Sphere Model 2

Version With Separate Tabs

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The webpages for GNU 3DLDF are here: `http://www.gnu.org/software/3dldf/LDF.html`

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Instructions

NEW! 2012.08.06. Added pyramids for attachment to the octagonal caps.

NEW! 2012.08.05. Added octagonal caps. They are attached to the spherical biangles at number 12, where I’ve added markings for the tab traces. The plan for the cap and the tabs are on the page for the separate tabs. The spherical biangles and the tabs will need to be cut off beyond the places where the caps are attached. accordingly, as soon as I get a chance. **PLEASE NOTE!** It may not be possible to remove the ends of the spherical biangles from the plans, because this might cause the resulting paths to be drawn inaccurately: I was working on subpaths at some time in this past, but I’m not sure if it’s possible to draw portions of paths. I remember working on this feature, but I don’t know whether I finished it and it certainly hasn’t been tested thoroughly.

PLEASE NOTE! The author has tried to ensure that the following plans are correct, but as of May 31, 2010, he has not tested them yet himself. As mentioned above, this material is distributed **without a warranty**. I recommend that users check it themselves before investing a lot of time and effort into cutting out the paper model.

Any corrections will be gratefully received by the author. Contact information can be found on the title page.

These plans represent a “development” of a sphere: The individual figures are “flattened-out” spherical biangles corresponding to 1/8 of a sphere.

This version of the model consists of separate pieces which must be joined by using tabs placed under the spherical biangles. They will not be visible when the model is assembled.

To use these plans, tape, tack or otherwise attach them to a sheet of paper which should be robust, but not too thick. I generally prefer tacking to taping, where possible.

Fairly light, smooth watercolor paper might be a good choice. Bristol board or cardboard cannot be used for this model, because the pieces need to be able to bend. In addition, if the paper is too thick, it may be difficult to attach the tabs. For better accuracy, it would be necessary to account for the thickness of the paper when calculating the shape of the tabs.

First, prick out the holes for the stitches and then use a cutting knife to cut out the *outer* lines of the plan. **Please note**: The *inner* lines are only for reference and should not be scored! Crosshairs in black mark the places where holes should be pricked, on both the pieces and the tabs. Toward the ends where the curves get very close to the edges, holes should not be pricked. I have added numbers and tick-marks beside the even-numbered crosshairs and also further along the curves beyond where holes should be pricked. The numbers and tick marks should be written on both sides of the pieces and tabs when they are cut out; otherwise, it is nearly impossible to align them correctly when assembling the model.

There are two additional crosshairs at tick mark 15 at the ends of the pieces. Here, holes should be pricked and a thread run through them for pulling the ends together *carefully* to finish assembling the model.

Please Note: This is not an ideal solution for the ends. A better idea would be some kind of “polar cap”. I will try to work on this as soon as possible. (2010.06.04.)

Felt mats are available at hobby supply stores. I find they work well for pricking out the holes.

The knife must be sharp as watercolor paper (or other heavy papers) will dull the blade quickly. I have been using knives with disposable blades. I’ve been meaning to try sharpening them but haven’t done so yet. I therefore can’t say whether this will work. It seems a shame to waste so many blades, which is why I have a jar full of them. They must be good for something.

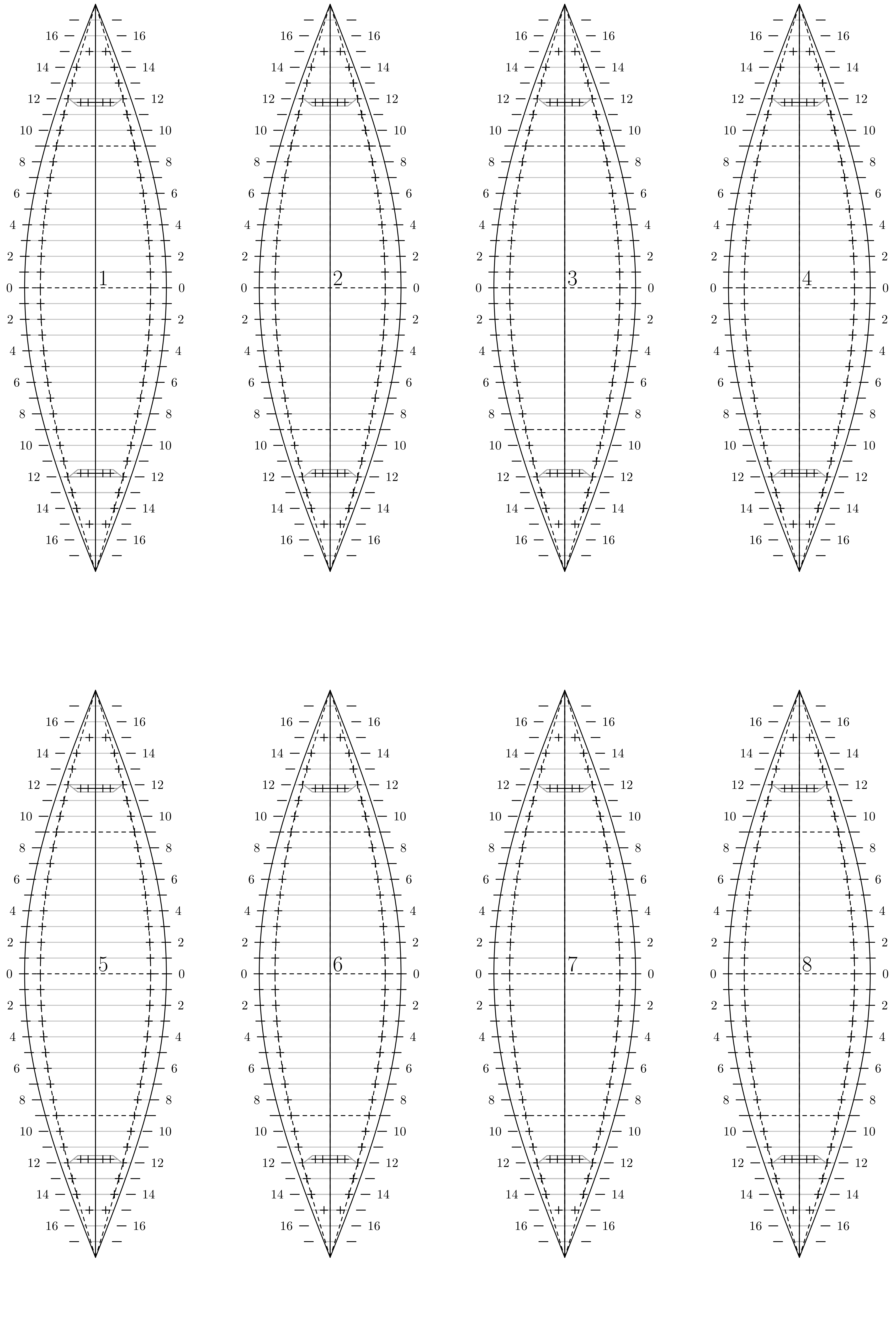
It will be necessary to reattach the plans parts of them are cut out.

Make sure that the plan is attached smoothly or you will introduce inaccuracies. *Do not detach it or let it slip until you are done!* You will never get it back where it’s supposed to go. However, with this model, this is only important for an individual piece, since they aren’t attached to each other.

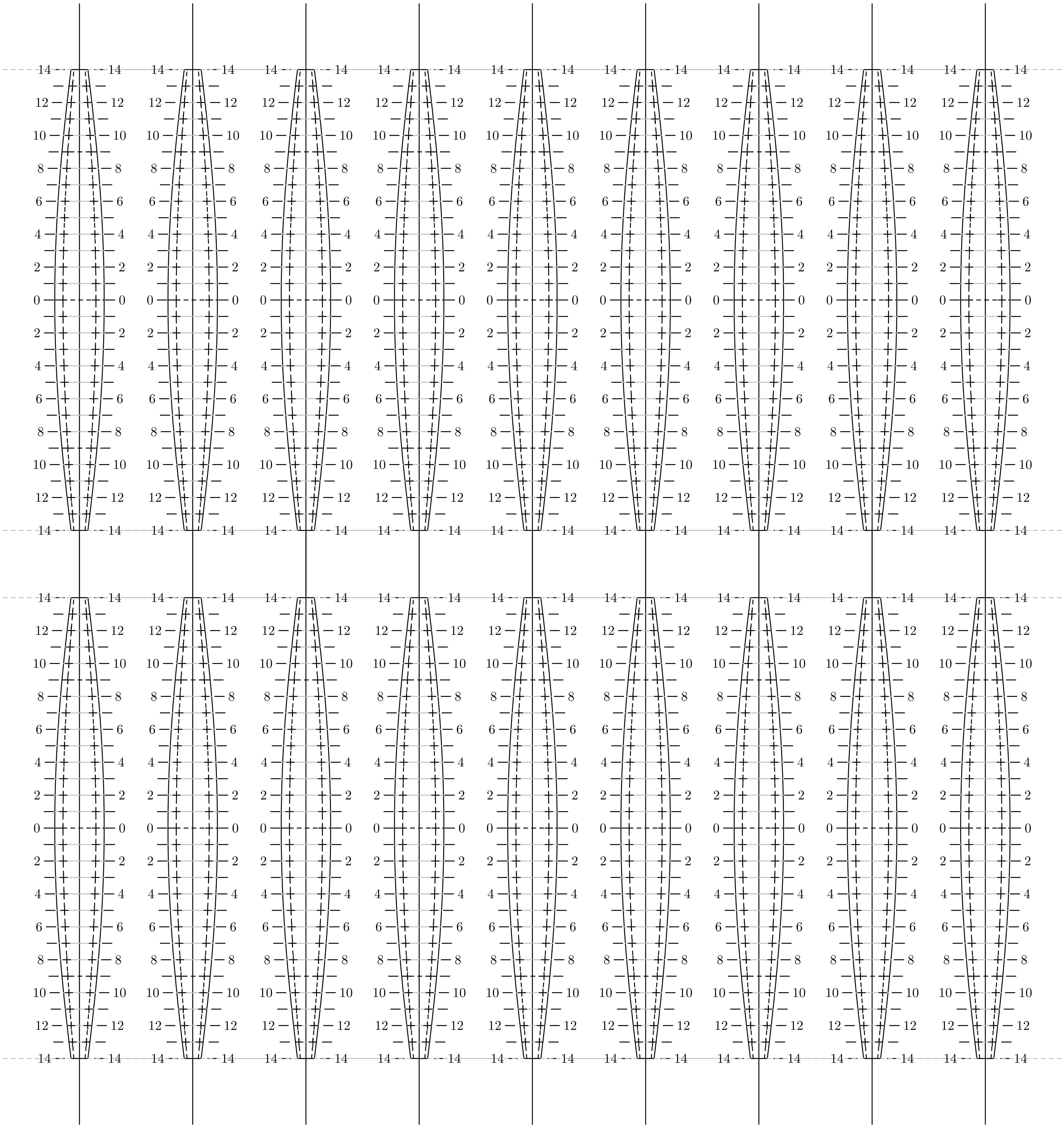
If you use tape, please use the removable kind. Ordinary masking tape will damage the paper when it is removed. Be aware that “removable tape” isn’t completely reliable, especially if left too long on the drawing. Sometimes it’s possible to reuse pieces of it, which avoids wasting large amounts of it.

Each figure has three curves on the left and right sides: 1. the edge of the spherical biangle, 2. an inner curve for stitches, 3. the trace of the edge of the tab used to join each piece with its neighbour.

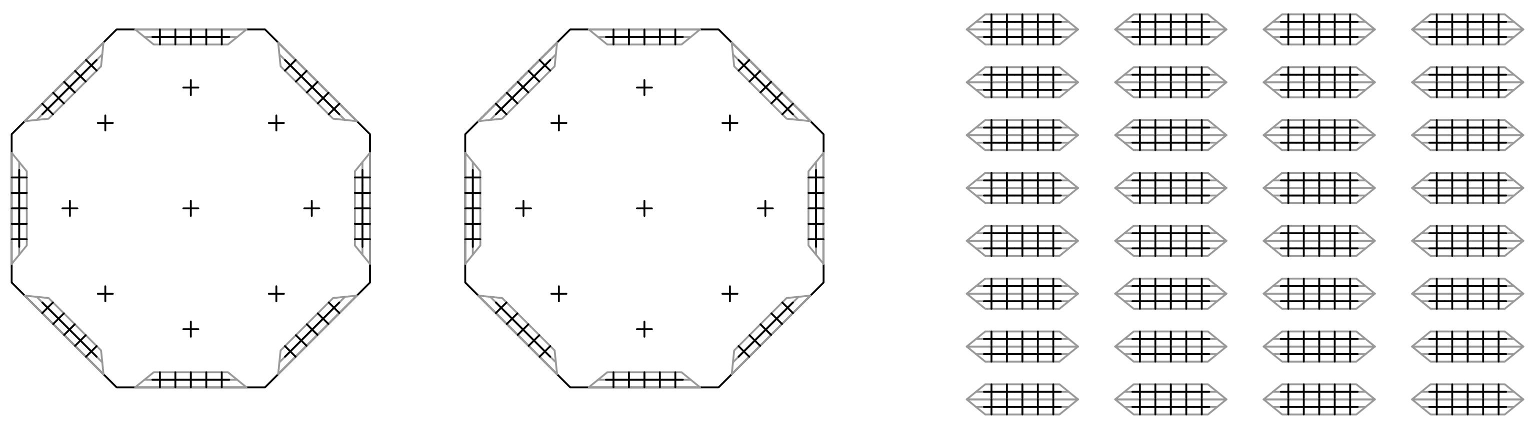
Spherical Biangles



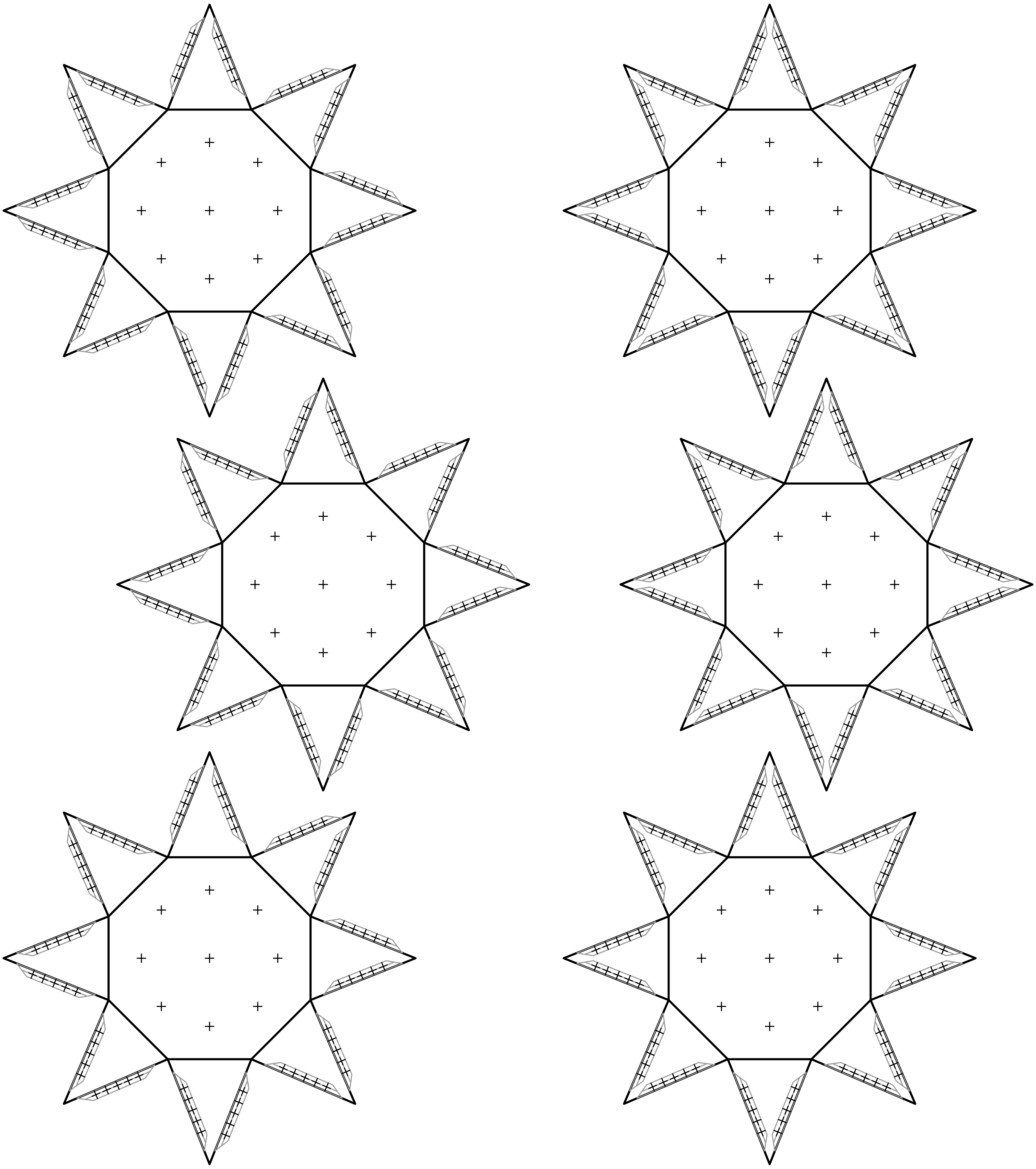
Tabs



Octagonal cap



Octagonal Pyramids for Caps



Sides:	8
Base diameter:	5.13086cm
Height:	0.669873cm