Dodecahedron Net 2

Laurence D. Finston

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This document is part of GNU 3DLDF, a package for three-dimensional drawing.

The mailing list `info-3dldf@gnu.org` is for sending announcements to users. To subscribe to this mailing list, send an email with "subscribe ⟨email-address⟩" as the subject.

The author can be contacted at:

Laurence D. Finston
c/o Free Software Foundation, Inc.
51 Franklin St, Fifth Floor
Boston, MA 02110-1301
USA

`Laurence.Finston@gmx.de`

Instructions

PLEASE NOTE! The author has tried to ensure that the following plans are correct, but as of October 19, 2007, 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 cardboard model.

On the other hand, this model is simple enough to be virtually fool-proof, so I don't expect there to be any terrible errors in it. It will hardly be a disaster if a tab is out of place, since one could easily be added after the model's cut out.

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

The plans could be improved by using dashed lines for the edges that need to be scored and solid lines for the ones that need to be cut. However, this model is simple enough so that this isn't really necessary.

It would also be possible with a reasonable amount of effort to remove the edges of the tabs that extend into the neighbouring face. I will do this as soon as I get the chance.

To use these plans, tape or otherwise attach them to a sheet of Bristol board or heavy paper. Then use a cutting knife to cut the *outer* and *score* the inner lines of the plan. The knife must be sharp as Bristol board 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.

You will probably have to retape as you cut out bits of the plan.

Make sure you tape the plan down smoothly or you will introduce inaccuracies. *Do not untape it or let it slip until you are done!* You will never get it back where it's supposed to go. However, it is possible to start again, make another portion of the plan and attach the pieces. There's no real need to make the net in one piece.

Use "removable tape" (or whatever this is called). Ordinary masking tape will damage the paper layer of the Bristol board 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.

The right-hand cluster of pentagons, $p_0 \dots p_5$ will form the *top* of the dodecahedron. The cardboard is scored on the top, so that the pentagons are folded downwards. The right-hand cluster of pentagons can be thought of as remaining in place, while the left-hand cluster, $p_0 \dots p_5$, is folded around underneath it.

The sides of faces without tabs have a "trace" of a tab on them, indicating where the tab will lie under it. The dots on the lines through the middle of the tabs and their traces (lengthwise) indicate positions where holes can be made for sewing the model together. This will only be necessary for the last faces, where there's not enough room to fit one's fingers inside the model.

Holes can be made using a needle, if the cardboard isn't too thick. A small tack or brad can be driven through thicker cardboard.

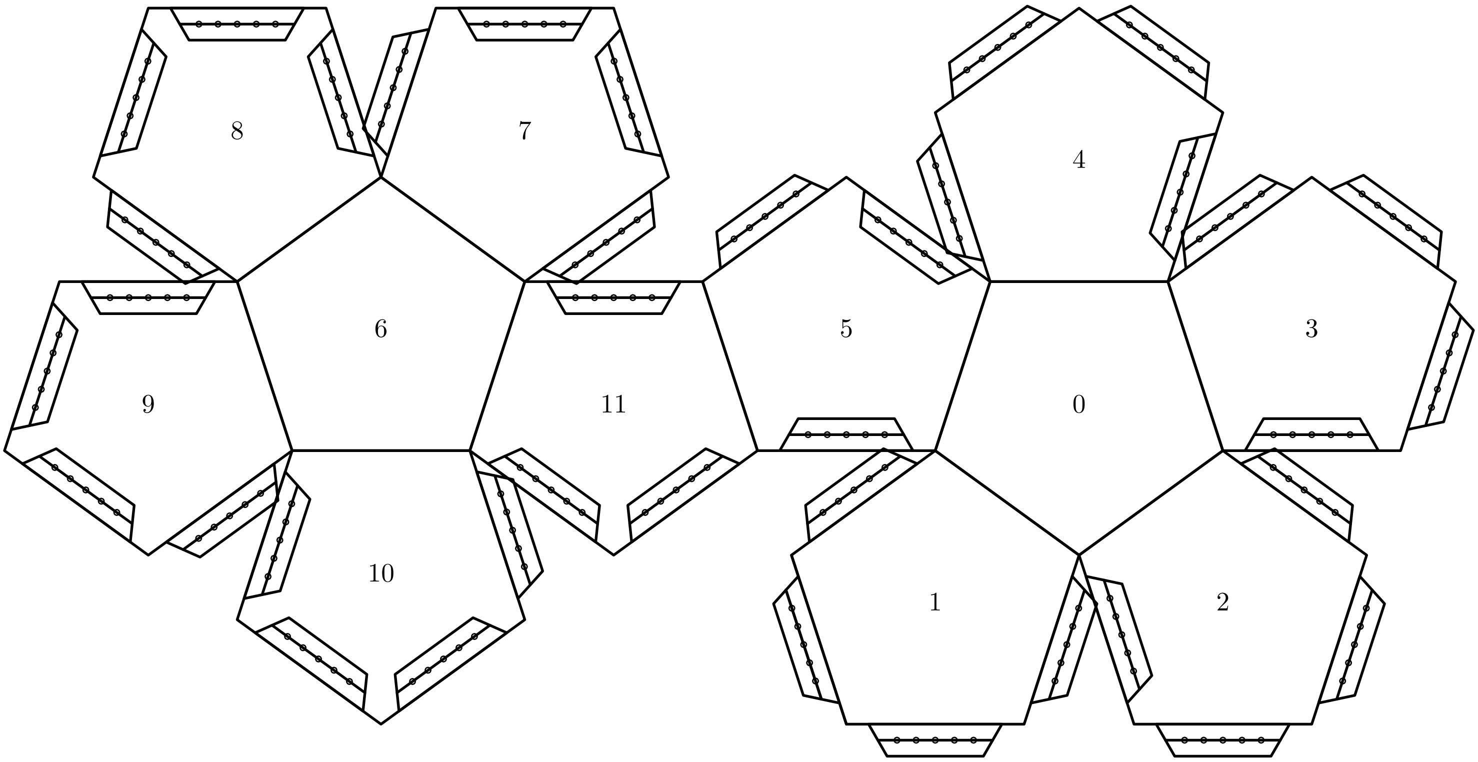
After the glue has hardened, stitches can be picked out and the ends snipped off. If paper is to be glued onto the faces (e.g., watercolor paper), it may not be necessary to remove every last trace of thread.

I recommend using hide glue, which must be soaked in water and heated in a glue pot.

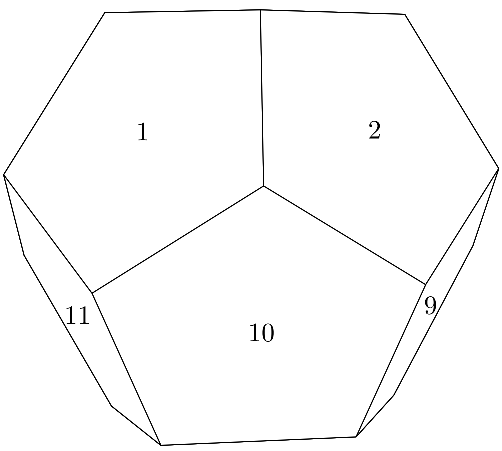
I like to glue watercolor paper onto my models, since Bristol board is not a particularly attractive material. I will be adding plans for pentagons in the same sizes as that of the plans for the nets. The plans for the nets should not be used for this purpose, because the pentagons butt up against each other. To cut out individual pentagons precisely, there must be gaps between them.

  Author: Laurence D. Finston

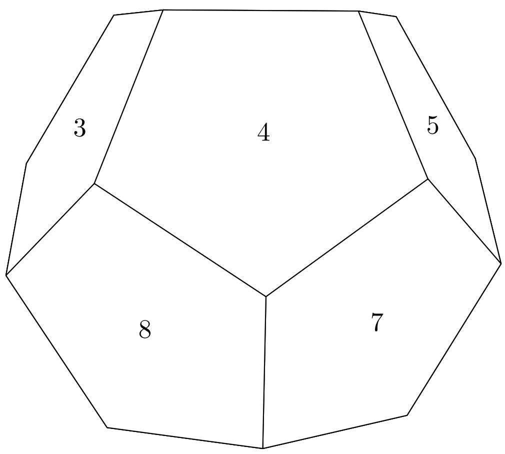
(See following page for larger net)



Diameter of enclosing circles: 4cm



Front



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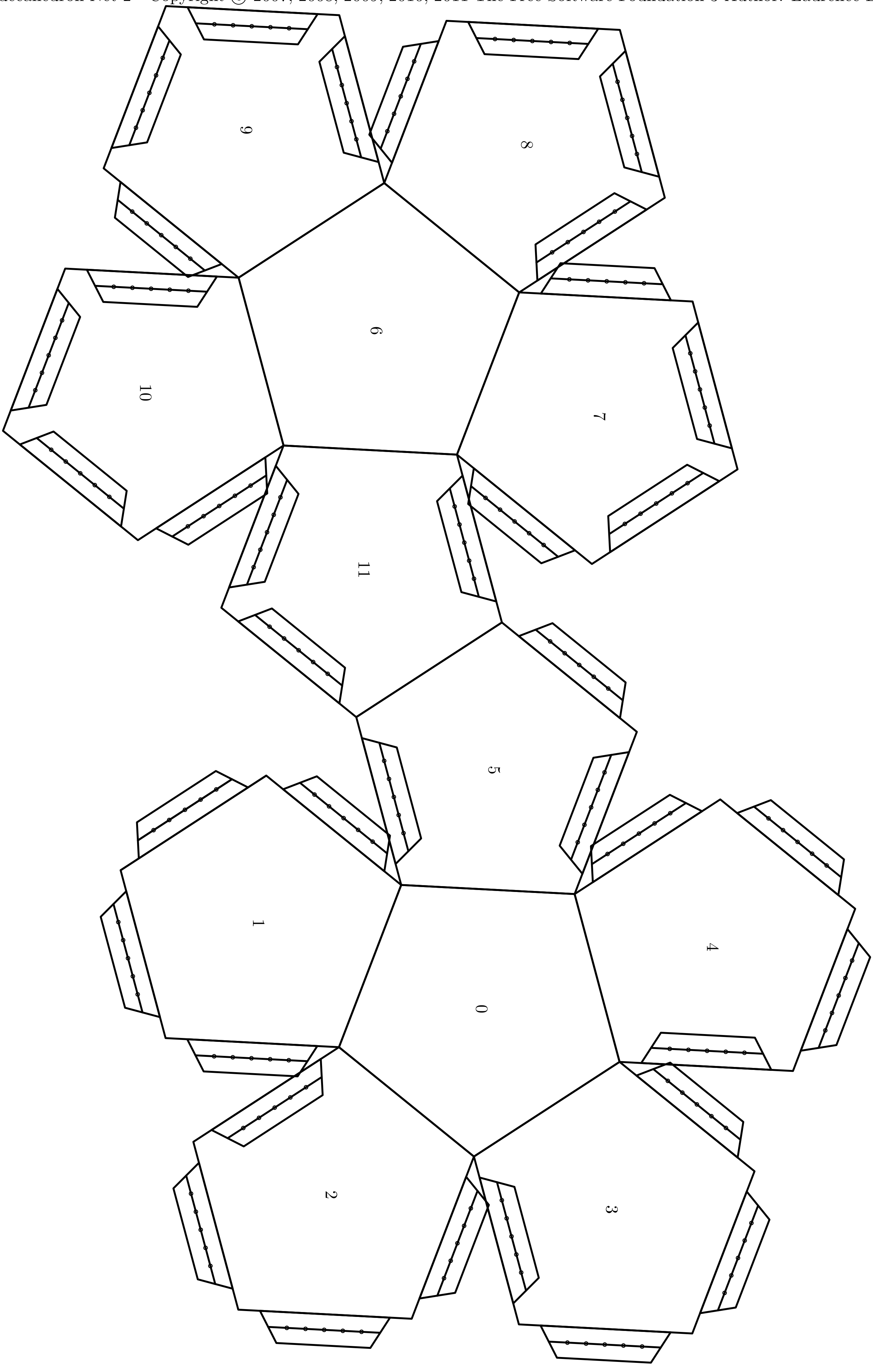
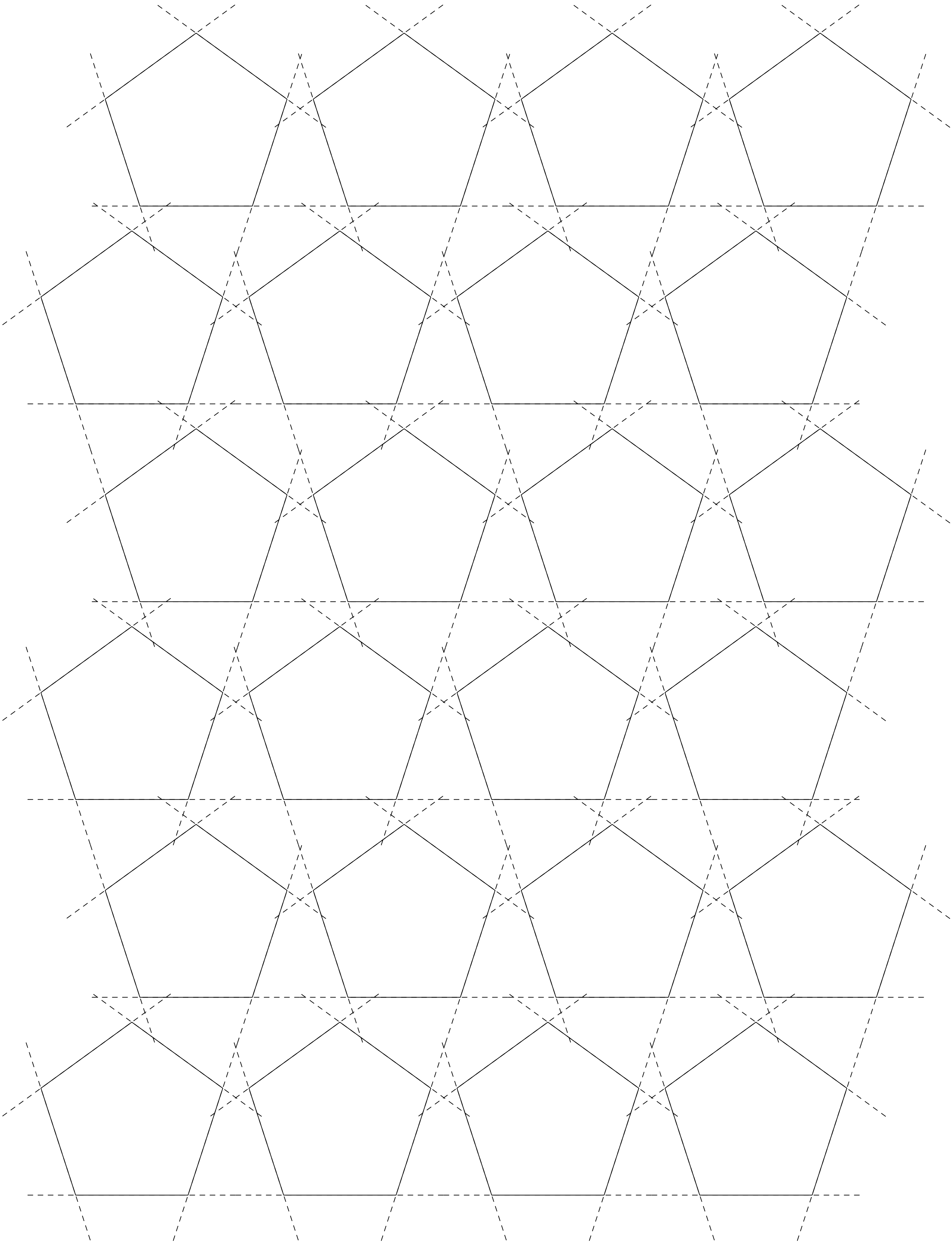


Diameter of enclosing circles: 6cm

Pentagons for cutting out

Diameter of enclosing circles: 4cm



Pentagons for cutting out

Diameter of enclosing circles: 6cm