Half-Elf Face on Grid Paper: Mirrored Drawing Guide

Original tasks 1, 2, 3 / complete keys

Task 1

A grid axis runs between two center columns. The left mouth corner is 2 cells left of the axis and 7 rows below the top of the head. Where is the right mouth corner?

Answer: 2 cells right of the axis and 7 rows below the top of the head.

Reason: Mirroring changes only the side of the axis; the row number stays the same and the column offset changes sign.

Check: Count 2 cells from the axis on each side and confirm both are on row 7.

Task 2

The left ear attachment is 4 cells left of the axis on the jaw line. The ear tip is 6 cells left of the axis and 3 rows above the attachment. State the mirrored attachment and tip.

Answer: Attachment: 4 cells right of the axis on the jaw line. Tip: 6 cells right of the axis and 3 rows above the attachment.

Reason: Both points are reflected by changing the column side while keeping row relationships.

Check: Count 4 cells and 6 cells from the axis on both sides; confirm the tip is 3 rows above the attachment on each side.

Task 3

A student draws the right eye 4 cells from the axis but the left eye 3 cells from the axis. The stated tolerance is half a cell. Does the drawing pass the symmetry check?

Answer: No. The difference is 1 cell, which exceeds the half-cell tolerance.

Reason: Symmetry requires matching distances within the stated tolerance; 4 minus 3 equals 1 cell.

Check: Subtract the two distances from the axis and compare the result with the tolerance.

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Original tasks 4 / complete keys

Task 4

On a grid with a hypothetical cell size of 1 cm, the left ear tip is 5 cells from the axis. What is the total distance between the two ear tips if symmetry is correct?

Answer: 10 cm.

Reason: Each tip is 5 cells from the axis, so the total is 5 plus 5 equals 10 cells; at 1 cm per cell this is 10 cm.

Check: Measure the actual cell size, multiply the cell count by that value, and compare with the ruler distance between tips.

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Source rubric / reflection

- [ ] Mirror axis is clearly marked and follows the stated even or odd column rule.
- [ ] Feature landmarks are recorded as column offsets and row numbers.
- [ ] Mirrored features match the recorded offsets within the stated tolerance.
- [ ] Half-elf ear has a defined tip position and attachment point that mirror correctly.
- [ ] Symmetry check is shown by counting or measuring from the axis.
- [ ] Valid alternative ear curves are accepted if tip position and attachment mirror correctly.

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