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{button}

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Graphing an equation

{button}Step by step

- 1 - Click on the $f(x)$ button on the tool bar.
- 2 - Input an equation in edit box of the Graphing dialog box(no need to enter $f(x) =$ or $y =$).
- 3 - Click on the Graph button.
- 4 - Your graph will appear on the screen.

See [Input dialog box](#)



Saving to file

There are two ways of saving your file.

You can save your file as a bitmap. You can view your collection of bitmaps using this application but you cannot edit the bitmap.

You can also save your file in a special database comprising of five files. The extensions to these files begin with pc and end with a third letter: d, t, g, o and l. These files can be edited when they are reloaded into the software. These files must be found in the same directory or some data will be lost. (A one file version is on its way)

You can also create a text based file from which you can read a series of equation. (See input Dialog Box);



Reading from file

Operations

+	addition
-	subtraction
*	multiplication
/	division
^	exponent

You can also use x^2 for x^2 or x^3 for x^3 .

The $*$ operation may be omitted in the same way we normally write functions: $2x$ instead of $2*x$ or $\sin(x)\cos(x)$ instead of $\sin(x) * \cos(x)$.

When you divide, use parenthesis to define the denominator.

Functions

The functions defined in Plan cartésien 2.0 are:

Name	Usage	Abbreviation
tangent	$\tan(x)$	$t(x)$
sine	$\sin(x)$	$s(x)$
cosine	$\cos(x)$	$c(x)$
natural log	$\ln(x)$	$l(x)$
log base 10	$\log(x)$	$L(x)$

Notation

I tried to keep the notation as simple as possible in order to the syntax. In programming, we use an asterisk to symbolize a multiplication, but in the application will accept $2x$ instead of $2 * x$. This will help a student who has just started graphing equation enter equation without prior knowledge of the syntax used in programming languages. I am still surprise to see that some if not all professional software packages require that you use a symbol for a multiplication. All other functions have abbreviations that can be helpful while trying to find an equation that is suitable for your presentation: s for sin, c for cos, etc. The only symbol that a user would need to learn because they vary from a text is abs (or a) for absolute value, n for exponents and / for divisions.

But 2 (alt-8) and 3 (alt-9) are accepted but not 23 .

For a division, ensure that the denominator is delimited by parenthesis.

ex.: $1/(x+2)$

see also

[Operations](#)

[Functions](#)

[Constants](#)



Copying and pasting

You can easily copy a graph screen and then paste it to another application that accepts bitmaps. Simply click the right mouse button and choose copy from the menu. You can then go to your word processor and paste your graph.

Menus

Main menu

File

New: create new graphing screen
Open: open bitmap file or Plan cartésien object files
Save: save bitmap file or Plan cartésien object files
Save as: change file name
Print: print graphing screen
Printer setup: setup printer

Functions

f(x): Input dialog box

Edit

Copy: copy graphing screen to clipboard
Paste: paste bitmap from clipboard (viewing only)
Clear: clear graphing screen and all objects from memory
Font: change font style, size and colour

Help

Contents: Plan cartésien help file
About: about dialog box

Right click menu

Cut: clear graphing screen and all objects from memory
Copy: copy graphing screen to clipboard
Paste: paste bitmap from clipboard (viewing only)
f(x): Input dialog box
Edit: edit graphing screen objects

Tool Bars

The tool bars offer shortcuts to menu functions. Click on buttons for descriptions

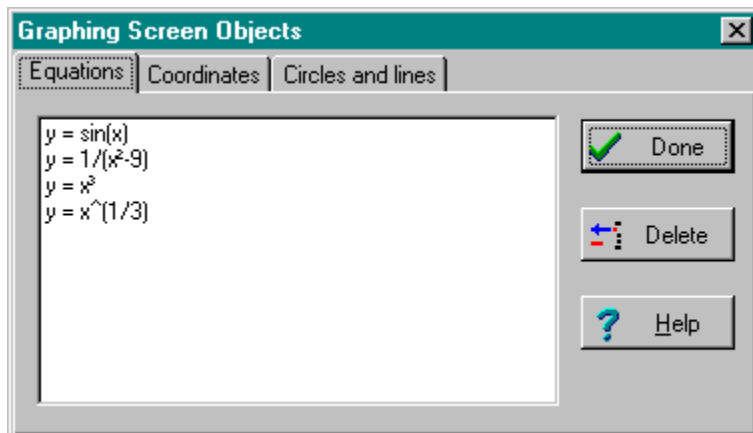


Resizing

 **Configure**

Editing objects

Use this dialog box to eliminate objects on the graphing screen. All you need to do is double click on the object you wish to remove or select and then click on the delete button.





Drawing tools

Use these tools to draw a circle, an ellipse or a line.

Save file

Open file

Print screen

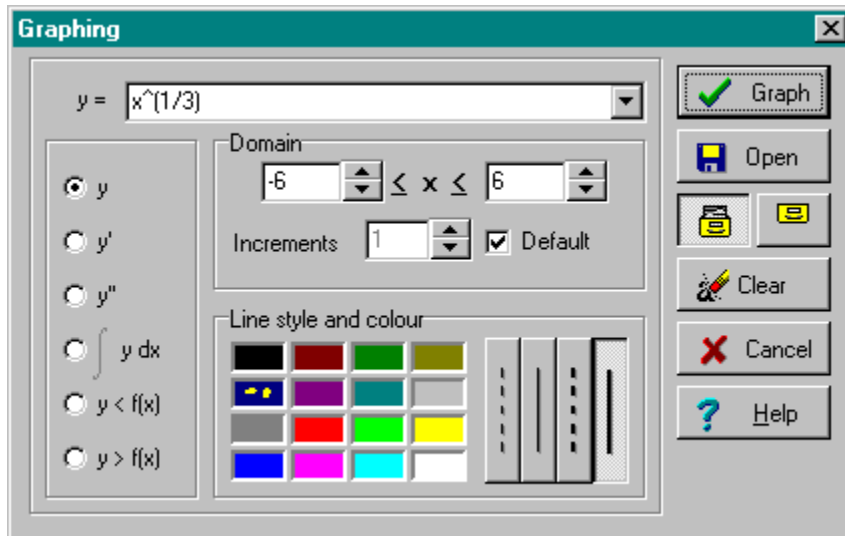
Clear graphing screen and all objects from memory.

Resize graphing screen

Redraw graphing screen

Input dialog box



Click on feature for an explanation



Evaluate dialog box

The evaluate dialog box enables the user to evaluate the function for a specific value. All the coordinates calculated to graph the equation are found in the list box.

Pen tool

The pen tool is used to modify the colour and line style of the drawing pen when you select  or  from the tool bar.



Select font

Print graphing screen

Grid screen is used for background.

Plain screen

Zoom in

Zoom out

For drawing circles or ellipses on graphing screen. While dragging cursor you will see the bounding rectangle and the center of circle or ellipse.

For drawing a line on graphing screen.

Move center

Move origin

Place coordinates

Drop down combo box contains all functions drawn up to date. This list of functions can be cleared is you click on the clear button.

Set domain

Add new equation to drop down list box.

Do not add new function to drop down list box.

Read a series of equations from a text file. These equations are placed in the drop down list box. All previous entries are cleared.

Clear drop down list box.

Choose colour and line style used to graph function.

Graph first derivative of function.

Graph second derivative of function.

Graph area of integration.

Constants

p for π = 3.1415926535897932385
e = 2.718281828459

Reading equations from a text file.

- 1 - Open the input dialog box.
- 2 - Click on the **Open** button.
- 3 - Choose file to read from.

The equations will be inserted to the drop down combo box.

See - [Writing equations to a text file.](#)

Writing equations to a text file

- 1 - Open notepad or any other text editor.
- 2 - Type equations, one per line.
- 3 - Save equation with the .equ extension.

Equations can now be read from the input dialog box.

See - [Reading equations from a text file](#)

Saving a file.

- 1 - Select **File|Save**.
- 2 - Choose file type
 - i .bmp for bitmap
 - ii .pcd for objects.
- 3 - Enter file name.
- 4 - Click **Save**.

Your file is now saved.

Quick tips

[Writing equations to a text file](#)

[Reading equations from a text file](#)

[Copying and pasting graphing screen to a word processor](#)

[Saving a file](#)

[Opening a file](#)

[Area between curves](#)

[Removing objects](#)

Copying and pasting graphing screen to a word processor.

- 1 - Select **Edit|Copy**.
- 2 - Got to your word processor and paste

Your graph is now inserted as a bitmap into your document.

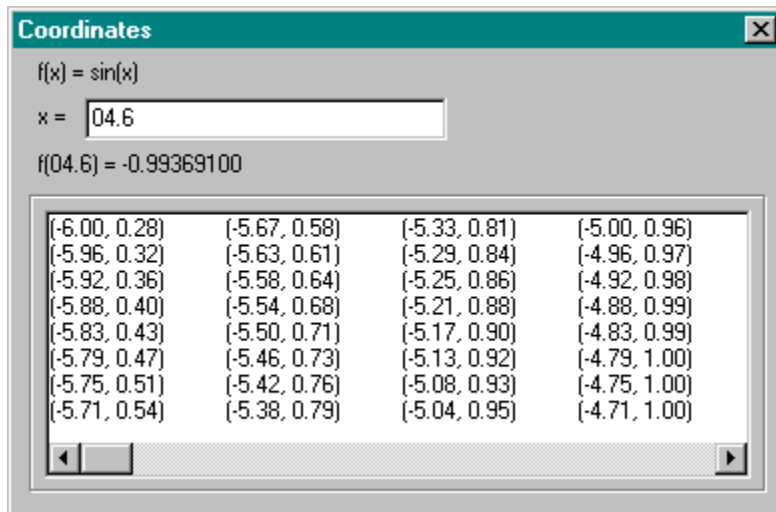
Opening a file.

- 1 - Select **File|Open**.
- 2 - Choose file type
 - i .bmp for bitmap
 - ii .pcd for objects.
- 3 - Select file from list.
- 4 - Click **Open**.

The graphing screen will display your file.

Table of values

The coordinates dialogue box shows the name of the last equation that was graphed. You can evaluate this function for any given value. The list box shows all the values that were used to graph the equation.






About ...



Area between curves

- 1 - Select **Functions**| $f(x) = y$.
- 2 - Select area of integration radio button.
- 3 - Graph first function.
- 4 - Graph second function.

Removing objects from graphing screen

- 1 - Click on  button
- 2 - Select appropriate tab.
- 3 - Select object to remove.
- 4 - Click the delete button.



Fonts

To modify your text font select **Edit|Font** from the menu. From the dialog box you may modify a font's style, colour and size. The colour you choose will not affect the text output of an equation since it will always match the colour of its graph.

File types

Bitmap files

Object files

Text files

Bitmap files

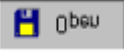
You can save your graphing screen as a bitmap file by selecting the **File|Save** or **File|Save as** items from the menu. From the **Save** dialog box, choose **Bitmap** from the **Save as type** combo box and then type the file name in the **File name** edit box. Bitmap files have the **.bmp** extension.

Object files

You can save your graphing screen as an object file by selecting the **File|Save** or **File|Save as** items from the menu. From the **Save** dialog box, choose **Plan cartésien** from the **Save as type** combo box and then type the file name in the **File name** edit box. Object files are a collection of five files. The extensions are **.pcd** for the main file and **.pcc**, **.pcg**, **.pcs** and **.pct** for the secondary files.

Text files

Text files are files that contain a series of equations, one per line, and can be created using any DOS or Windows text editor. These files carry the .equ extension and can be read directly from the **Graphing**

dialog box by clicking the  button. Once a file is selected, the equations are read and placed into the **f(x)** drop down list box.

