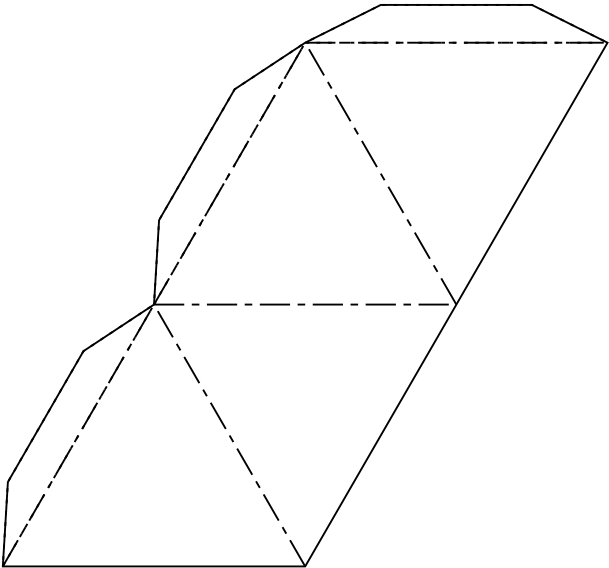


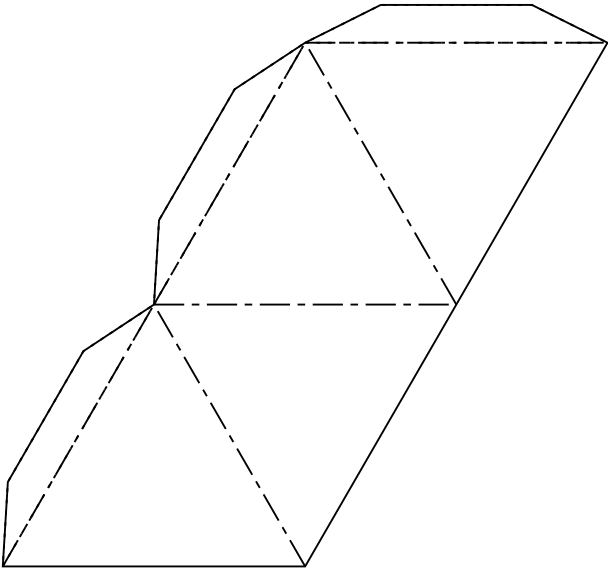
Regular Icosahedron

icosahedron / 1.0.0 / Letter / Template page 1

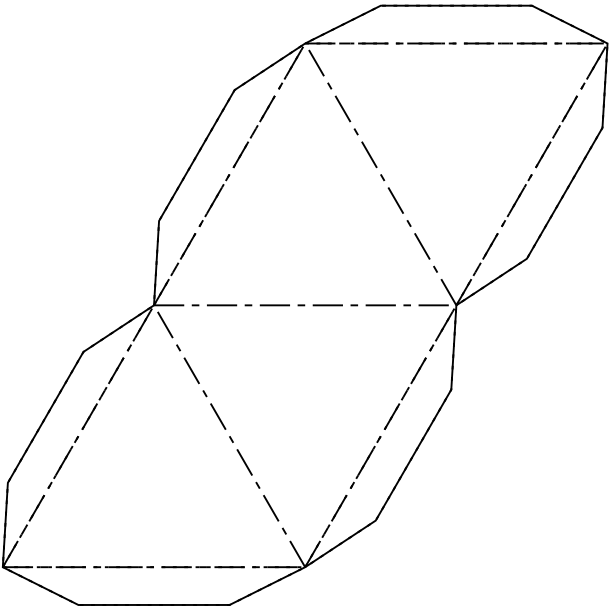
P3 | cut 1
80.00 x 74.28 mm



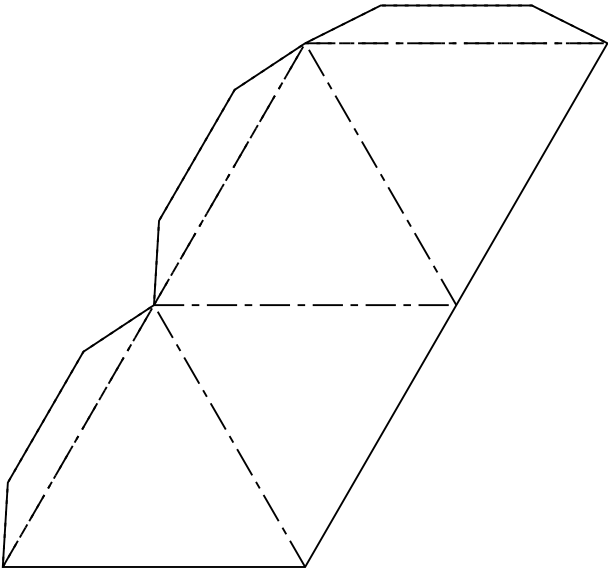
P4 | cut 1
80.00 x 74.28 mm



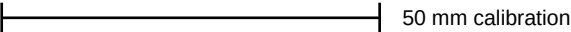
P1 | cut 1
80.00 x 79.28 mm



P2 | cut 1
80.00 x 74.28 mm



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

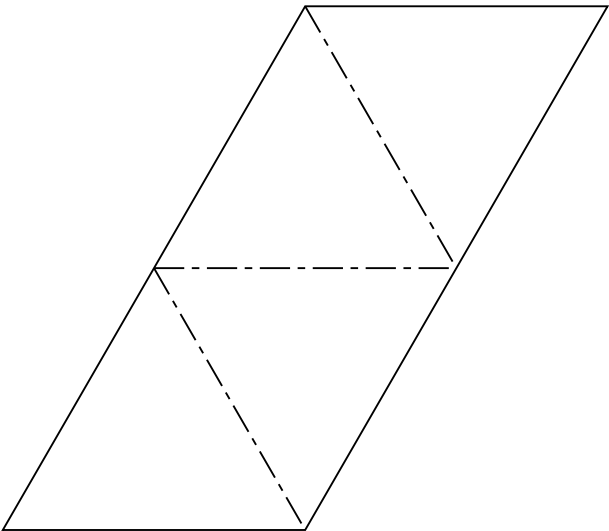


Print at 100% / Actual size. Do not fit to page. Original paper craft template.

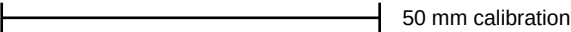
Regular Icosahedron

icosahedron / 1.0.0 / Letter / Template page 2

P5 | cut 1
80.00 x 69.28 mm



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



Print at 100% / Actual size. Do not fit to page. Original paper craft template.

Regular Icosahedron

icosahedron / 1.0.0 / Letter / Assembly instructions

Finished size: 68.05 x 64.72 x 76.08 mm; edge 40 mm

Materials: 160-180 gsm paper; Scissors; Ruler and blunt scoring tool; Pencil; Tacky PVA glue; Blunt craft stick

Original exact regular icosahedron construction: 12 vertices, 30 edges, 20 triangular faces.

Five physical panels; 15 structural hinges; 15 integral 5 mm tabs, one per numbered seam. Seam midpoint table is included in both PDFs.

Zero-thickness idealization: glued tabs coincide with the inside of receiving faces. No paper or glue thickness compensation; no stretching approximation.

Digital shell, edge-length, volume, planar overlap, and receiving-tab checks run on every build. Screen review and physical printing/cutting/assembly remain pending.

Part inventory (cut each instance once):

P1: Four-face panel 1

P2: Four-face panel 2

P3: Four-face panel 3

P4: Four-face panel 4

P5: Four-face panel 5

1. Cut, identify, and score five panels [P1, P2, P3, P4, P5]: Print at 100%; check the 50 mm ruler. Cut P1-P5 once each, keeping every shaded tab. Keep the printed side outside. Before folding, pencil the seam numbers from the following table beside BOTH matching edges. Coordinates are edge midpoints in mm: x right and y up from the lower-left corner of the CUT OUTLINE bounding box, with the piece oriented exactly as printed. Use a ruler; coordinates identify edges, not new cuts. Each panel has four triangles in a chain. Score all dashed folds.

2. Mark seam S01 [P1, P5]: S01: shaded TAB edge midpoint P1 (20.0, 5.0) joins plain RECEIVING edge midpoint P5 (10.0, 17.3). Write this same number beside both edges. Glue is applied to the outside of the 5 mm tab; it will lie under the receiving face.

3. Mark seam S02 [P1, P2]: S02: shaded TAB edge midpoint P1 (10.0, 22.3) joins plain RECEIVING edge midpoint P2 (20.0, 0.0). Write this same number beside both edges. Glue is applied to the outside of the 5 mm tab; it will lie under the receiving face.

4. Mark seam S03 [P2, P3]: S03: shaded TAB edge midpoint P2 (10.0, 17.3) joins plain RECEIVING edge midpoint P3 (20.0, 0.0). Write this same number beside both edges. Glue is applied to the outside of the 5 mm tab; it will lie under the receiving face.

5. Mark seam S04 [P3, P4]: S04: shaded TAB edge midpoint P3 (10.0, 17.3) joins plain RECEIVING edge midpoint P4 (20.0, 0.0). Write this same number beside both edges. Glue is applied to the outside of the 5 mm tab; it will lie under the receiving face.

6. Mark seam S05 [P4, P5]: S05: shaded TAB edge midpoint P4 (10.0, 17.3) joins plain RECEIVING edge midpoint P5 (20.0, 0.0). Write this same number beside both edges. Glue is applied to the outside of the 5 mm tab; it will lie under the receiving face.

7. Mark seam S06 [P1, P5]: S06: shaded TAB edge midpoint P1 (50.0, 22.3) joins plain RECEIVING edge midpoint P5 (30.0, 52.0). Write this same number beside both edges. Glue is applied to the outside of the 5 mm tab; it will lie under the receiving face.

8. Mark seam S07 [P1, P2]: S07: shaded TAB edge midpoint P1 (30.0, 57.0) joins plain RECEIVING edge midpoint P2 (50.0, 17.3). Write this same number beside both edges. Glue is applied to the outside of the 5 mm tab; it will lie under the receiving face.

9. Mark seam S08 [P2, P3]: S08: shaded TAB edge midpoint P2 (30.0, 52.0) joins plain RECEIVING edge midpoint P3 (50.0, 17.3). Write this same number beside both edges. Glue is applied to the outside of the 5 mm tab; it will lie under the receiving face.

Regular Icosahedron

icosahedron / 1.0.0 / Letter / Assembly instructions continued

10. Mark seam S09 [P3, P4]: S09: shaded TAB edge midpoint P3 (30.0, 52.0) joins plain RECEIVING edge midpoint P4 (50.0, 17.3). Write this same number beside both edges. Glue is applied to the outside of the 5 mm tab; it will lie under the receiving face.
11. Mark seam S10 [P4, P5]: S10: shaded TAB edge midpoint P4 (30.0, 52.0) joins plain RECEIVING edge midpoint P5 (50.0, 17.3). Write this same number beside both edges. Glue is applied to the outside of the 5 mm tab; it will lie under the receiving face.
12. Mark seam S11 [P1, P5]: S11: shaded TAB edge midpoint P1 (70.0, 57.0) joins plain RECEIVING edge midpoint P5 (60.0, 69.3). Write this same number beside both edges. Glue is applied to the outside of the 5 mm tab; it will lie under the receiving face. Reserve this seam for the final flap.
13. Mark seam S12 [P1, P2]: S12: shaded TAB edge midpoint P1 (60.0, 74.3) joins plain RECEIVING edge midpoint P2 (70.0, 52.0). Write this same number beside both edges. Glue is applied to the outside of the 5 mm tab; it will lie under the receiving face.
14. Mark seam S13 [P2, P3]: S13: shaded TAB edge midpoint P2 (60.0, 69.3) joins plain RECEIVING edge midpoint P3 (70.0, 52.0). Write this same number beside both edges. Glue is applied to the outside of the 5 mm tab; it will lie under the receiving face.
15. Mark seam S14 [P3, P4]: S14: shaded TAB edge midpoint P3 (60.0, 69.3) joins plain RECEIVING edge midpoint P4 (70.0, 52.0). Write this same number beside both edges. Glue is applied to the outside of the 5 mm tab; it will lie under the receiving face.
16. Mark seam S15 [P4, P5]: S15: shaded TAB edge midpoint P4 (60.0, 69.3) joins plain RECEIVING edge midpoint P5 (70.0, 52.0). Write this same number beside both edges. Glue is applied to the outside of the 5 mm tab; it will lie under the receiving face. Reserve this seam for the final flap.
17. Pre-fold the rigid triangles [P1, P2, P3, P4, P5]: Mountain-fold all structural hinges by 41.81 degrees from flat (138.19 degrees inside). Fold tabs inward to the same angle. Dry fit without glue; never curve or stretch a triangle. On P5, keep the end triangle bounded by S11 and S15 swung open as the access flap.
18. Add panel P2 [P1, P2]: Join seams S02, S07, S12 with P2. Match the numbered edges exactly, tuck each tab under its receiving triangle, and use a thin film of PVA. Press each seam from inside while the shell is open; let each joint grab before continuing. Keep the P5 end flap open even after the upper shell is joined; a blunt craft stick through that opening supports the last upper seams.
19. Add panel P3 [P1, P2, P3]: Join seams S03, S08, S13 with P3. Match the numbered edges exactly, tuck each tab under its receiving triangle, and use a thin film of PVA. Press each seam from inside while the shell is open; let each joint grab before continuing. Keep the P5 end flap open even after the upper shell is joined; a blunt craft stick through that opening supports the last upper seams.
20. Add panel P4 [P1, P2, P3, P4]: Join seams S04, S09, S14 with P4. Match the numbered edges exactly, tuck each tab under its receiving triangle, and use a thin film of PVA. Press each seam from inside while the shell is open; let each joint grab before continuing. Keep the P5 end flap open even after the upper shell is joined; a blunt craft stick through that opening supports the last upper seams.
21. Add panel P5 [P1, P2, P3, P4, P5]: Join seams S01, S05, S06, S10 with P5. Match the numbered edges exactly, tuck each tab under its receiving triangle, and use a thin film of PVA. Press each seam from inside while the shell is open; let each joint grab before continuing. Keep the P5 end flap open even after the upper shell is joined; a blunt craft stick through that opening supports the last upper seams.
22. Close the accessible bottom flap last [P1, P4, P5]: After all other seams dry, dry-fit the P5 flap over receiving tabs S11, S15. With the flap still open, coat those two exposed tab faces lightly with tacky PVA and wait until tacky. Swing the hinged triangle onto both tabs from outside; do not insert a tab into a sealed shell. Support the opposite faces in your palm and lightly burnish both closing edges from outside. Hold until set; do not crush the unsupported flap. Paper thickness and adhesive working time require a physical trial.