

\*\*\*\*\*Prtnmb Docs\*\*\*\*\*  
\*\*\*\*\*Version 2.0\*\*\*\*\*  
\*\*\*\*\*Shareware\*\*\*\*\*

This are the basic docs for Prtnmb. Prtnmb is a basic maths programs, it allows to integrate, derivate, find the zeros of functions, solve simple equations, print tables, plot graphs, make rotations solids.

This progam was writen to help me in some calculations and to test my abylities as a programer. There is a first version of this program in circulation but have a worst organisation than this one. To better use this program is convinient to connect the Psion to a printer because I have designed the program to send the calculations results to a printer. One lack that I found in the calculator is that I cannot print the calculations that I make. Whith this progam I can print almost all the evaluations that I made (exept when that evaluation is plotting something).

#### The progam

The first dialog asks to input a function. Its's easy to understand but sometimes there are problems, I cannot make that the progams understand some functions using Log(...), if someone notice this I can say that unfortunatly is a problem that I didn't solved yet. For the functions the variable should be "x" (example:  $\sin(x)$ ,  $x^{**2}-x$ ). The functions are writen in the first dialog then all the work are done whit menus.

#### The menus

In the calc. menu two options are found Integ. and Deriv. this do the integration and derivation of the function. Integration can take a while to do the calculations so a few seconds waiting (or a few minutes) is normal. In the integrate menu there is one enty called Distance bettewn evaluations this is the distance that the program uses to take samples of the function to do the calculations, one smaller number can give more acurate results but this can originate overflows and long calculations. Usualy  $10e-2$  are a good value. For derivate the sample distance are included in the program so don't mind, I have choosed carefully this value and in my tests the acuracy is  $10e-3$  or better, so for fast evaluations this is enouth. In the equation menu there are two options the NewtonZero and the Eq.solver. The NewtonZero finds the zero of a function using the Newton method (if never heard of this thing that I consider usefull try to study a little) the dialog ask for two values "start at point" and "stop at iteration", the first value is the value that the program uses to gess the zero, if that value cannot be considered as a zero (the program

consider that a number is a zero if the distance between the number and zero is smaller than  $1e-8$  that is a good approximation) the

program start to make calculations until it finds one zero so, "stop at iteration" is a security mesuare to prevent that the machine enter in one infinite cicle of calculations. The equation solver works by same way of NewtonZero the only thing to say is that equation must be defined in the dialog like for example  $x^2-x=2$  this can be considered as trying to find a zero for the function  $x^2-x-2$ .

On the menu print there are only one entry, Table, this allow to print tables of values of functions, example: a table for  $\sin(x)$  from 1 to 2 by a step of 0.001. For plotting a function I included my program "plot function 2.0" (called from the menu) the values entered are the graphical ranges and if the function values are in the graphical ranges then it will be displayed the same is valid for 3dSolid. In 3dSolid the minimum and maximum value of  $x$  must be entered, the program only rotate that part of the function, alfa and beta are the rotation angles (Z-Y and Z-X). And I think that this is all to know about the menus.

**\*\*Note\*\*\*\*\***

I'm always finding somomething to add to my programs but it is dificult for me to make programs and finding that I'm the only one that use it, so I'm going to start to distribute my programs. This one is Shareware because I spent lots of time studying all the functions, debugging, writing this docs and I need some money to make some resresearch work on programing and mathematics.

I ask to all the people that may read this docs that if possible put this program on ftp sites or any BBS that have any Psion files. If anyone connected to Psion read this I am interested in seeing a program like this one in the operating system (this one or one upgrade, I'm open to negotiate).

**\*\*Shareware\*\*\*\*\***

My adress is in the program and you can sent to it £2.5 pounds, I can also provide parts of the program like the "plot function 2.0", the routine to find zeros, and the routine for integrate and derivate but in that case I expect somomething more, and thats up to you, remmember that if you dont have E-mail adress sending a disk from Portugal will cost more or less half a pound.

(Z-Y and Z-X), 2  
3dSolid, 2  
BBS, 2  
calc. menu, 1  
connect the Psion to a printer, 1  
Deriv., 1  
derivate, 1  
derivation, 1

Distance bettewn evaluations, 1

Eq.solver, 1  
equation menu, 1  
equation solver, 2  
ftp sites, 2  
graphical ranges, 2  
Integ., 1  
integrate menu, 1  
integration, 1  
Log(...), 1  
menu print, 2  
Newton method, 1  
NewtonZero, 1  
ploting a function, 2  
print tables of values, 2  
rotate, 2  
start at point, 1  
stop at iteration, 1  
Table, 2  
The menus, 1  
variable, 1  
zero of a function, 1