Facade Symmetry Drawing: Axis and Paired Features

Original tasks 1, 2 / complete keys

Task 1

A facade outline is 16 cm wide and 12 cm tall, centered on an axis. Place one pair of windows with centers 4 cm from the axis and 8 cm above the bottom. Place one pair of columns with centers 7 cm from the axis and 1 cm above the bottom. State the left and right positions and check the symmetry.

Answer: Left window center: 4 cm left of axis, height 8 cm. Right window center: 4 cm right of axis, height 8 cm. Left column center: 7 cm left of axis, height 1 cm. Right column center: 7 cm right of axis, height 1 cm. Each pair has equal distances from the axis and equal heights, so the layout is symmetric.

Reason: The outline is centered, so each side is 8 cm from the axis. Pairing by equal distance from the axis and equal height produces mirror positions. The check compares horizontal distances and heights for each pair.

Check: Measure from the axis to each feature center. Confirm left and right distances match for each pair and that paired heights are equal.

Task 2

A facade outline is 24 cm wide and 18 cm tall, centered on an axis. Place two window pairs: pair A centers 5 cm from the axis at height 12 cm; pair B centers 9 cm from the axis at height 6 cm. Place one centered door whose midpoint is on the axis at height 0 cm. Describe the marks and explain how you would check the result.

Answer: Pair A: left center 5 cm left of axis at height 12 cm; right center 5 cm right at height 12 cm. Pair B: left center 9 cm left of axis at height 6 cm; right center 9 cm right at height 6 cm. The door midpoint lies on the axis at the bottom. Check by measuring each pair's horizontal distance from the axis and comparing heights; the door is centered because its midpoint is on the axis.

Reason: Each pair uses the same distance from the axis on both sides and the same height. The centered door is placed by putting its midpoint on the axis. The check uses the same distance and height comparisons plus a midpoint check for the door.

Check: For each window pair, measure left and right distances from the axis and confirm they match; confirm equal heights. For the door, confirm its midpoint lies on the axis.

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Original tasks 3, 4 / complete keys

Task 3

A facade outline is 30 cm wide and 20 cm tall, centered on an axis. Place three column pairs with centers 4 cm, 8 cm, and 12 cm from the axis, all at height 2 cm. Place one window pair with centers 6 cm from the axis at height 14 cm. State the positions and identify one possible valid alternative that still follows a clear pairing rule.

Answer: Column pairs: left and right centers at 4 cm, 8 cm, and 12 cm from the axis, all at height 2 cm. Window pair: left and right centers 6 cm from the axis at height 14 cm. A valid alternative is to use two column pairs instead of three, provided each pair is placed at equal distances from the axis and the same height, and the rule is stated.

Reason: The positions are generated by mirroring each distance from the axis and keeping heights equal within a pair. The alternative is valid because the rubric checks the pairing rule and distances, not a fixed number of columns.

Check: Measure each column pair's distance from the axis and confirm left equals right; confirm all columns share height 2 cm. Check the window pair the same way. For the alternative, confirm the stated rule is followed for every pair.

Task 4

A facade outline is 18 cm wide and 14 cm tall, centered on an axis. Place one window pair with centers 3 cm from the axis at height 9 cm. Place one column pair with centers 6 cm from the axis at height 1 cm. Add a centered decorative circle whose midpoint is on the axis at height 12 cm. Describe the layout and give a check method using a simple distance table.

Answer: Window pair: left center 3 cm left of axis at height 9 cm; right center 3 cm right at height 9 cm. Column pair: left center 6 cm left of axis at height 1 cm; right center 6 cm right at height 1 cm. The circle midpoint is on the axis at height 12 cm. A distance table lists each pair with distance from axis and height; checking means comparing left and right entries and confirming the circle midpoint is on the axis.

Reason: The pairs are placed by equal distance from the axis and equal height. The centered circle is placed by its midpoint on the axis. The distance table makes the symmetry check straightforward and repeatable.

Check: Create a table with columns for feature, left distance, right distance, and height. Confirm left and right distances match for each pair and heights match within a pair. Confirm the circle's midpoint lies on the axis.

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Source rubric / reflection

- [ ] A faint vertical axis is present and used as the reference for paired features.
- [ ] The facade outline is symmetric: left and right widths from the axis match within the stated tolerance.
- [ ] Each paired feature has equal horizontal distance from the axis on both sides.
- [ ] Paired features share the same vertical height within the stated tolerance.
- [ ] Centered features have their midpoint on the axis.
- [ ] A distance table or notes make the layout checkable.
- [ ] Any deliberate variation is stated as a rule, allowing valid alternatives.

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