Draw an Antique Balance Scale with Beam Symmetry and Pan Suspension

Ordinary topic reference / separately checked pixels



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Original worked example / unchanged complete key

Prompt: Construct a balance scale with a beam half-length of 5 cm, drop lines of 3 cm, pan half-width of 3 cm, and base half-width of 4 cm. Describe the construction and the symmetry checks.

Answer: Draw a frame and a vertical central axis. Mark a beam axis at a chosen height. From the beam centre point, mark 5 cm left and 5 cm right along the beam axis for suspension points. Draw 3 cm vertical drop lines from each suspension point. At each lower end, draw a hook and a pan symmetric about its own centre line with half-width 3 cm. Draw a central column from the beam centre to the base, centred on the axis. Draw a base with half-width 4 cm on each side of the axis. Check: left and right beam half-lengths are both 5 cm; drop lengths are both 3 cm; pan half-widths are both 3 cm; base half-widths are both 4 cm. All differences are 0 cm, so the construction is symmetric.