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INSTRUCTION: GNUMERIC

The next window allows for precise chart shaping using three main fields:

1. The chart tree with its components
2. The field with buttons which controls the tree elements (the most important are *Add* (*Dodaj)* and –)
3. The field of detailed options with tabs

By clicking on the individual elements of the tree, its detailed options in the field no. 3 appears.
Going from the top of the tree respectively for the item Graph:

- tabs *Style* and *Theme* are used to create outlines around the entire **field** of chart. There is no necessity to change the defaults.
- by pressing *Add* (*Dodaj*) and choosing the option *Tytuł to Graph* it is possible to give a title to the entire **field** of chart. Tabs for the new element in the tree (Tytuł1) are enabling the change of its position, font, size etc.
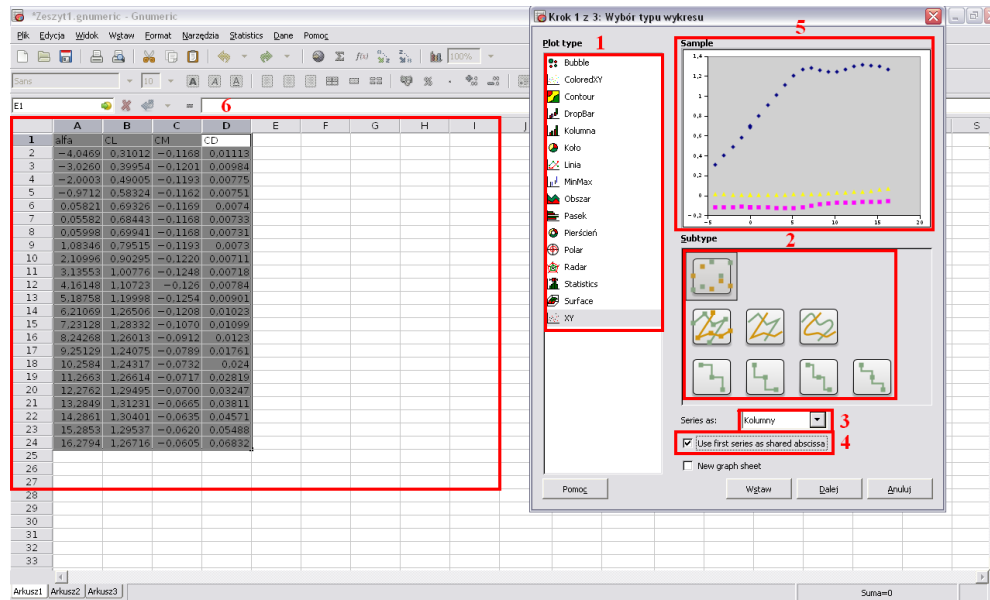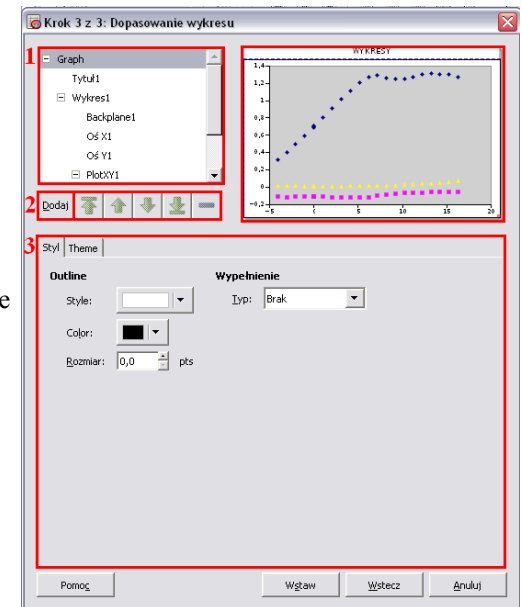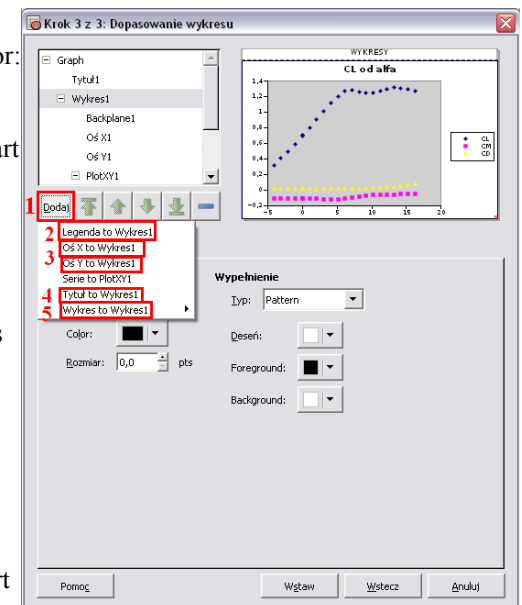
Gnumeric is a freeware spreadsheet with a Graphical User Interface stylized on Microsoft Excel. To display the chart creation window select the proper data range and press *Insert – Chart* (*Wstaw – Wykres*).... The major components of a new window are:

1. Chart type selection window (line, column, discrete and others)
2. Detailed chart type selection section with symbolic graphics
3. Data series bar defining the arrangement of data (by columns, rows, auto)
4. The option whether the first data series to be common to other series
5. Miniature chart window
6. Spreadsheet with source data for chart creation

In order to create such a chart with discrete research results mark:
1. XY
2. Graphics with discrete points
3. Columns
4. Yes
and then you should click *Next* (*Dalej*)

After moving to the next tree's element – Wykres1, pressing on *Add* (*Dodaj*) allows for:

2. Addition of legend to the chart
3. Addition of further x and y axis to the chart
4. Addition of title of the **specific** chart
5. Addition of further chart to the chart field

In the field of detailed options for Wykres1 there are 3 tabs: *Style, Position, Plot Area:*
- *Style* consists of two parts – *Outline* serves to defining the style, colour and shape of outline around the chart. *Wypełnienie* is responsible for chart background (between outline and axis's bordered area). It is not normally necessary to change the default parametres.
- Two remaining tabs permit the change of position & size of a chart in the field of chart

Please note that both legend and the chart may be moved manually in the miniature chart window. Just click LMB and drag selected element directly in the window.

Element *Backplane1* is responsible for background shape of the chart itself (the part of chart surrounded by axis). In the sole tab should be set:
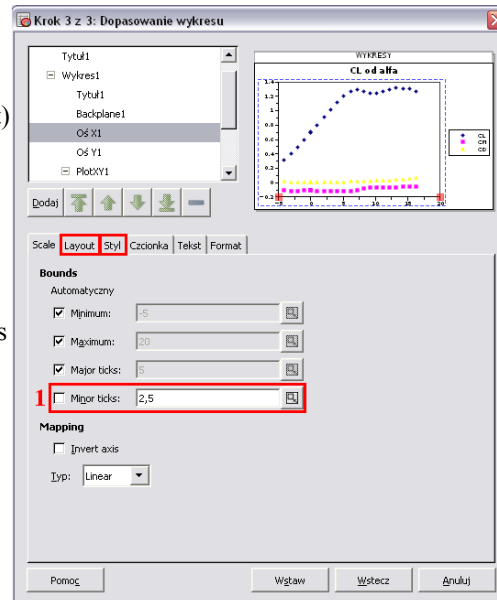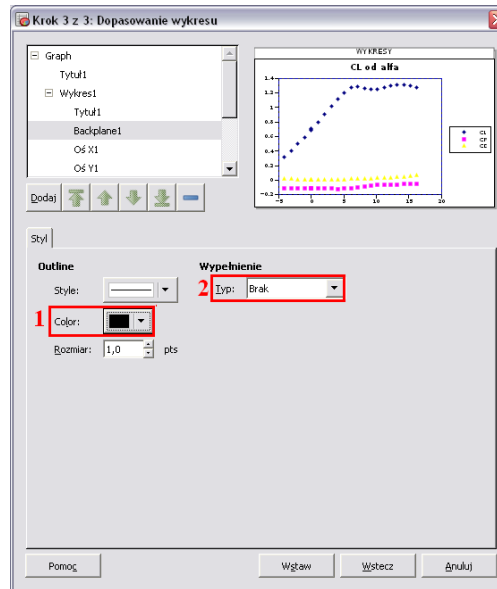
1. The outline of the chart's backplane – the optimal settings are: black colour, solid line, thickness – 1 Point
2. The colour of background – white is prefered

The further tree's elements are *Axis X1* (*Oś X1)* and *Axis Y1* (*Oś Y1)*. They are identical in construction, so the example is based on one of these:
- thanks to the *Scale* tab it is possible to control scale range and the distance between major (*Major*) as minor (*Minor*) axis's ticks (1.). The optimum setting is two times smaller value of *Minor Ticks* than *Major Ticks*

- in the next tab – *Layout* the axis's position can be specified (low, high, cross at the point) as well as axis's ticks style (either *Major* and *Minor*). It should be enabled *Outside* for *Minor Ticks* (for *Major Ticks* this option is selected by default)

- the third crucial tab is *Styl*, which allows to change the type and thickness of axis's line as well as axis's tick marks. Recommended colour is black, and line syle – continuous with a thickness of 1,5 point

A lot of useful options for *Axes* (*Osi*) are available after clicking *Add* (*Dodaj*), i.e.:

1. Insert axis label (*Etykieta to...*) to the chart – required.
2. Insert grid lines (*Major* and *Minor*) to the chart – required.
3. Insert additional x and y axis to the chart – recommended if data series have serious differences in scale

After inserting new elements, they appear naturally in the tree. For the *MajorGrid* recommended settings are: black solid line, thickness – 1 Point, whereas for the *MinorGrid*: black dashed line, thickness – 0,5 Point

Element *PlotXY1* is grouping data series. The tab *Axes* allows to choose the axis that will be assigned to the data series belonging to the given group. To change the default settings, however, you need to have the additional axis x and/or y. The last important elements of tree are data series. The individual tabs allow respectively:
- *Data* (*Dane)* determine the scope and the name of the data series (can be written manually or imported from the specific cell)
- *Styl* – the properties (colour, thickness etc) of interpolation line
- *Markers* – style, size and colour of points on the chart. Recommended size is 3-5 Pts (1.)
- *Details* – insert 0 instead of wrong data
- 2 last tabs refer to deviations for the data points
2. To the series a trendline can be added (*Trend line to nazwa serii*). Finally, click Insert and the graph should appear in the spreadsheet.