KnotPlot Exercise #5: Stick knots
Changing the Culture 2000 Workshop

Rob Scharein

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Stick knots

So far we've seen knots in their smooth versions, now we'll look at knots in their *piecewise-linear* representations, in other words, a polygon.

What to do

Start KnotPlot You first should get a copy of the two page handout with a very quick introduction to KnotPlot. If you're already running KnotPlot, the first thing to do is to type in the command reset all or click on the "Reset" button to get KnotPlot into a "fresh state" to start experimenting (you might not always have to do this, but the exercise may not work as expected if KnotPlot is in some weird state). For this exercise, click on "Beads & Sticks" right after resetting.

How many sticks does it take to make a trefoil?
Any guesses? Type in the command unknot 8 and see if you can deform the knot into a trefoil (ask for a demo). Do you think you need more or less beads? If you give up, type in load ms/3.1 to see the "minimal-stick" version of the trefoil (make sure you've clicked on "Beads & Sticks" first).

Minimal stick catalogue. KnotPlot has two separate versions of the knot database. The first are the "high-stick number" knots we've been working with so far, and the second are the minimal-stick versions. Try loading anyone of these, for example load ms/10.124 (you just have to prefix the knot name with ms/ to get the minimal stick version).

Nice symmetries. Many of these stick knots have nice symmetries. Type in first ortho 4 4 44 because these symmetries are easier to see in orthographic projection, and then try one of:
load ms/8.19
load ms/10.124
load ms/7.1
load ms/9.1
load ms/9.16
load ms/6.3.3

When you have one of these knots loaded try one or more of the following commands (in any order):

```
rotate x 90
rotate y 90
rotate z 90
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