

# Technical writing

Klaudia Bielawa

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# 1 Introduction

How to create a PDF with mathematical equations in LibreOffice Writer

LibreOffice Writer is a fully featured, open sourced, cross-platform text editor, part of the LibreOffice productivity suite. It allows to create and edit text as well as insert graphics and other objects. Created files can be exported as a ODF, HTML, XML, PDF, and couple versions of Microsoft Word files.

This guide shows how to use Formula tool in LibreOffice and how to export created document as a PDF file. A Callan-Symanzik equation is used as an example, as its complexity allows to show different capabilities of Writer's Formula tool. Below steps explain how to open a new blank file, add a specific Formula field that allows for creating complex mathematical formulas and how to navigate said tool. This task is divided into smaller subtasks pointed out below.

## 2 Section 1

1. Opening Writer and creating new blank document:

- Navigate to LibreOffice icon on your desktop
- Double-click left mouse button
- Select Writer Document

alternatively if Writer is already opened:

- From the main toolbar select File
- Select New
- Select Text Document

Outcome: A new blank Writer Document opens in the main view.

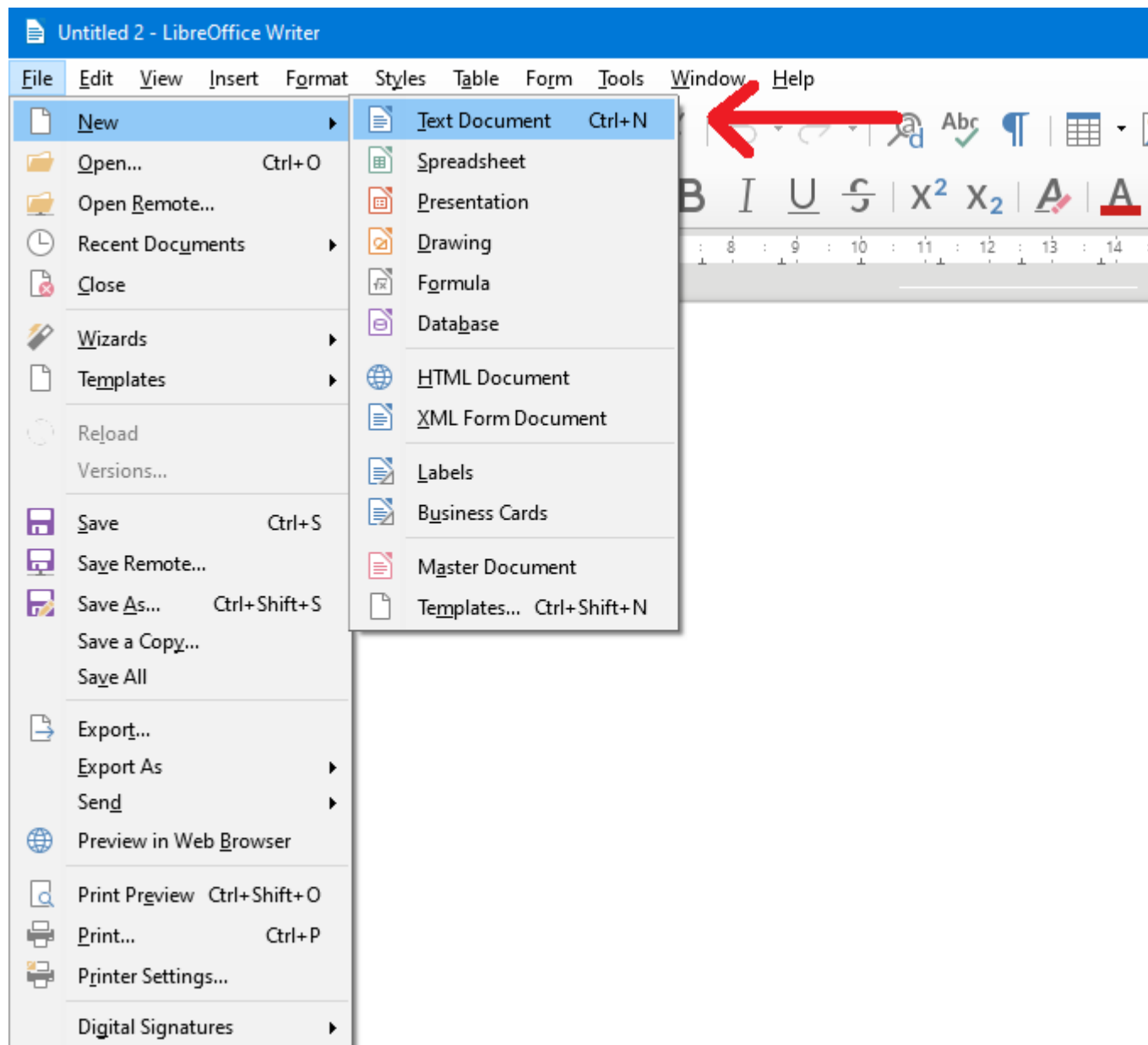


Figure 1. Opening Writer and creating new blank text document

### 3 Section 2

2. Adding a Formula field:

- From the main toolbar select Insert
- From the sub-menu select Object
- Select Formula...

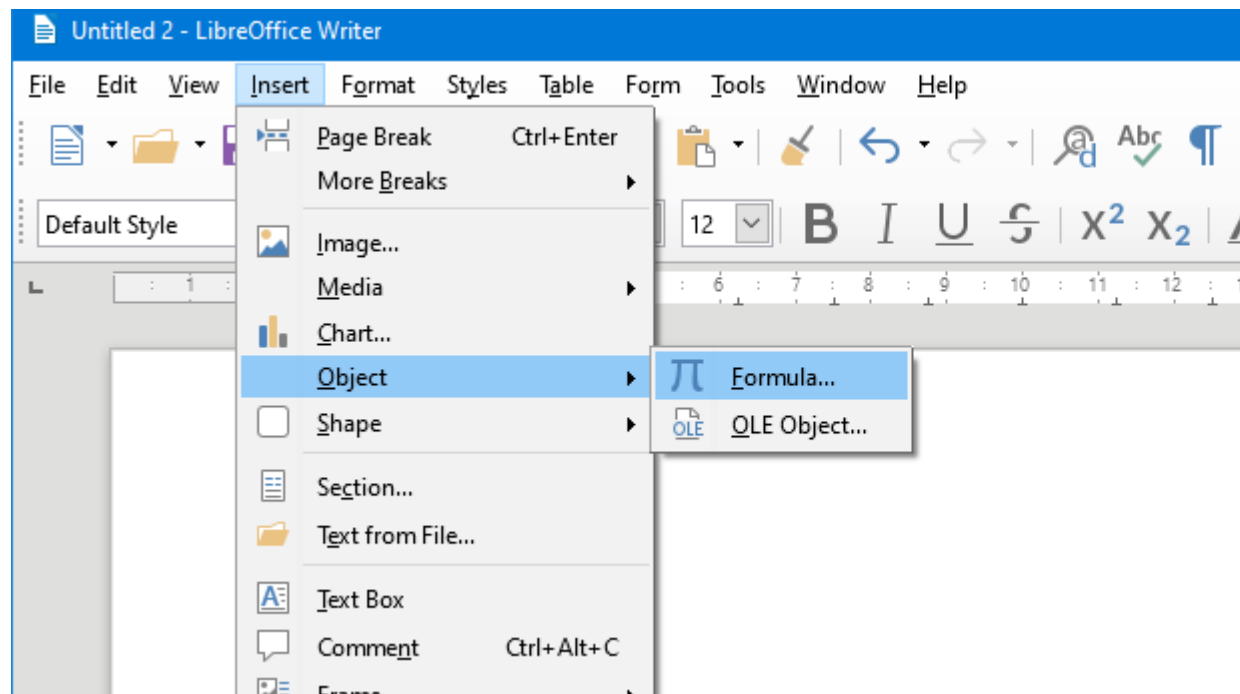


Figure 2. Adding a Formula field

Outcome: A Formula tool will open in the main view (Fig. 3).

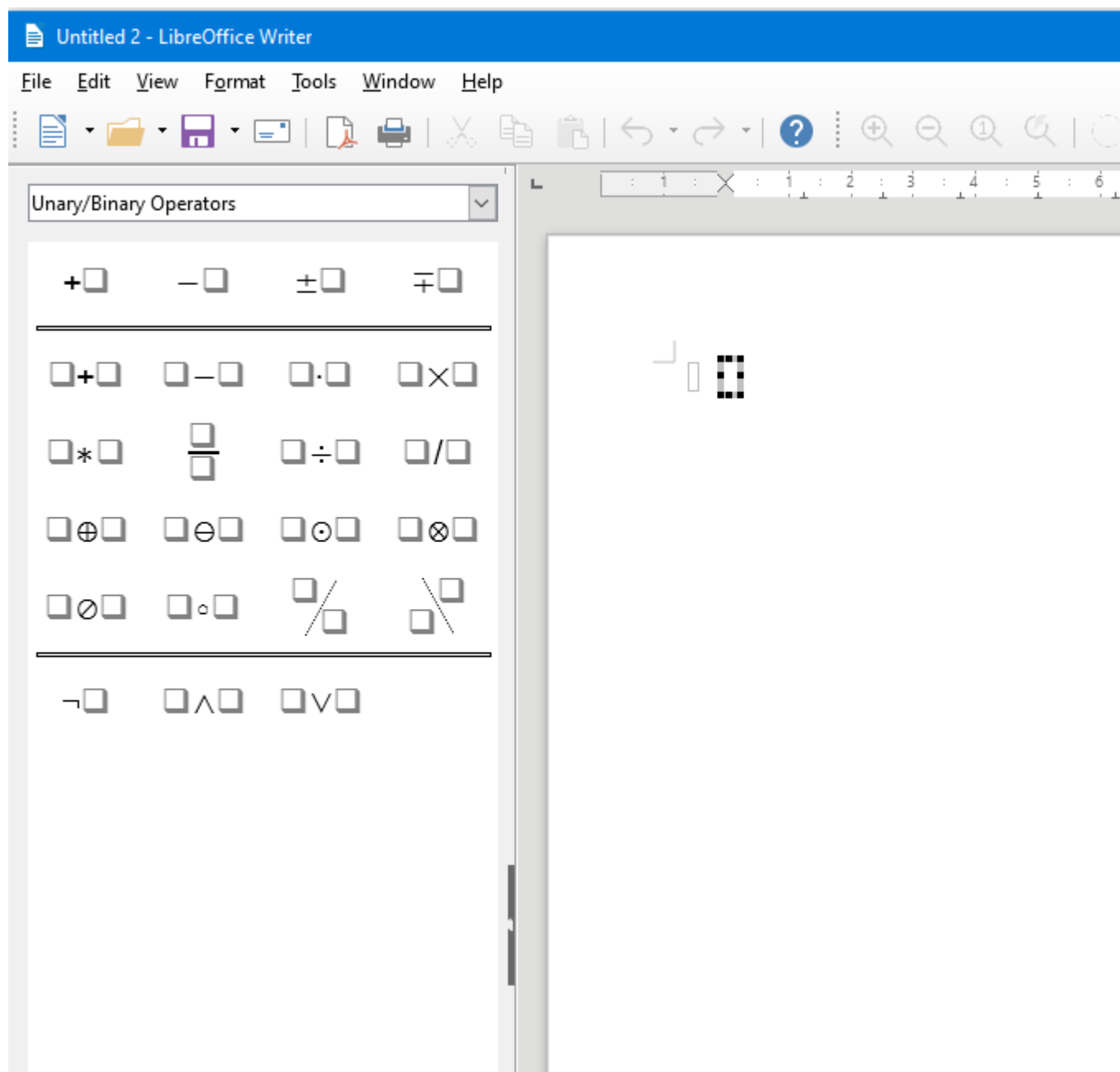


Figure 3. Formula tool a – symbol menu b – formula view c – text editor.

Formula tool consists of three views, menu with groups of symbols and operators, view of the edited formula and its text representation.

## 4 Section 3

### 3. Creating a mathematical equation:

#### 3.1 Adding brackets:

- From the drop down menu on the left side of the screen select Brackets  
Outcome: Field below the drop down menu should show different types of brackets (Fig. 4).
- Select needed type of brackets, or alternatively input them from the keyboard into text editor field

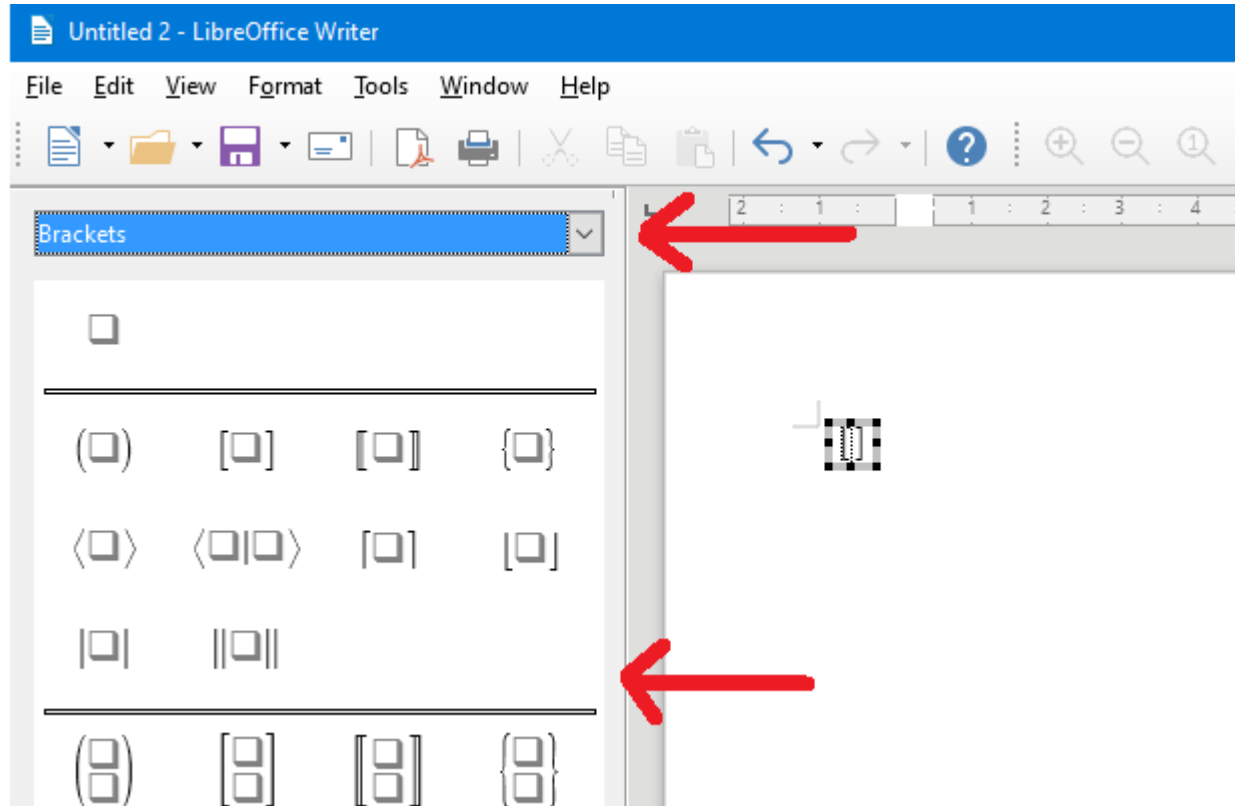


Figure 4. Drop down menu

#### 3.2 Adding Fraction symbols

- From the drop down menu select Unary/Binary Operators

- Select fraction (division) symbol or input over filling blank spaces with appropriate values, into text editor by keyboard (Fig. 5)

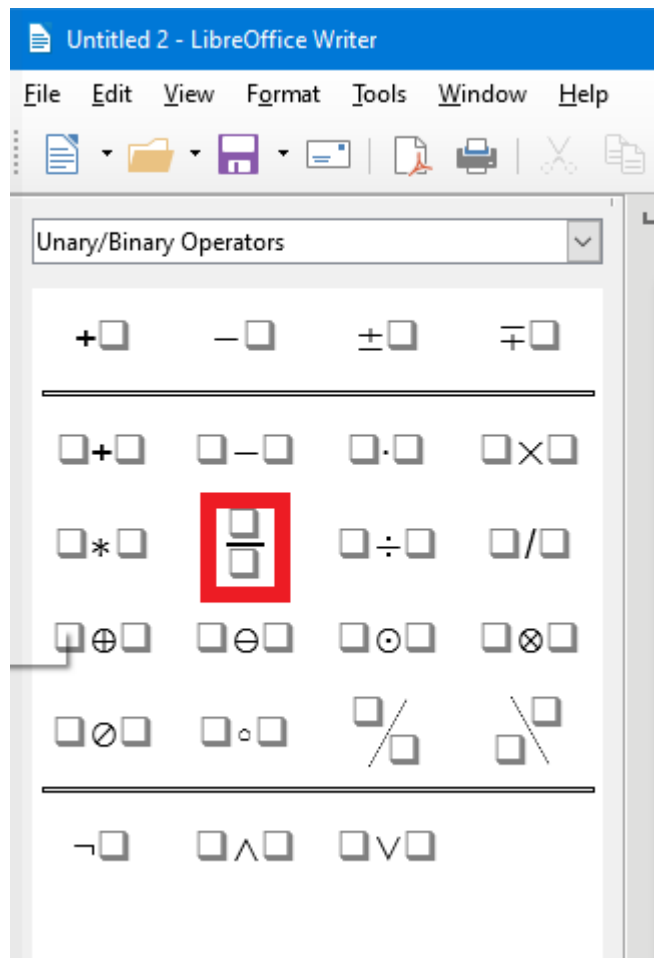


Figure 5. Unary/Binary Operators menu

### 3.3 Adding special symbols:

- To add special symbols such as partial or delta sign, from the drop down menu select Others
- In the edited formula select where to put the special symbol, or alternatively select wanted place in the text editor field
- Select wanted symbol to add it to the formula

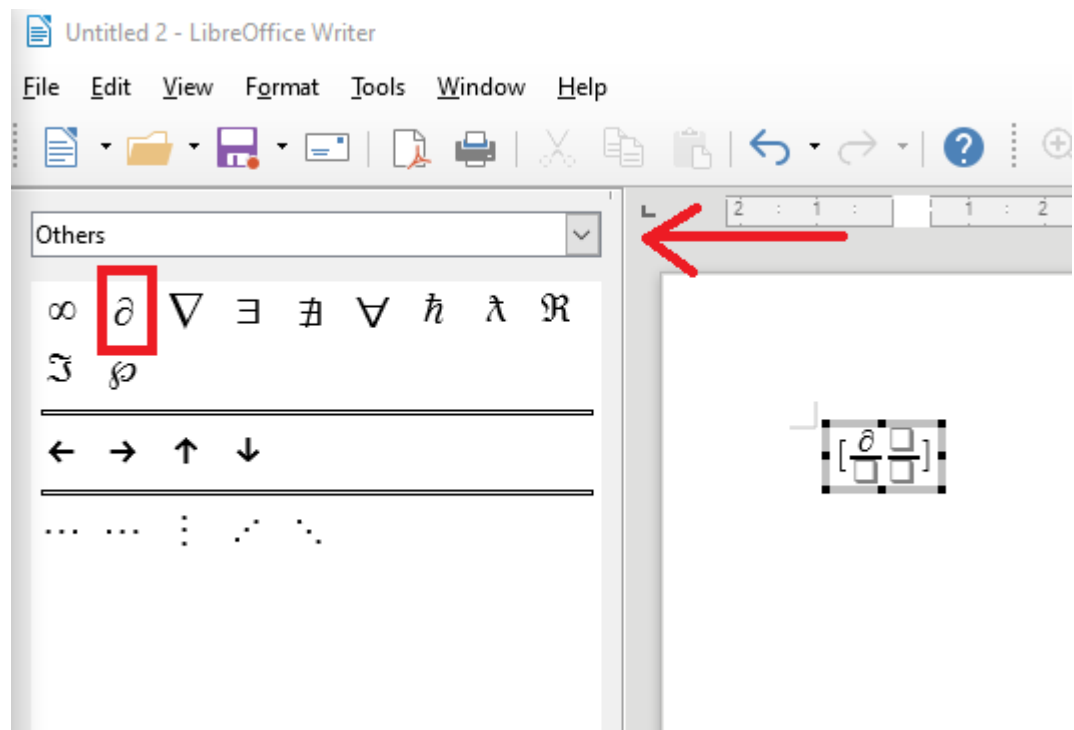


Figure 6. Other symbols

- To add a Greek or Latin letter from the main toolbar Outcome: A new window opens containing all symbols will open



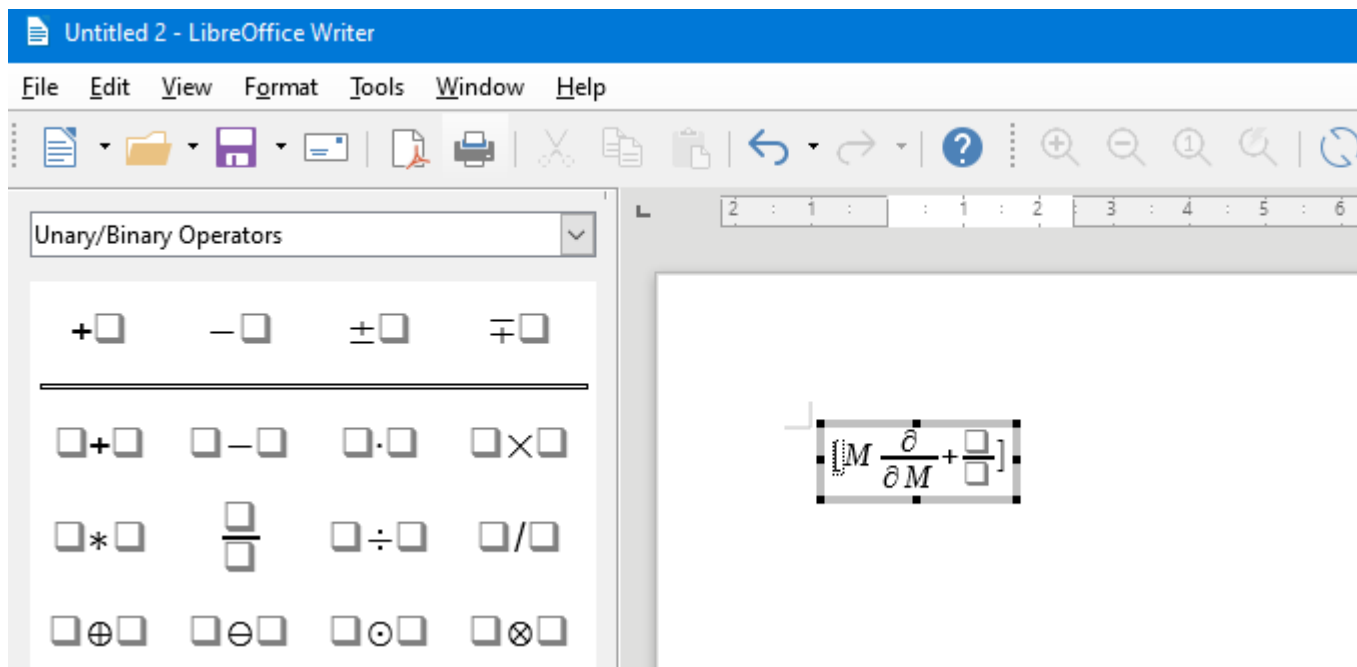


Figure 7. Adding symbols

- From the drop down menu of the Symbols window select Greek
- Select wanted symbol
- Select wanted symbol • Select Insert

Outcome: Selected symbol will be added to the formula

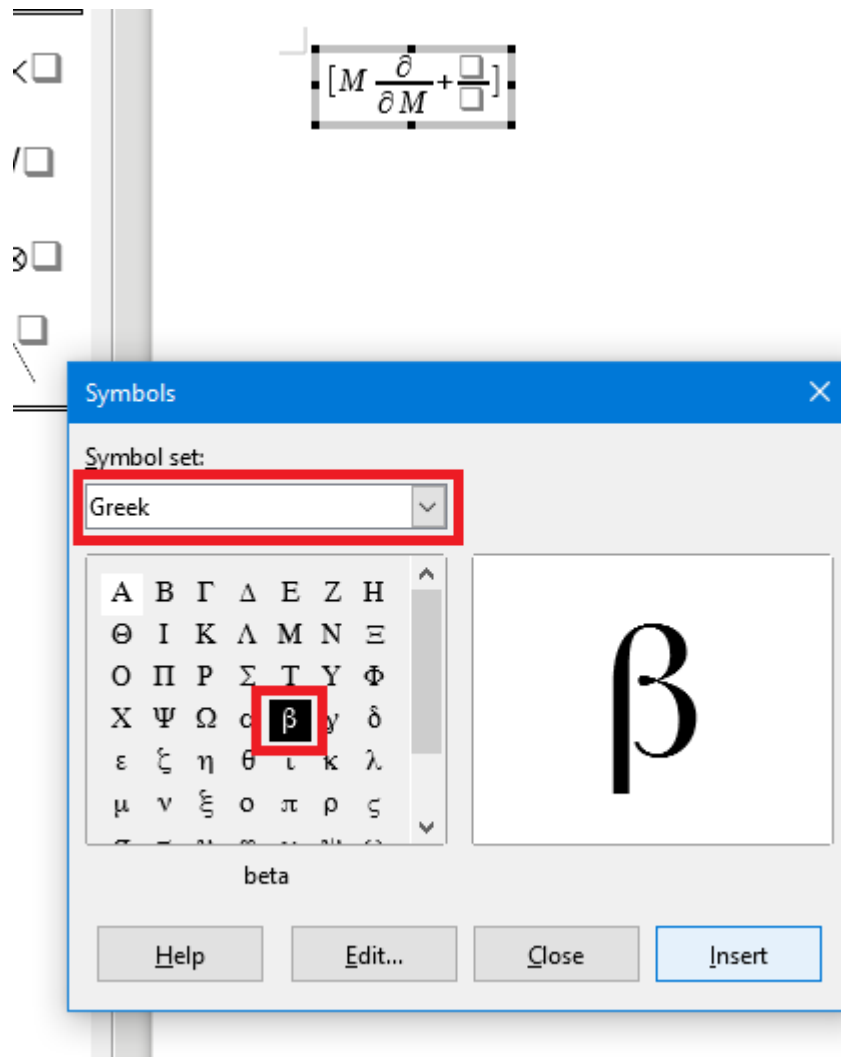


Figure 8. Symbol window

#### 3.4 Adding powers:

- From the drop down menu select Functions
- Select Power symbol, alternatively input X, where X is the base of the power, and white space should be filled with value of the power
- Select the base of the power
- Insert wanted value by keyboard or one of the menus

- Select the power
- Insert wanted value of the power by keyboard or one of the menus

### 3.5 Adding subscripts:

- To add subscript from the drop down menu select Formats
- Select the Subscript Right symbol, alternatively input  $X_{\quad}$ , where X is the base, and white space should be filled with value of subscript
- Select the base
- Insert value by keyboard or from one of the menus
- Select the subscripts
- Insert value

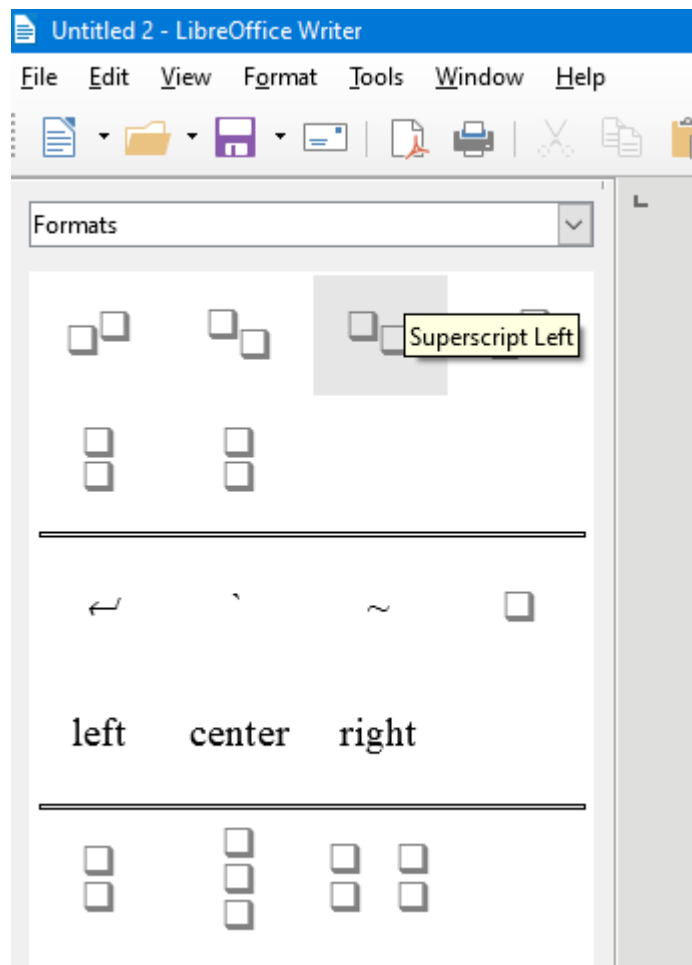


Figure 9. Formats menu

- Use Esc button on keyboard, or click white space outside the formula, to exit formula tool Outcome: Created equation will show in the document.

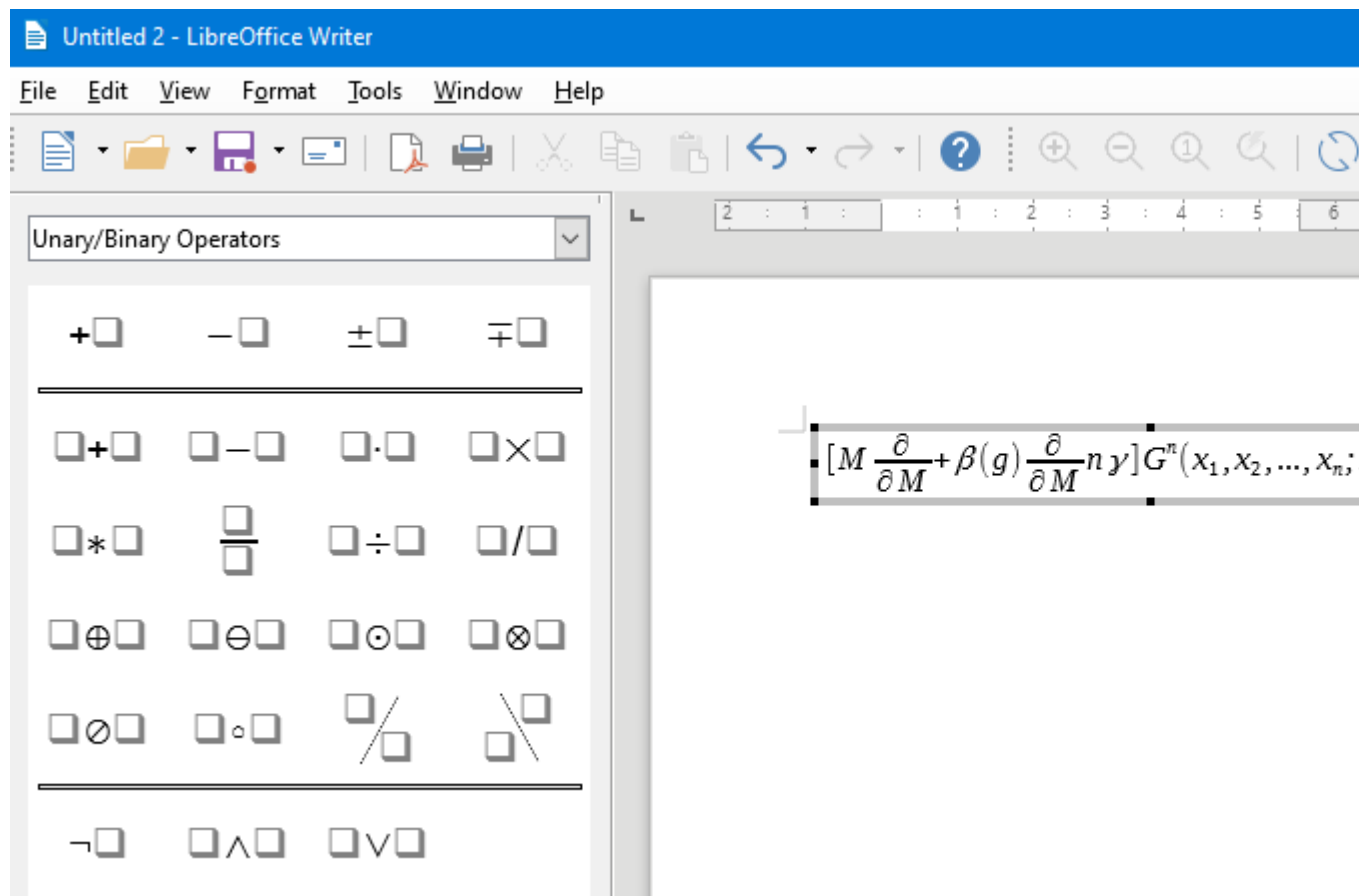


Figure 10. Finished equation in formula editor

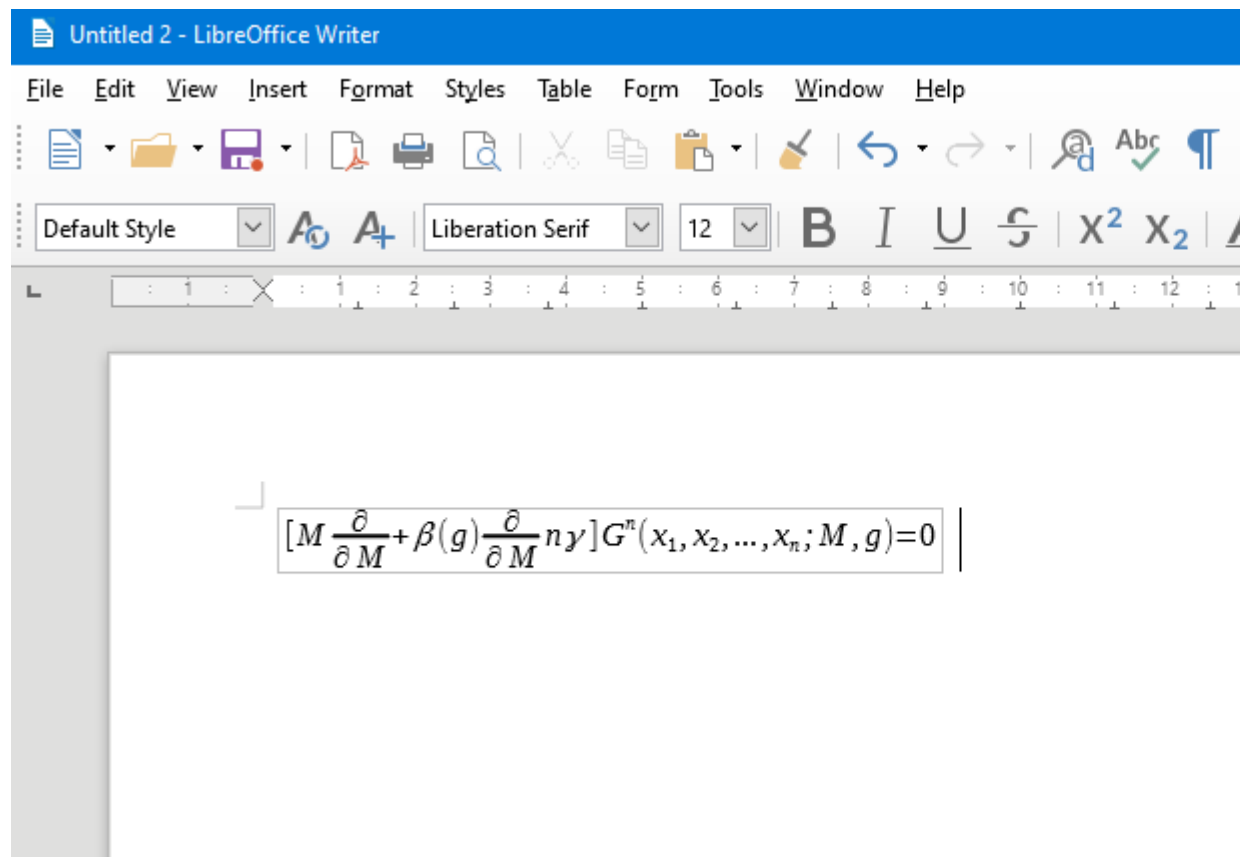


Figure 11. Finished equation in Writer document

#### 4. Exporting created document as a PDF file

- From the main toolbar select File
- Select Export as...
- Select Export Directly as PDF or alternatively select Export as PDF... if you want to choose more options such as pages to export, quality, metadata and other
- Specify location for the exported file
- Enter the name for the exported file Outcome: PDF file will be saved to a specified location with a given name.