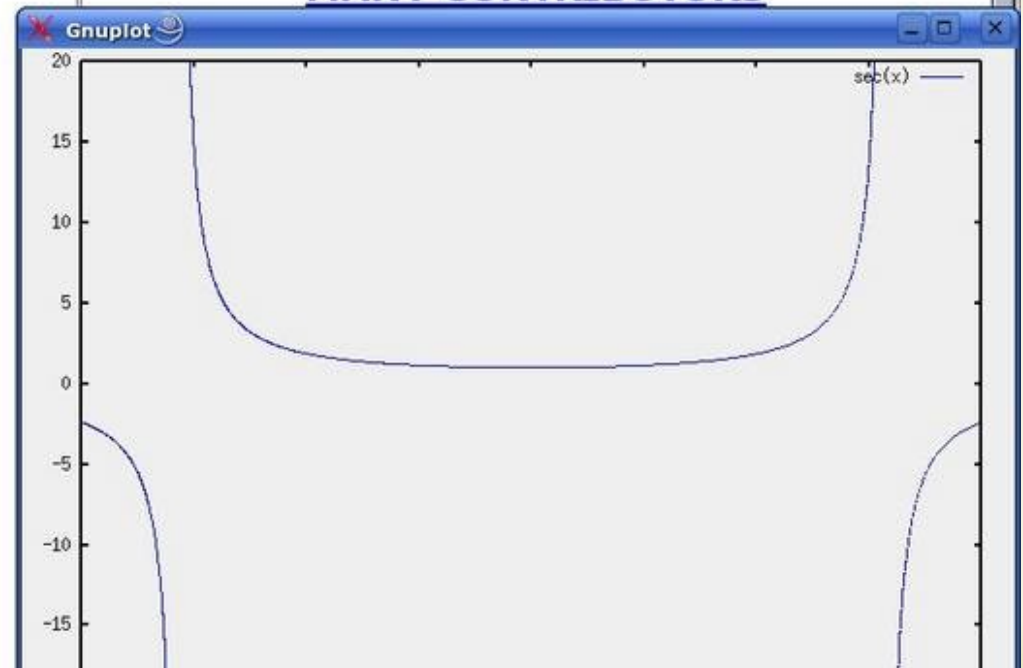
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SAGE

Software for Algebra and Geometry Experimentation

By [William Stein](#) and
MANY CONTRIBUTORS

From the SAGE Page

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Advantages of Open Source

- ~ Less Expensive
- ~ Smaller in size
- ~ Quick bug fixes
- ~ Transparency allows quick security updates

Disadvantages of Open Source

- ~ Stability
- ~ Security
- ~ Installation
- ~ Poor Interactivity – important in education
- ~ Poor integration with Microsoft
- ~ No customer service
- ~ No warranty

Software for Starving Students

A screenshot of a software window titled "Software for Starving Students". The window has a title bar with three colored buttons (red, yellow, grey) on the left. Below the title bar is a dark grey header area with the text "Software for Starving Students" in white. To the left of the header is an image of a tray with food: a green apple, a carton of milk, a plate with a globe, and some orange sticks. Below the header is a large "Welcome" text. On the left side, there is a sidebar with a "Welcome" section, a "Browse Software" section with a list of categories (Art & Graphics, Astronomy & Space, Computer Science, Games, Internet, Keyboarding, Multimedia, Office, Personal Finance, Security, Studying, Utility), and a "More Info" section. The main content area is a white rounded rectangle with a blue border, containing three sections: "About This Disc", "Why We Do This", and "Get the Latest Edition". Each section has a blue header and a paragraph of text.

Software for Starving Students

Software for Starving Students

Welcome

Welcome

Browse Software

- ⊕ Art & Graphics
- ⊕ Astronomy & Space
- ⊕ Computer Science
- ⊕ Games
- ⊕ Internet
- ⊕ Keyboarding
- ⊕ Multimedia
- ⊕ Office
- ⊕ Personal Finance
- ⊕ Security
- ⊕ Studying
- ⊕ Utility

More Info

About This Disc

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Why We Do This

We make this disc for a number of reasons, but most of them arise from the fact that we've found this software useful -- so we think others might, too. We hope that by presenting these programs in an easy-to-use interface, we'll make your experience even more pleasant.

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This edition of the Software for Starving Students disc was released in January, 2007. We release new editions regularly. Please visit <http://softwarefor.org> to check for and download the latest edition.

Thank You!

Dr. Russell Herman

Dr. Gabriel Lugo

UNC Wilmington

PDF of this talk and links:

<http://russherman.com/Talks/OpenSource.pdf>

For more information: hermanr@uncw.edu

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