**Read-me file - Rossing mats**

This group of plans for circular knotted mats is based upon the work done by Nils Kristian Rossing investigating the mathematical properties of some symmetric mats made from one knot.

The description used to identify the designs is based upon the symmetry of the design and the names chosen by Nils Rossing in his book, which is referenced below. They are simply grouped by their mathematical similarity. For example, in the folder labelled *Kringles* there are further folders labelled as d*x*Kringles where the value of *x* gives the symmetry of the design – eg d7Kringles are those with 7-fold (heptagonal) symmetry. Within these folders the files may have a further identifying letter and an indication of what else is shown.

Two examples:

**1** *d7KringleiPlanWithJunctions* is the design, with over/under crossings shown, of the pattern called d7Kringle**i**

**2** *d7KringledEquation* is the equation to plot the design called d7Kringle**d** which can then be plotted using the data below.

The patterns were created with a computer plotting app or program, for these the relevant equation is given. It is fairly straightforward to use the program Geogebra with the pre-set system in this link:

<https://www.dropbox.com/s/hsicdzmec6tbz8h/GeneralRosematEquation.ggb?dl=0>

The .ggb file is ready for opening with the Geogebra program. Geogebra is a free-download and is very widely used. See <https://www.geogebra.org/>. There are more detailed instructions below.

If you would like help or advice, please contact me at [*cr@byfleet.org*](mailto:cr@byfleet.org)

Reference*: Design and Make Rope Mats and Rosettes* (978-8-29-208848-7) Nils Kristian Rossing, published by the International Guild of Knot Tyers, 2017.

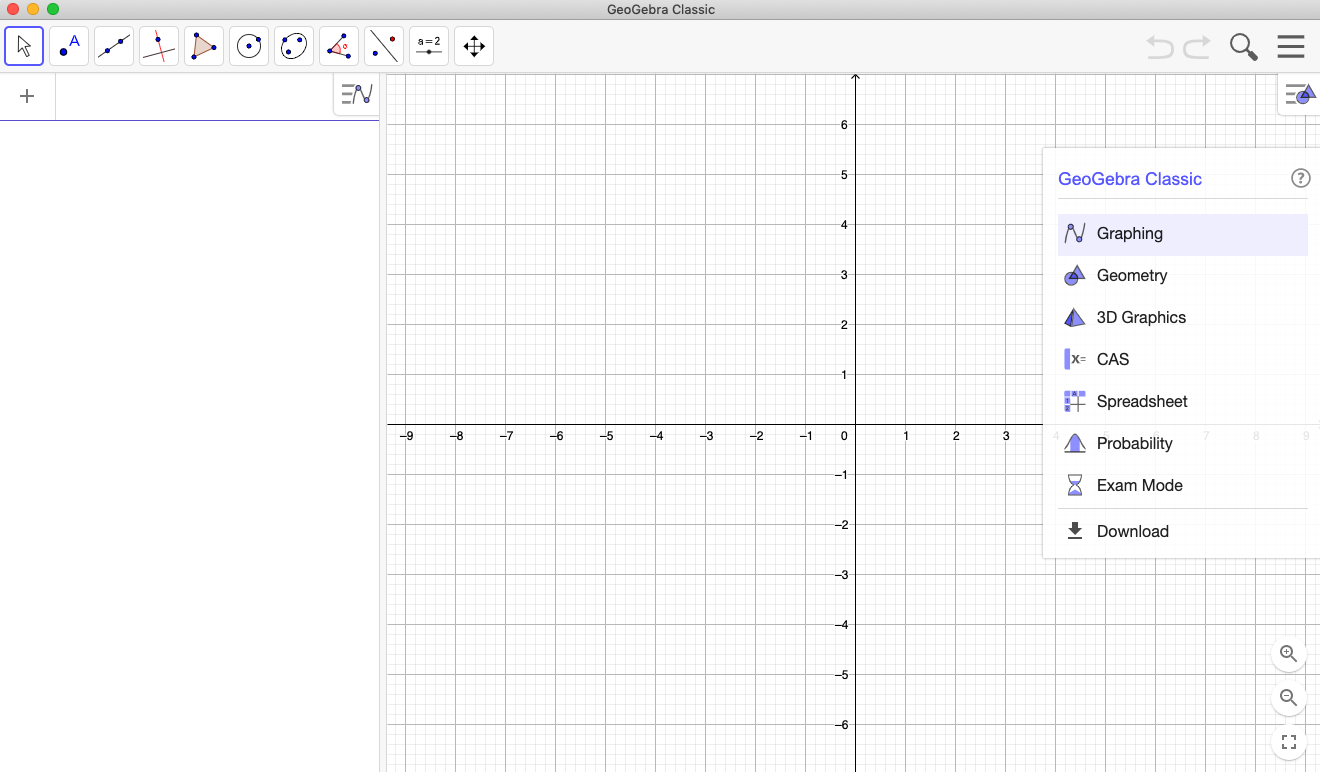
Available from [*supplies@igkt.net*](mailto:supplies@igkt.net)*.*

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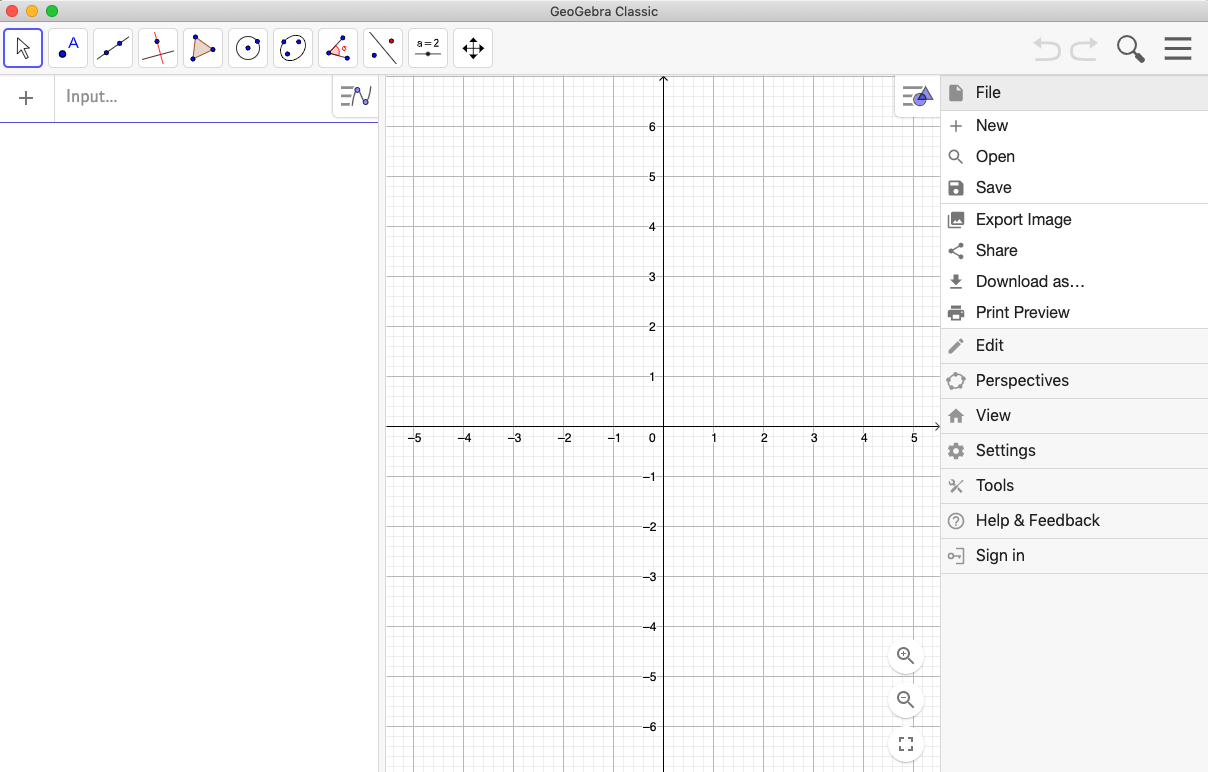
**Using Geogebra**

It’s not immediately obvious how to load the saved file, this series of screenshots may help:

1 Geogebra home page → Click on 3-line menu bar at top right

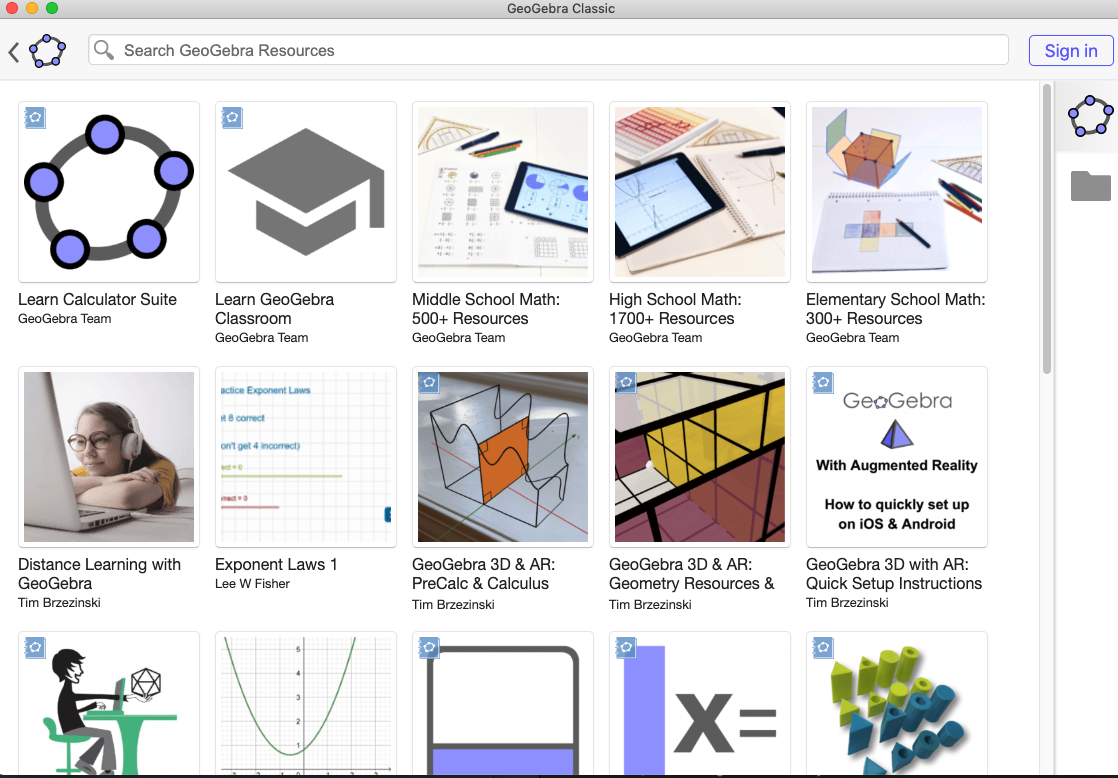
☚

2 This brings up the menu → choose Open



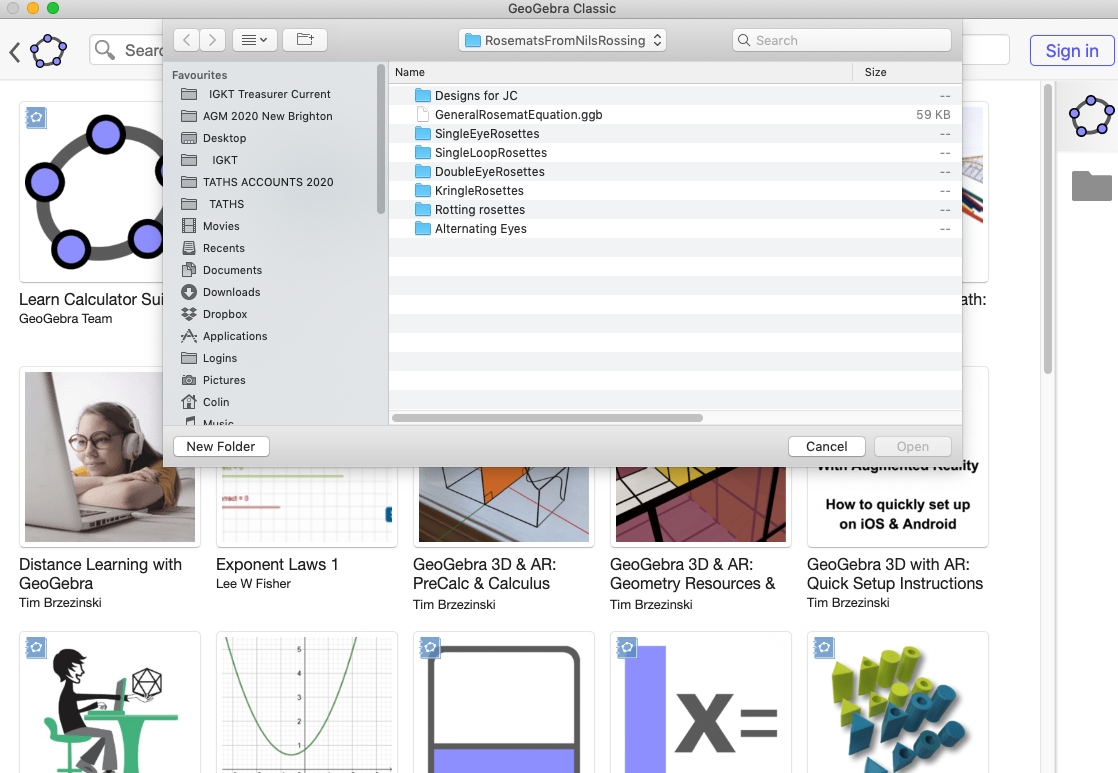
☚

3 Now click on the grey file icon in right hand column



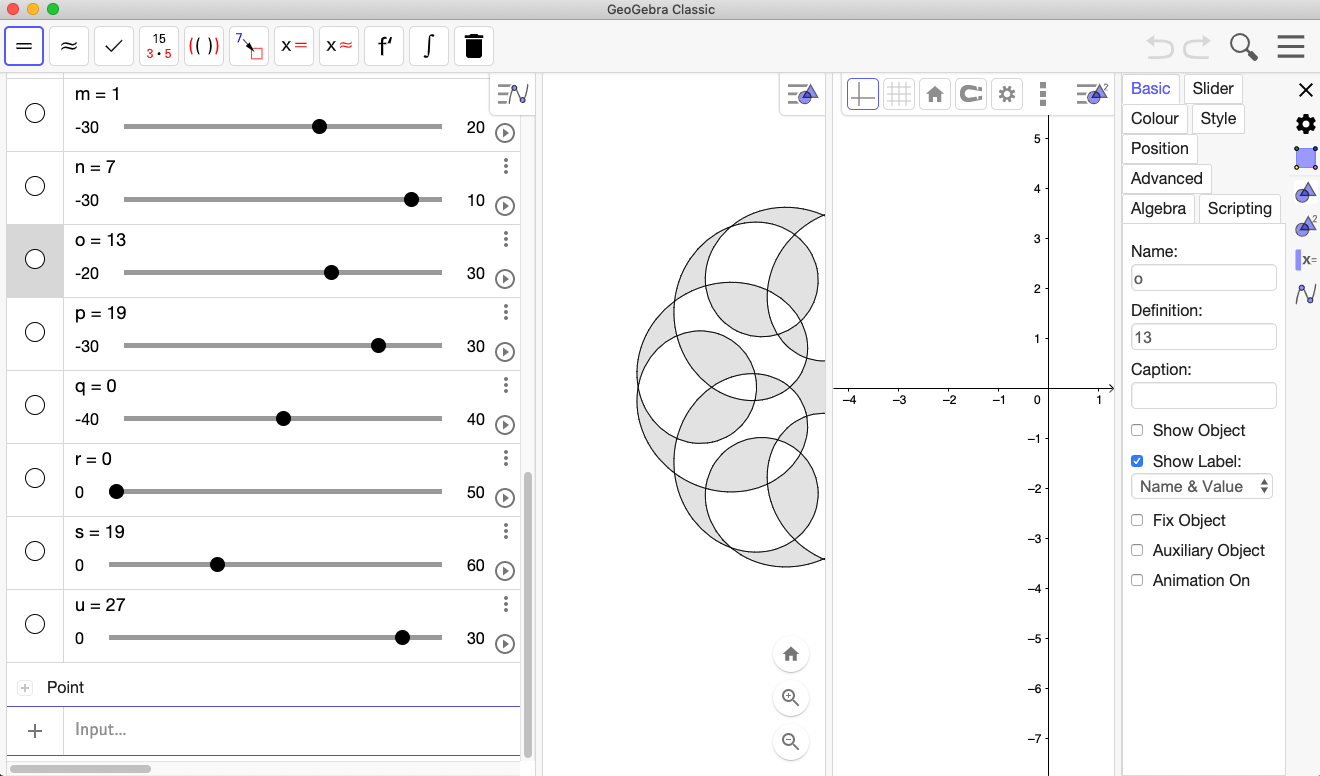
☚

4 You should now be able to navigate to the file address as normal on your device.

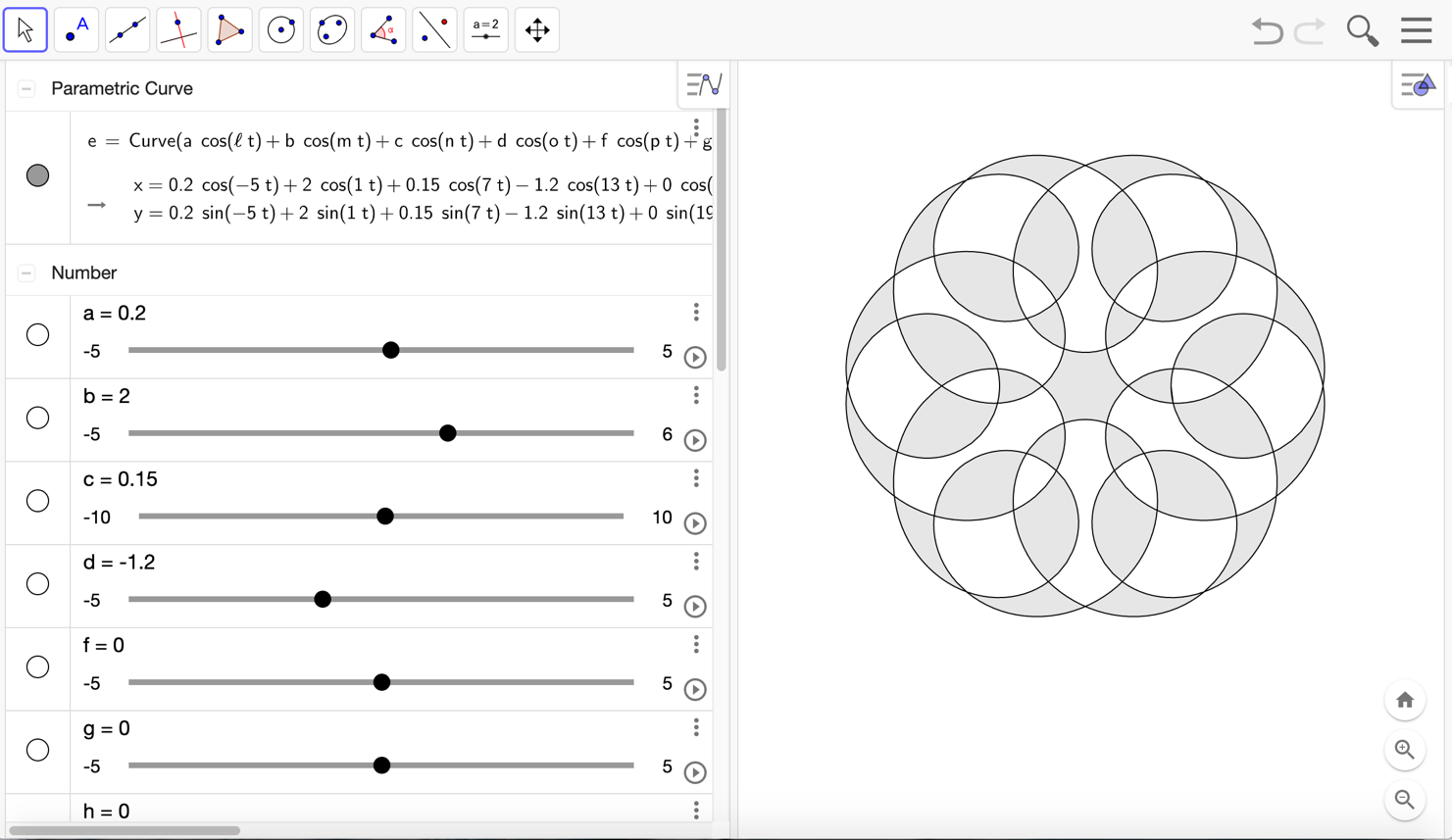


5 This is the fully operational page. The slide controls (black dots) are on the left, (a-h amplitudes, l-u frequencies) with the equation at top. Move with a right-clicked cursor.

All the vertical screen divisions can be slid from side to side – I usually just need the two on the left – the slider controls and the plotted graph on a plain background.



6 As you move the sliders, you can see the equation change at the top of their column and the plotted graph changes simultaneously. The program plots 600 points faster than a blink – a bit easier than the pencil and graph paper of school-days. Clicking on the 3-line menu bar brings a drop-down menu where you can choose to Export the image of the graph.

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7 If you have Photoshop or similar image handling program, you can convert the grey areas to white, if you wish, and then print and add over-under guidelines by hand. For large mats you can print the designs as posters in Photoshop or via your printer. I’ve used up to 5 x 5 A4 pages for mats made with 12mm rope.

8 Have fun!