Mirror Symmetry: Draw a Glass House Facade

Original tasks 1, 2, 3 / complete keys

Task 1

A facade is 16 cm wide. The centerline is at 8 cm. A left frame line is 2 cm from the centerline. Mark the matching right frame line and state its distance from the right paper edge if the paper is 20 cm wide.

Answer: The right frame line is 2 cm from the centerline on the right, which is 10 cm from the right paper edge.

Reason: Mirror symmetry places the right line at the same distance from the axis. The right edge is 20 minus 8 equals 12 cm from the axis; 12 minus 2 equals 10 cm from the right paper edge.

Check: Measure 2 cm to the right of the centerline and 10 cm from the right paper edge; both marks should coincide.

Task 2

A facade has three panel columns on each side of the centerline. Each panel is 3 cm wide. What is the total facade width?

Answer: 18 cm.

Reason: Three panels per side times 3 cm equals 9 cm per side. Two sides give 18 cm total.

Check: Measure each panel as 3 cm and add: 3 plus 3 plus 3 plus 3 plus 3 plus 3 equals 18 cm.

Task 3

A left panel highlight runs from lower left to upper right. Describe the mirrored highlight on the right panel and state one check to confirm the mirror.

Answer: The right highlight runs from lower right to upper left. Check that the two highlights meet the panel edges at equal heights and equal distances from the centerline.

Reason: Mirroring reverses left and right while keeping heights the same. The diagonal direction reverses accordingly.

Check: Measure the height where each highlight meets the top and bottom edges; the heights should match within your chosen tolerance.

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Original tasks 4 / complete keys

Task 4

A facade is 14 cm high. The sill is 4 cm above the baseline. The header is 10 cm above the baseline. What is the glass panel height, and where is the matching sill on the right side?

Answer: The glass panel height is 6 cm. The right sill is also 4 cm above the baseline.

Reason: Panel height is header minus sill: 10 minus 4 equals 6 cm. Mirror symmetry keeps the sill height the same on both sides.

Check: Measure 4 cm above the baseline on both sides and 10 cm for the header; subtract to confirm 6 cm.

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Source rubric / reflection

- [ ] Centerline is vertical and clearly marked.
- [ ] At least three feature pairs are equidistant from the centerline within the chosen tolerance.
- [ ] Sill and header heights match on left and right.
- [ ] Glass highlight convention is defined and mirrored consistently.
- [ ] Frame double lines have equal gaps on both sides.
- [ ] Final drawing is clean and construction guides are removed or light.

Reflection: What did you check, what did you change, and what will you try next?