

Import lines from spreadsheets

ThanCad can import lines whose coordinates are stored in a spreadsheet ([1]). A spreadsheet contains one or more sheets and each sheet is a table which contains cells arranged in rows and columns.

ThanCad only looks at the first sheet of the spreadsheet, and only at the first 3 columns. ThanCad ignores all other columns and all other sheets, so it is safe to write anything in these places.

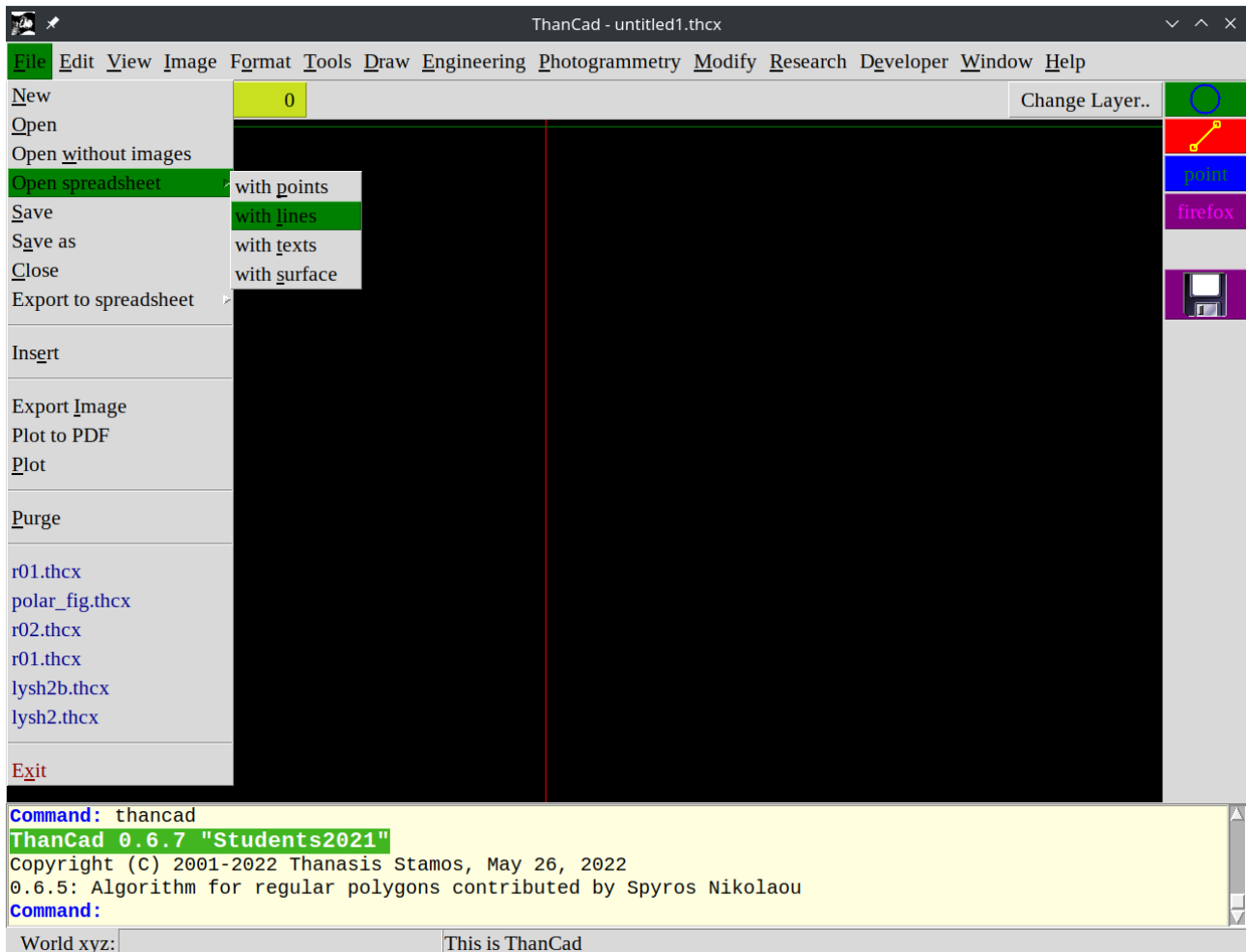
The 3 first columns of the first sheet must contain the x, y, and z coordinates of the lines, respectively. If the lines do not have z coordinates, the third column must be blank. The coordinates are assumed to be non-relative cartesian coordinates.

Many different lines may be defined in a spreadsheet, by separating them with one or more blank rows.

Currently only .xls and .xlsx files are supported, and support of .ods is planned for the near future. The use of LibreOffice-Calc ([2]) spreadsheet is strongly recommended for the creation of .xls/.xlsm files. A very light alternative is gnumeric ([3]).

In order to open a spreadsheet with lines use then "openspreadlines" command, or the use the menu of ThanCad:

Menu: File → Open spreadsheet → with lines



Example 1

Draw a rectangular floor plan of dimensions 10.00×8.00 m. The coordinates of the southwest point of the rectangle are 20.00,50.00
Also draw the diagonals of the rectangle.

Solution with spreadsheet

At first we calculate the cartesian coordinates of all points of the rectangle:



Then we type the coordinates of the rectangle in the first 2 columns of the first sheet of a spreadsheet.

20 50
30 50
30 58
20 58
20 50

Then, we leave 1 blank row and type the coordinates of the primary diagonal:

20 58
30 50

finally we leave 1 blank row and type the coordinates of the secondary diagonal:

20 50
30 58

Save the spreadsheet as rect1.xls and open it with ThanCad.

See appendix 1 for screenshots of this procedure.

Example 2

Draw a sine and a cosine curve for angles 0°-360° with step 10°. Multiply the sine and cosine values by 100 to make the drawing more balanced.

Solution with spreadsheet

a. On the fourth column of the spreadsheet we write the angles, using the computations of the spreadsheet:

cell D1 → =0
cell D2 → =D1+10

Then copy cell D2 to cells D3 to D37

b. On the first and second column compute the x,y coordinates of the sine:

cell A1 → =D1
cell B1 → =100*sin(A1*pi()/180)

Then copy cells A1:B1 to cells A2:B2 to A37:B37

c. Leave on blank row and compute the x,y coordinates of the cosine:

cell A39 → =D1
cell B39 → =100*cos(A39*pi()/180)

Then copy cells A39:B39 to cells A40:B40 to A66:B66

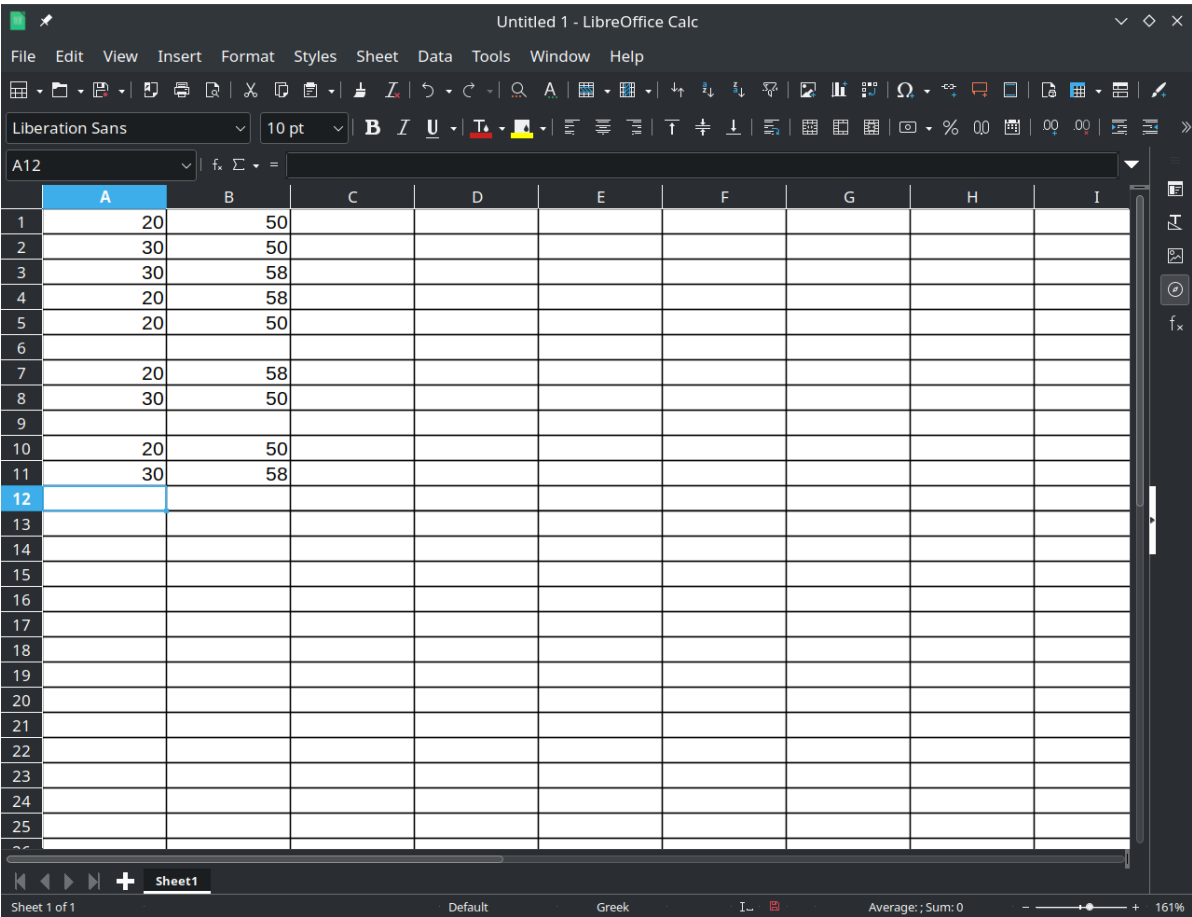
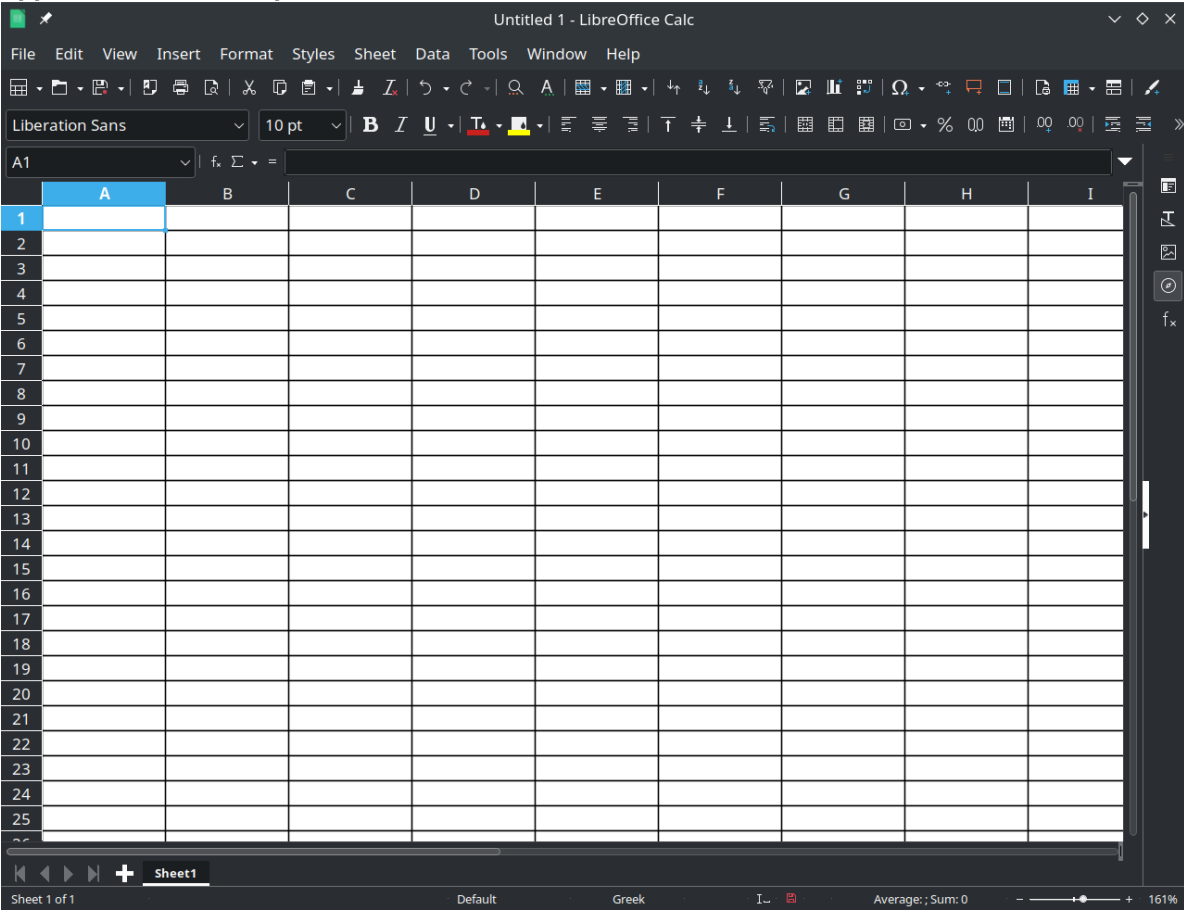
Save the spreadsheet as sincos1.xls and open it with ThanCad.

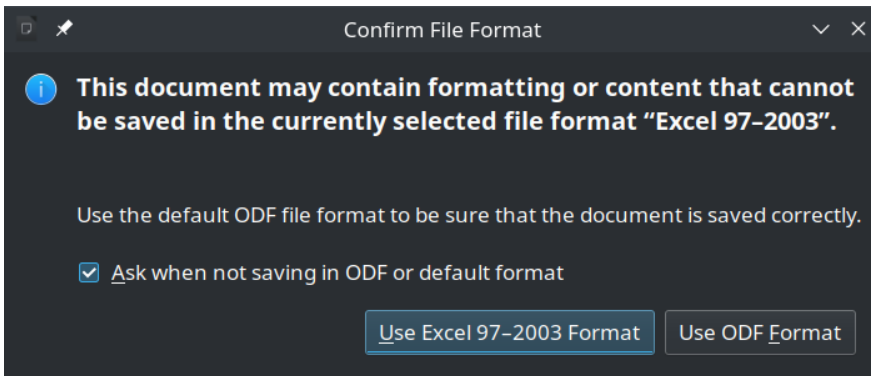
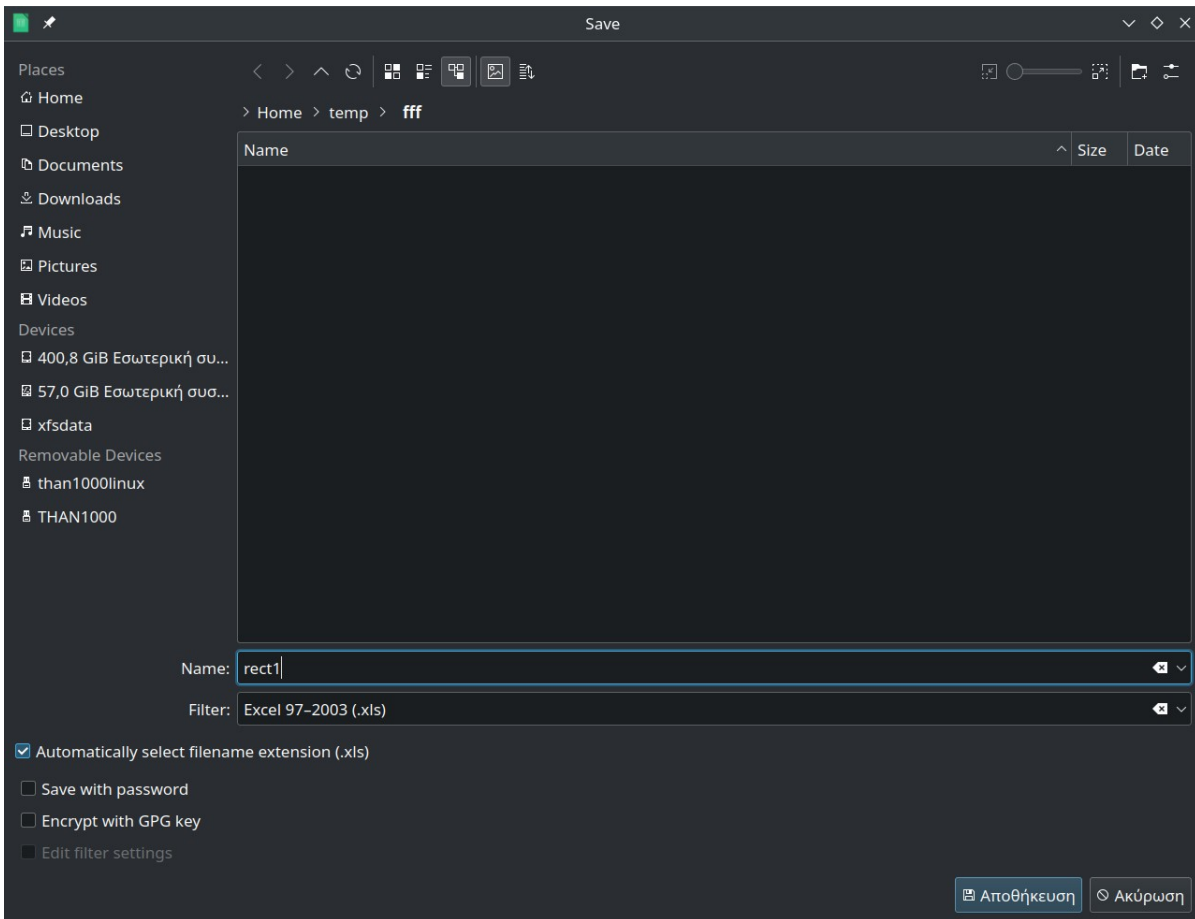
See appendix 2 for screenshots of this procedure.

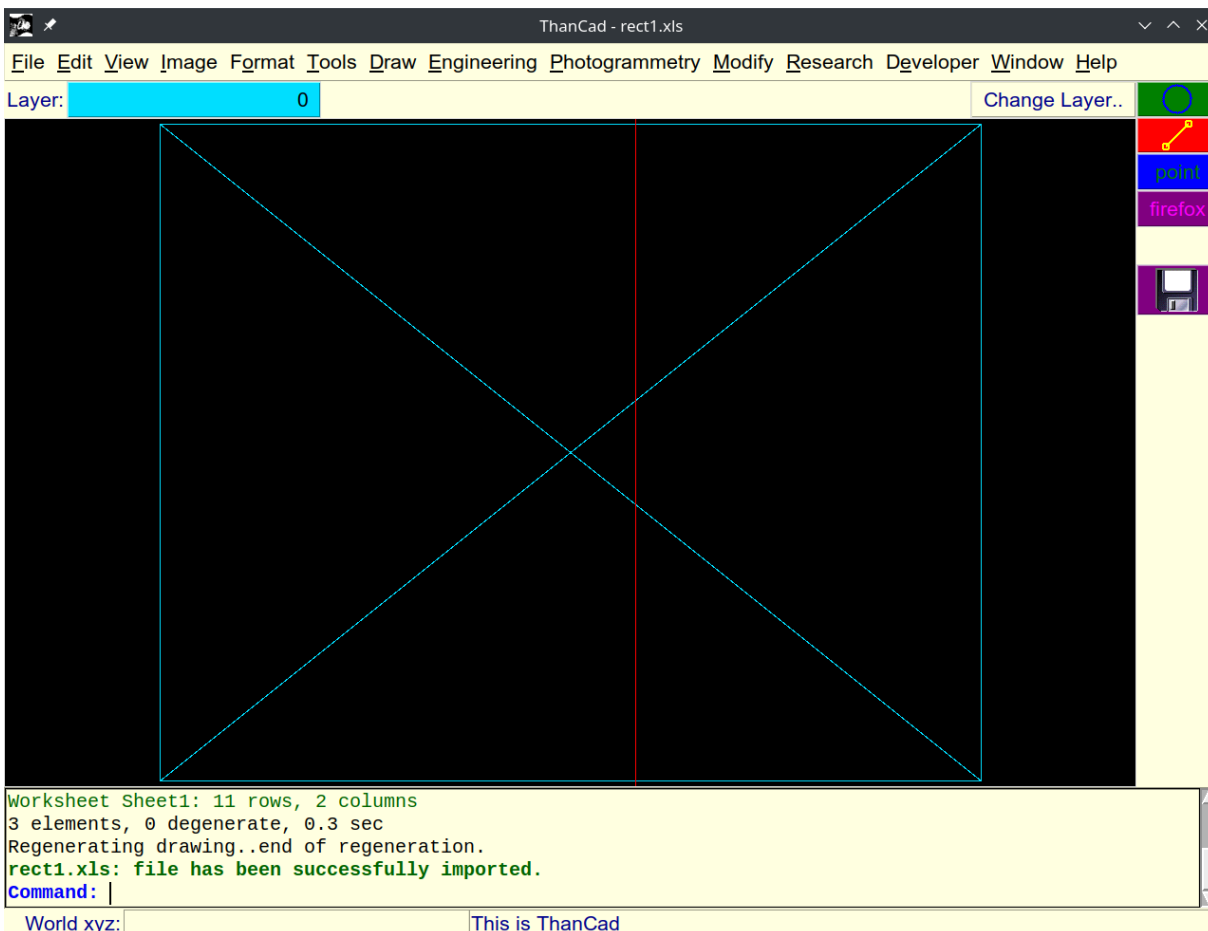
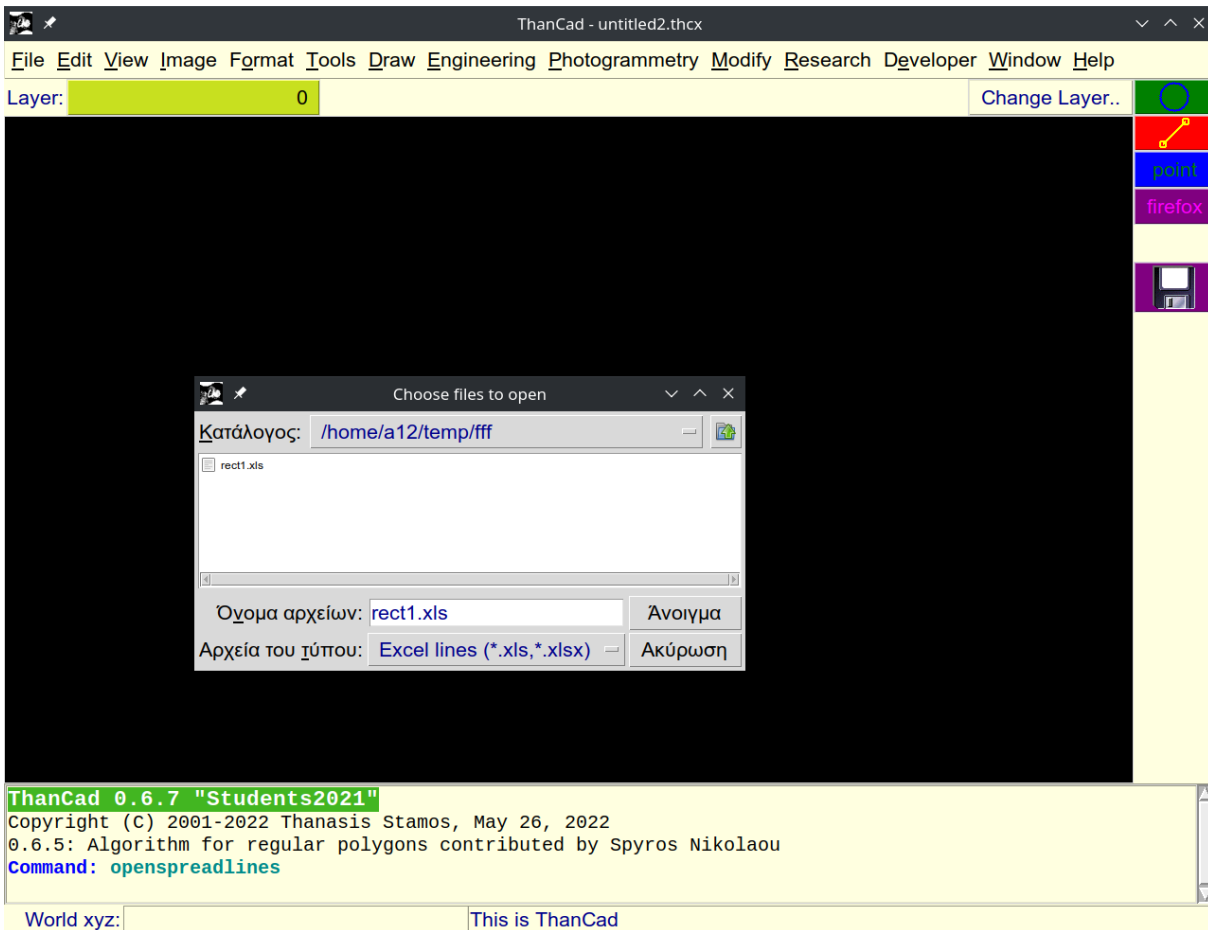
Bibliography

- [1] <https://en.wikipedia.org/wiki/Spreadsheet>
- [2] <https://www.libreoffice.org/download/download-libreoffice/>
- [3] <http://www.gnumeric.org/>

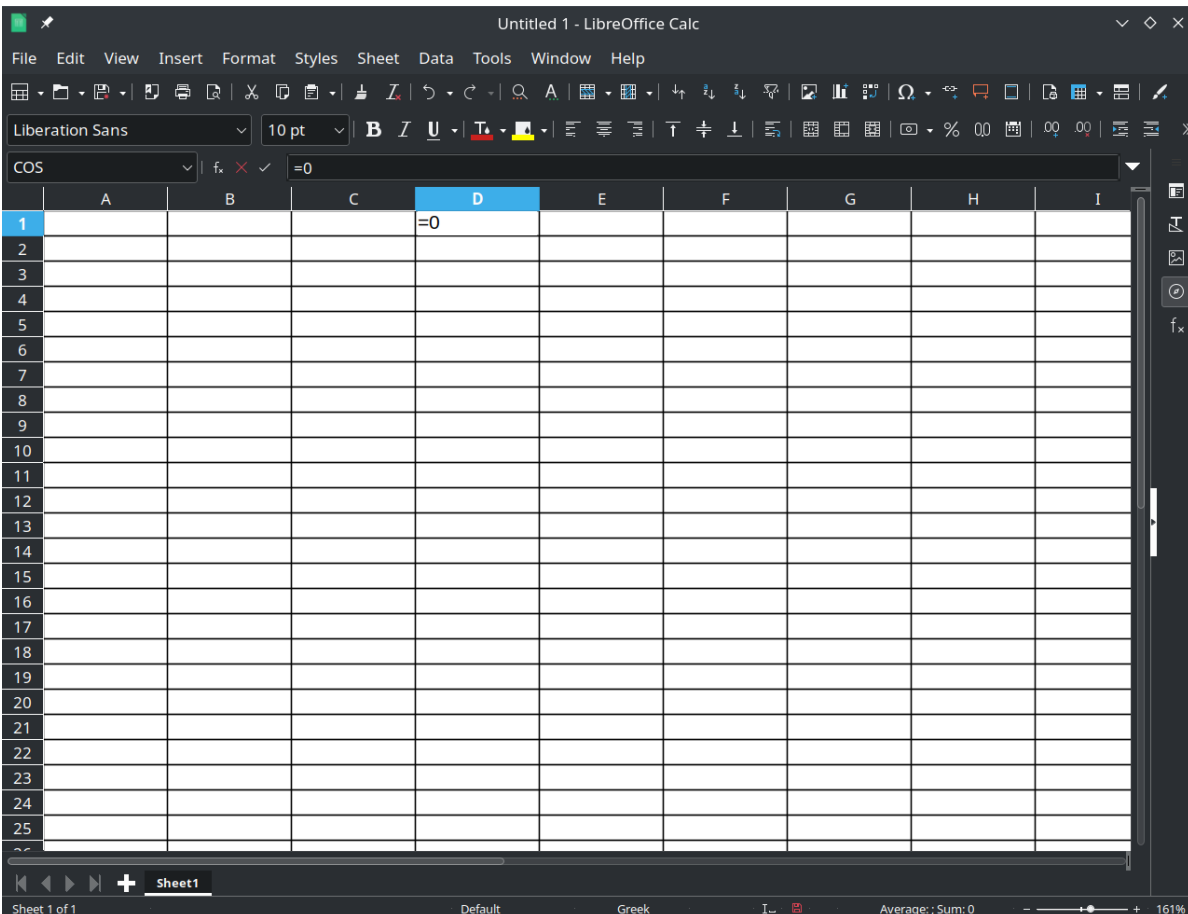
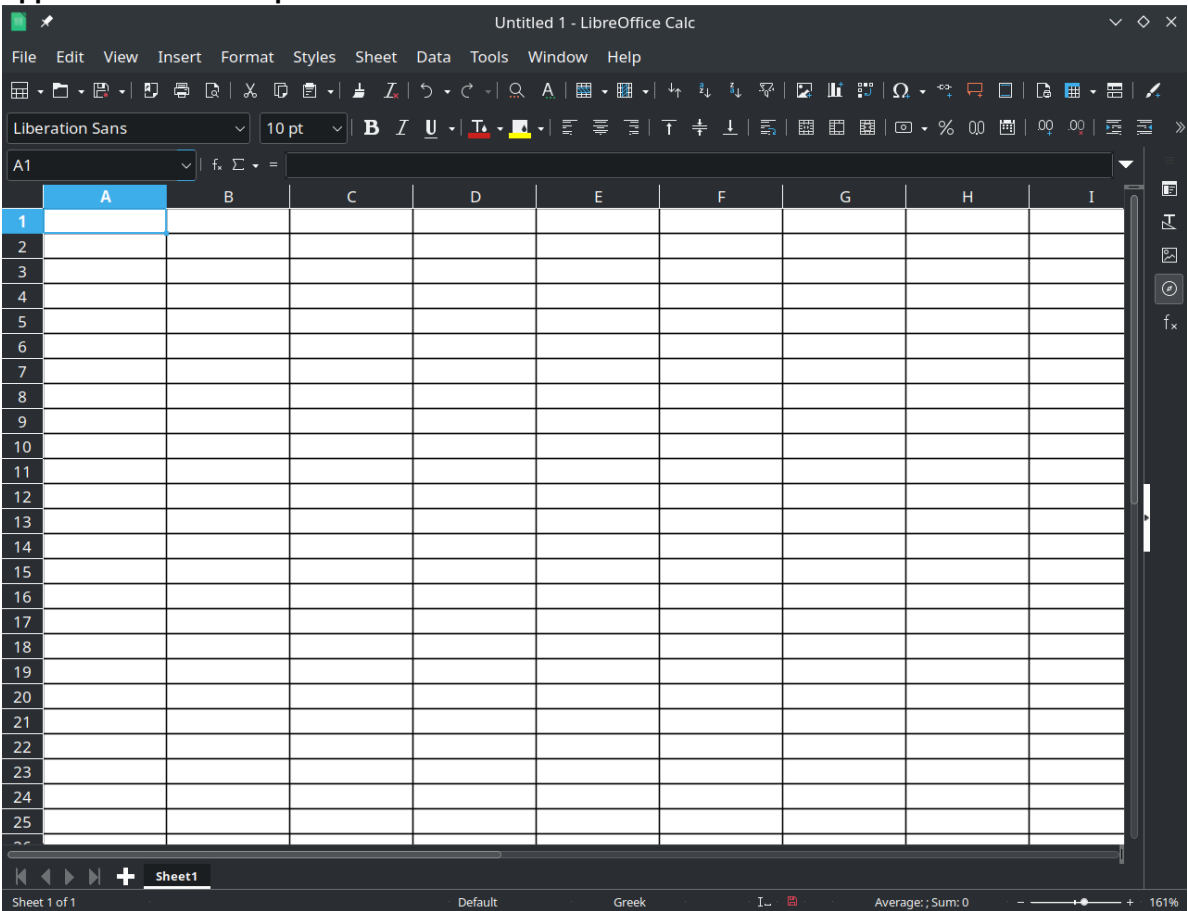
Appendix 1 - Example 1

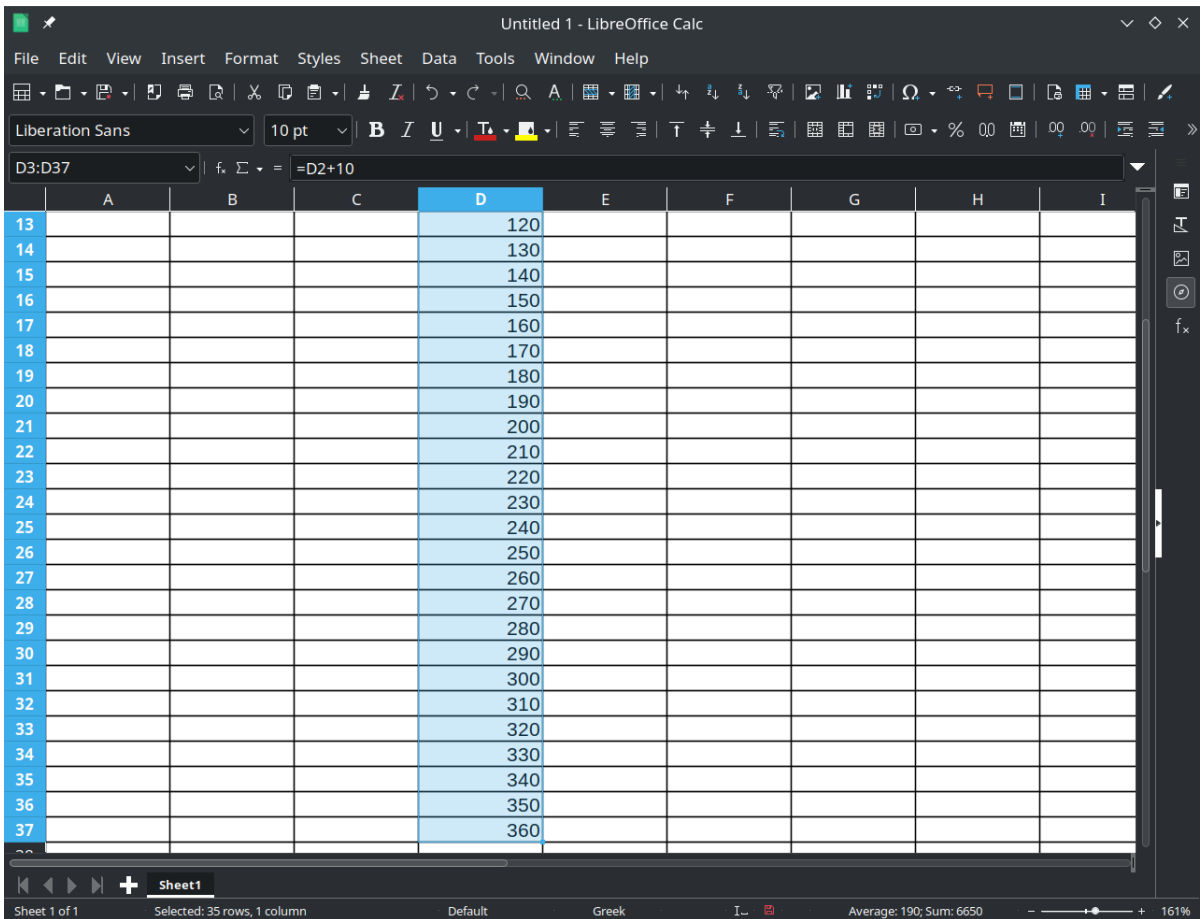
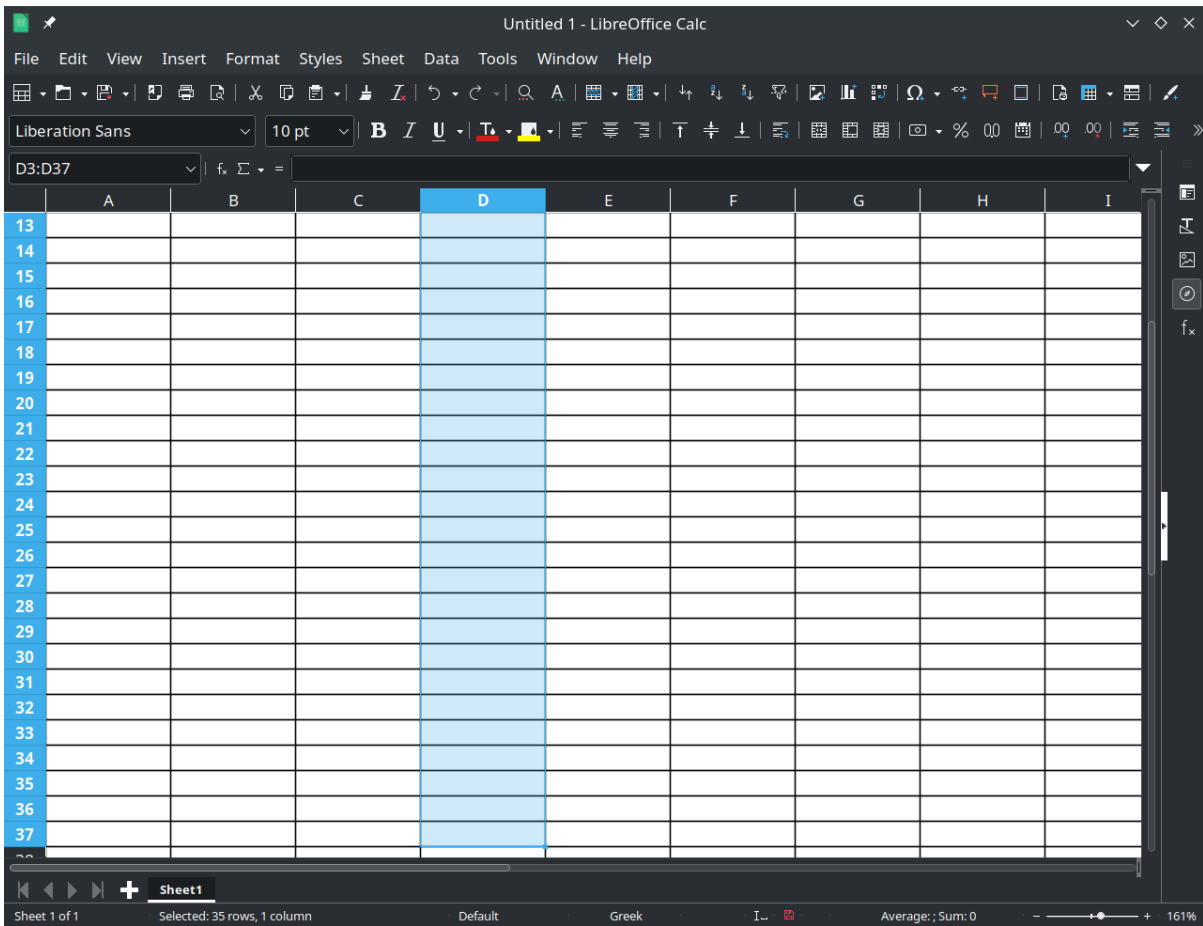


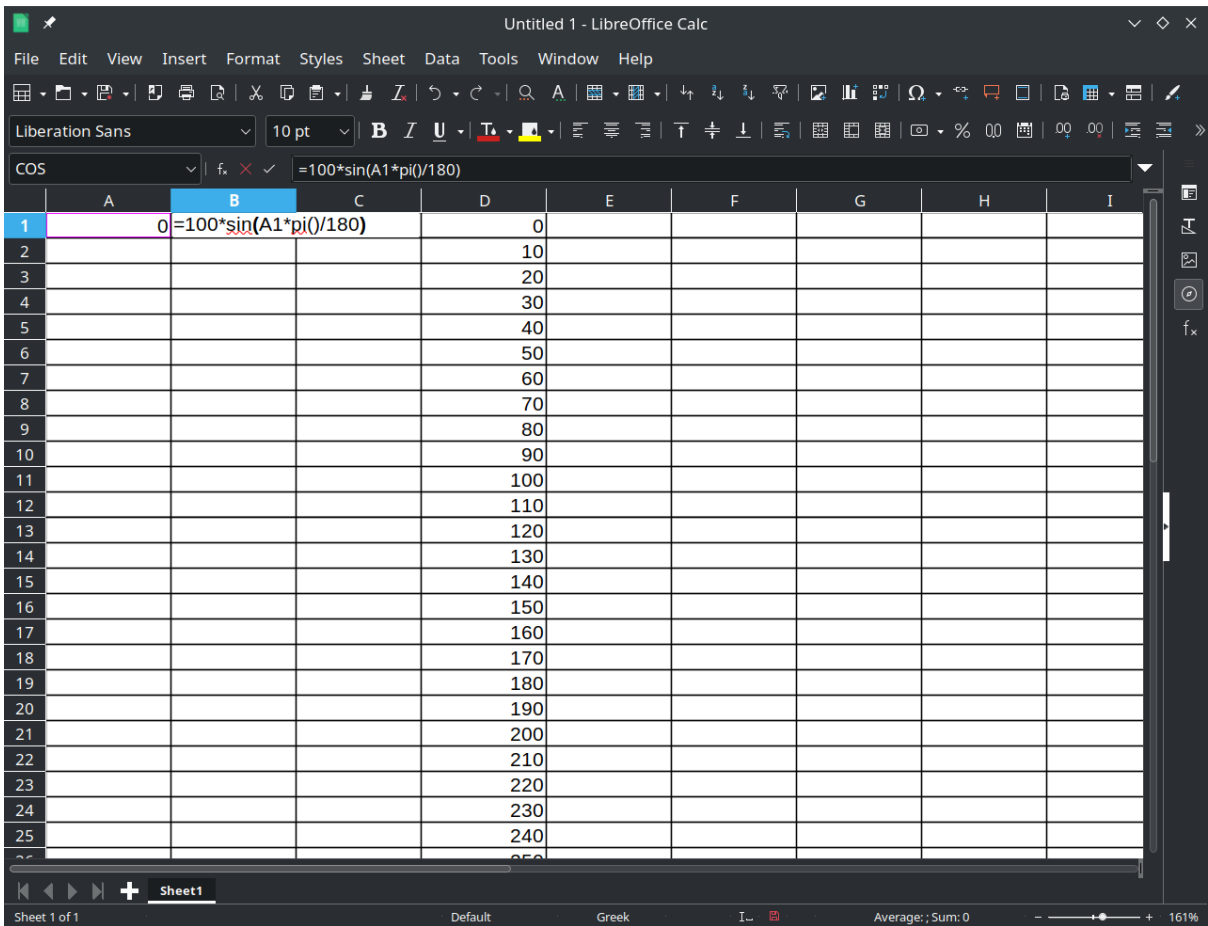
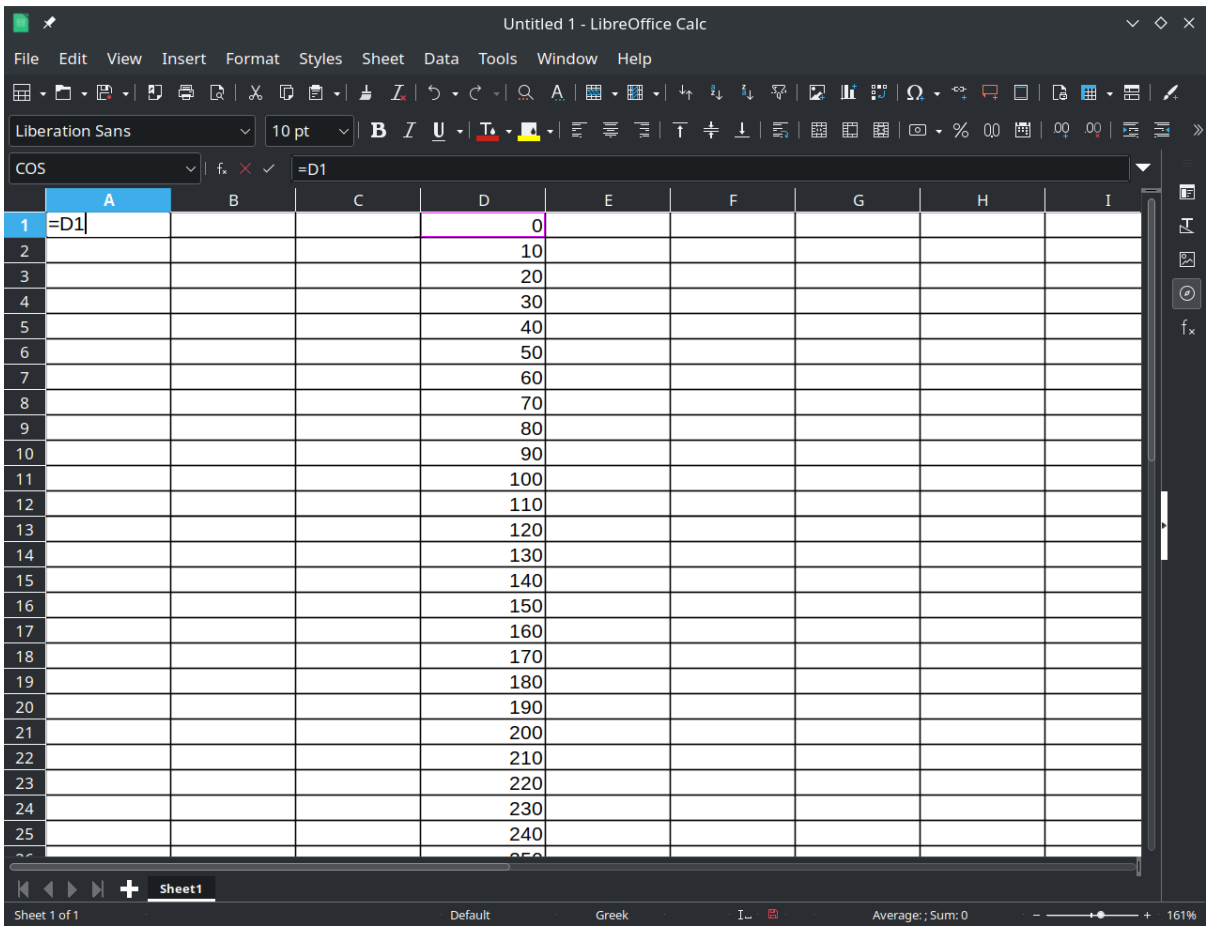




Appendix 2 - Example 2







Untitled 1 - LibreOffice Calc

File Edit View Insert Format Styles Sheet Data Tools Window Help

Liberation Sans 10 pt

A1:B1

	A	B	C	D	E	F	G	H	I
1	0	0		0					
2				10					
3				20					
4				30					
5				40					
6				50					
7				60					
8				70					
9				80					
10				90					
11				100					
12				110					
13				120					
14				130					
15				140					
16				150					
17				160					
18				170					
19				180					
20				190					
21				200					
22				210					
23				220					
24				230					
25				240					
26				250					

Sheet1

Sheet 1 of 1 Selected: 1 row, 2 columns Default Greek Average: 0; Sum: 0 161%

Untitled 1 - LibreOffice Calc

File Edit View Insert Format Styles Sheet Data Tools Window Help

Liberation Sans 10 pt

A2:B37

	A	B	C	D	E	F	G	H	I
17				160					
18				170					
19				180					
20				190					
21				200					
22				210					
23				220					
24				230					
25				240					
26				250					
27				260					
28				270					
29				280					
30				290					
31				300					
32				310					
33				320					
34				330					
35				340					
36				350					
37				360					
38									
39									
40									
41									

Sheet1

Sheet 1 of 1 Selected: 36 rows, 2 columns Default Greek Average: ; Sum: 0 161%

Untitled 1 - LibreOffice Calc

File Edit View Insert Format Styles Sheet Data Tools Window Help

Liberation Sans 10 pt B I U T A

A2:B37 f_x =D2

	A	B	C	D	E	F	G	H	I
17	160	34,20201433		160					
18	170	17,36481777		170					
19	180	1,22465E-14		180					
20	190	-17,3648178		190					
21	200	-34,2020143		200					
22	210	-50		210					
23	220	-64,278761		220					
24	230	-76,6044443		230					
25	240	-86,6025404		240					
26	250	-93,9692621		250					
27	260	-98,4807753		260					
28	270	-100		270					
29	280	-98,4807753		280					
30	290	-93,9692621		290					
31	300	-86,6025404		300					
32	310	-76,6044443		310					
33	320	-64,278761		320					
34	330	-50		330					
35	340	-34,2020143		340					
36	350	-17,3648178		350					
37	360	-2,4493E-14		360					
38									
39									
40									
41									

Sheet1

Sheet 1 of 1 Selected: 36 rows, 2 columns Default Greek Average: 92,5; Sum: 6660 161%

Untitled 1 - LibreOffice Calc

File Edit View Insert Format Styles Sheet Data Tools Window Help

Liberation Sans 10 pt B I U T A

SIN f_x x ✓ =D1

	A	B	C	D	E	F	G	H	I
17	160	34,20201433		160					
18	170	17,36481777		170					
19	180	1,22465E-14		180					
20	190	-17,3648178		190					
21	200	-34,2020143		200					
22	210	-50		210					
23	220	-64,278761		220					
24	230	-76,6044443		230					
25	240	-86,6025404		240					
26	250	-93,9692621		250					
27	260	-98,4807753		260					
28	270	-100		270					
29	280	-98,4807753		280					
30	290	-93,9692621		290					
31	300	-86,6025404		300					
32	310	-76,6044443		310					
33	320	-64,278761		320					
34	330	-50		330					
35	340	-34,2020143		340					
36	350	-17,3648178		350					
37	360	-2,4493E-14		360					
38									
39	=D1								
40									
41									

Sheet1

Sheet 1 of 1 Default Greek Average: ; Sum: 0 161%

Untitled 1 - LibreOffice Calc

File Edit View Insert Format Styles Sheet Data Tools Window Help

Liberation Sans 10 pt

SIN =100*cos(A39*pi()/180)

	A	B	C	D	E	F	G	H	I
17	160	34,20201433		160					
18	170	17,36481777		170					
19	180	1,22465E-14		180					
20	190	-17,3648178		190					
21	200	-34,2020143		200					
22	210	-50		210					
23	220	-64,278761		220					
24	230	-76,6044443		230					
25	240	-86,6025404		240					
26	250	-93,9692621		250					
27	260	-98,4807753		260					
28	270	-100		270					
29	280	-98,4807753		280					
30	290	-93,9692621		290					
31	300	-86,6025404		300					
32	310	-76,6044443		310					
33	320	-64,278761		320					
34	330	-50		330					
35	340	-34,2020143		340					
36	350	-17,3648178		350					
37	360	-2,4493E-14		360					
38									
39		=100*cos(A39*pi()/180)							
40									
41									

Sheet1

Sheet 1 of 1 Default Greek Average: Sum: 0 161%

Untitled 1 - LibreOffice Calc

File Edit View Insert Format Styles Sheet Data Tools Window Help

Liberation Sans 10 pt

A39:B39 =D1

	A	B	C	D	E	F	G	H	I
17	160	34,20201433		160					
18	170	17,36481777		170					
19	180	1,22465E-14		180					
20	190	-17,3648178		190					
21	200	-34,2020143		200					
22	210	-50		210					
23	220	-64,278761		220					
24	230	-76,6044443		230					
25	240	-86,6025404		240					
26	250	-93,9692621		250					
27	260	-98,4807753		260					
28	270	-100		270					
29	280	-98,4807753		280					
30	290	-93,9692621		290					
31	300	-86,6025404		300					
32	310	-76,6044443		310					
33	320	-64,278761		320					
34	330	-50		330					
35	340	-34,2020143		340					
36	350	-17,3648178		350					
37	360	-2,4493E-14		360					
38									
39	0	100							
40									
41									

Sheet1

Sheet 1 of 1 Selected: 1 row, 2 columns Default Greek Average: 50; Sum: 100 161%

