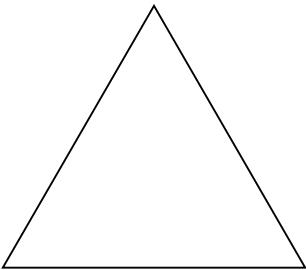


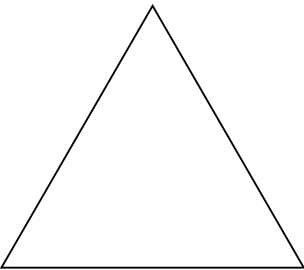
Cuboctahedron

cuboctahedron / 1.0.0 / Letter / Template page 1

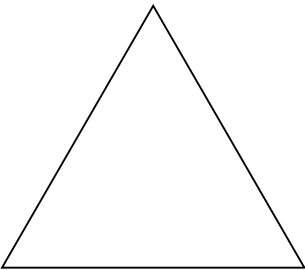
Tpmm | cut 1
40.00 x 34.64 mm



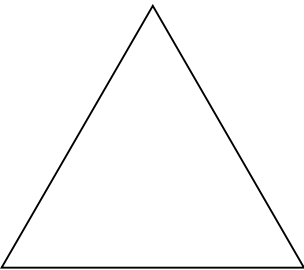
Tpmp | cut 1
40.00 x 34.64 mm



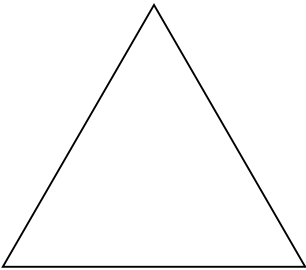
Tppm | cut 1
40.00 x 34.64 mm



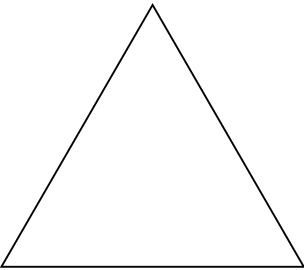
Tppp | cut 1
40.00 x 34.64 mm



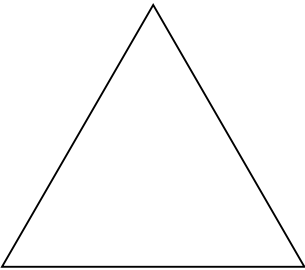
Tmmm | cut 1
40.00 x 34.64 mm



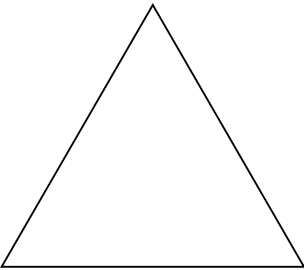
Tmmp | cut 1
40.00 x 34.64 mm



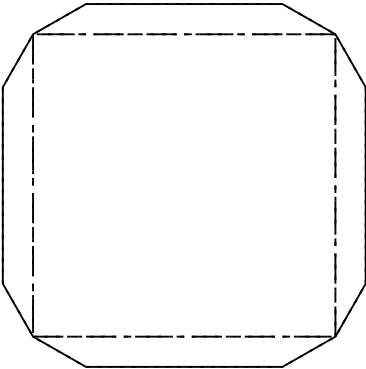
Tmpm | cut 1
40.00 x 34.64 mm



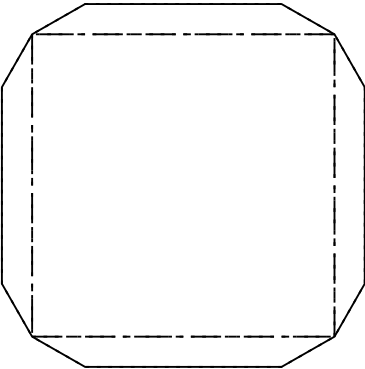
Tmpp | cut 1
40.00 x 34.64 mm



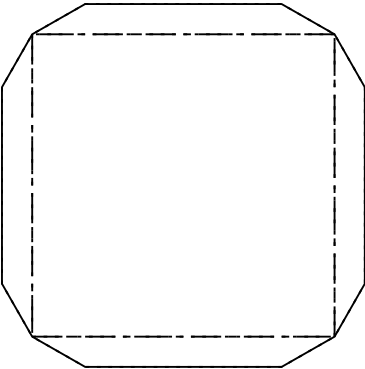
Ym | cut 1
48.00 x 48.00 mm



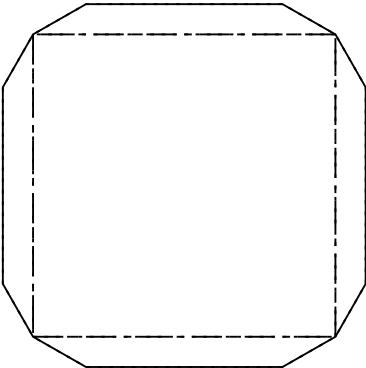
Zp | cut 1
48.00 x 48.00 mm



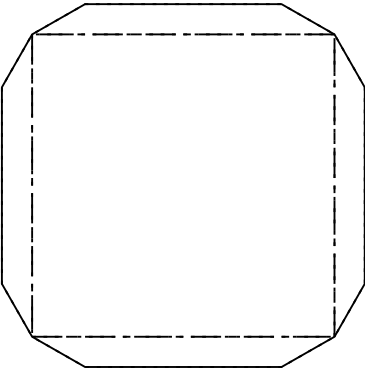
Zm | cut 1
48.00 x 48.00 mm



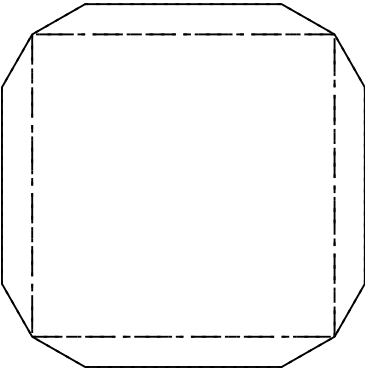
Xp | cut 1
48.00 x 48.00 mm



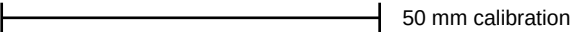
Xm | cut 1
48.00 x 48.00 mm



Yp | cut 1
48.00 x 48.00 mm



Solid: cut | Dashed: valley | Dash-dot: mountain | Dotted: glue



Cuboctahedron

cuboctahedron / 1.0.0 / Letter / Assembly instructions

Finished size: 56.569 x 56.569 x 56.569 mm; shell edges 40 mm

Materials: 160-180 gsm cardstock; Scissors; Ruler; Blunt scoring tool; PVA glue; Long tweezers; Removable low-tack tape

Original construction. Physical printing, cutting and assembly deferred; not physically verified.

Six exact squares, eight exact equilateral triangles, 12 vertices and 24 equal 40 mm shell edges. Triangle altitude 34.641 mm; square diagonal 56.569 mm.

Each square owns four 4 mm deep tabs with 7 mm corner setbacks. The 24 tabs are extra glue flaps, not shell facets. Every tab is included in both its template and its rigid mesh.

Printed side faces outside. Mountain-fold tabs away from the printed side by 54.7356 degrees from flat: interior dihedral 125.2644 degrees. Apply glue to the printed side of tabs; tuck below triangles.

Zero-thickness rigid geometry; tab surfaces coincide with triangle undersides. Paper/glue thickness and springback are not modeled. Keep all 14 shell panels flat.

Use assembly-guide.svg for seam labels (reference only). In the PDF squares have horizontal and vertical edges: bottom/right/top/left refer to the upright PDF page. Transfer the labels before cutting. Glue each square tab only to its named triangle.

Triangle IDs give X/Y/Z signs in that order: p positive, m negative. A triangle joins the three squares indicated by its signs; for example Tmpm joins Xp, Ym and Zp. Triangles are equilateral: orient each to these three neighbors while dry fitting.

Xp tabs bottom/right/top/left: Tppm, Tppp, Tpmp, Tpmm.

Xm tabs bottom/right/top/left: Tmmm, Tmmp, Tmpp, Tmpm.

Yp tabs bottom/right/top/left: Tmpm, Tmpp, Tppp, Tppm.

Ym tabs bottom/right/top/left: Tpmm, Tpmp, Tmmp, Tmmm.

Zp tabs bottom/right/top/left: Tpmp, Tppp, Tmpp, Tmmp.

Zm tabs bottom/right/top/left: Tppm, Tpmm, Tmmm, Tmpm.

Part inventory (cut each instance once):

Xp: Xp square with four tabs

Xm: Xm square with four tabs

Yp: Yp square with four tabs

Ym: Ym square with four tabs

Zp: Zp square with four tabs

Zm: Zm square with four tabs

Tmmm: Tmmm equilateral receiver

Tmmp: Tmmp equilateral receiver

Tmpm: Tmpm equilateral receiver

Tmpp: Tmpp equilateral receiver

Tpmm: Tpmm equilateral receiver

Cuboctahedron

cuboctahedron / 1.0.0 / Letter / Assembly instructions continued

Tpmp: Tpmp equilateral receiver

Tppm: Tppm equilateral receiver

Tppp: Tppp equilateral receiver

1. Print and identify the panels [Xp, Xm, Yp, Ym, Zp, Zm, Tmmm, Tmmp, Tmpm, Tmpp, Tpmm, Tpmp, Tppm, Tppp]: Print at actual size, 100 percent. Measure the 50 mm ruler and a 40 mm shell edge. Transfer the seam labels from the guide or notes to the inside in pencil. Cut 6 tabbed squares and 8 plain triangles; retain all 24 tabs.
2. Score the square tabs [Xp, Xm, Yp, Ym, Zp, Zm]: Score only the four 40 mm tab roots on each square. Mountain-fold each tab 54.736 degrees from flat, away from the printed outside. Tabs are 4 mm deep, with 7 mm corner setbacks; do not crease across square or triangular faces.
3. Build the open bottom bowl [Zm, Tmmm, Tmpm, Tpmm, Tppm]: Place Zm at the bottom, printed face outward/down. Attach its four tabs beneath their labeled lower triangles, matching the full 40 mm edges and both endpoints. Press each 4 mm overlap from the open inside with tweezers; hold until tacky, then let set before adding the walls.
4. Add the four side squares [Xp, Xm, Yp, Ym, Tmmm, Tmmp, Tpmm, Tppm]: Add Xp, Yp, Xm and Ym in that order. Each side square joins two lower triangles using its bottom and left tabs, according to the seam map. Tuck tabs underneath the triangles and align both endpoints. Press from above through the open shell; let these eight joins set. Leave the other side-square tabs free.
5. Complete the upper rim [Xp, Xm, Yp, Ym, Tmmp, Tmpp, Tpmp, Tppp]: Fit each upper triangle between its two signed side squares, joining their remaining labeled tabs. For example Tppp joins Xp and Yp, leaving its Zp edge free. Glue and press the eight overlaps through the central top opening. Keep the four top edges unglued: they form a 40 mm sided square opening for tool access. Let dry.
6. Dry fit the top closure [Zp, Tmmp, Tmpp, Tpmp, Tppp]: Dry fit Zp into the remaining square opening, with all four 4 mm tabs tucked beneath their named upper triangles. Match the guide labels and all four corners; the axis-aligned overall size is 56.569 mm. Remove the cap, adjust its tab folds if needed, and prepare four short pieces of removable tape.
7. Close progressively with access [Zp, Tmmp, Tmpp, Tpmp, Tppp]: Glue only the Zp bottom tab (Tpmp) first; tuck it under Tpmp and hold while the cap is tilted open so tweezers can press inside. After it sets, glue the right and left tabs, lower the cap and press through the still-open top seam. Finally apply a thin film to the top tab (Tmpp), tuck it beneath Tmpp with tweezers and align the last 40 mm edge. Bridge seams with removable tape; gently press the triangle onto its hidden tab from outside, without crushing the shell. Allow full drying per glue instructions before peeling tape away.