Isometric Furniture Drawing: Chair, Table and Cabinet in Step Views

Original tasks 1, 2 / complete keys

Task 1

Draw a chair in isometric projection. The seat is 3 intervals wide and 3 intervals deep. Seat height is 3 intervals. The back rises 4 intervals above the seat. Use four legs, each 1 interval square, and a back panel 3 intervals wide and 4 intervals high. Show the seat, legs and back panel.

Answer: A correct drawing shows a base box 3 intervals wide, 3 deep and 7 high. The seat is a parallelogram at 3 intervals above the bottom. Four vertical legs rise from the bottom corners to the seat. The back panel sits above the rear seat edge, 3 intervals wide and 4 intervals high, with vertical side edges and a top edge parallel to a 30-degree axis.

Reason: Total height is seat height plus back height, 3 plus 4 equals 7 intervals. The seat and back share the same width, so their side edges align on the same 30-degree axis. Legs are vertical prisms, so their edges stay vertical.

Check: Count intervals: seat width 3, seat depth 3, seat height 3, back height 4. Confirm the back panel top edge is parallel to a 30-degree axis and that all four legs are vertical.

Task 2

Draw a cabinet in isometric projection. The carcass is 5 intervals wide, 2 intervals deep and 6 intervals high. It sits on a plinth 1 interval high. The front face has two doors, each 2 intervals wide and 4 intervals high, starting 1 interval above the plinth. Show the carcass, plinth and door outlines.

Answer: A correct drawing shows a base box 5 intervals wide, 2 deep and 7 high. The plinth occupies the bottom 1 interval. The carcass occupies the remaining 6 intervals. On the front face, two door outlines each 2 intervals wide and 4 intervals high are placed side by side, starting 1 interval above the plinth top. Door edges are parallel to the vertical and 30-degree axes.

Reason: Total height is plinth plus carcass, 1 plus 6 equals 7 intervals. The two doors together span 4 intervals, leaving 1 interval of front face for spacing or frame. Door height 4 plus start height 1 equals 5, leaving 1 interval above the doors within the carcass.

Check: Measure the front face: width 5 intervals, height 6 intervals above the plinth. Confirm each door is 2 by 4 intervals and that the doors start 1 interval above the plinth. Check that all door edges follow the axes.

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Original tasks 3, 4 / complete keys

Task 3

A stool has a square top 2 intervals wide and 2 intervals deep, 2 intervals thick, at a height of 4 intervals to the top surface. It has three legs, each 1 interval square, placed at three corners of the top outline. Draw the stool in isometric projection and state one check you would use.

Answer: A correct drawing shows a base box 2 intervals wide, 2 deep and 4 high. The top occupies the upper 2 intervals, so the underside of the top is at 2 intervals above the bottom face. Three vertical legs rise from three corners of the bottom face to the underside of the top. Each leg is a 1-interval square placed at one of the three chosen corners; it may sit flush with the outer faces or be inset, as long as it stays within the footprint and its edges follow the axes. The fourth corner has no leg. All edges follow the axes.

Reason: The top thickness is 2 intervals, so the underside of the top is at 2 intervals above the bottom. Legs run from the bottom face to that underside. Three legs are sufficient for a stool, and the missing fourth leg is a valid design choice.

Check: Count intervals: top width 2, top depth 2, total height 4, top thickness 2. Confirm the top underside is at 2 intervals above the bottom face. Confirm three legs are vertical and that the top face is a parallelogram with opposite sides parallel.

Task 4

Draw a low table with an inset shelf. The top is 4 intervals wide and 3 deep at a height of 3 intervals. Four corner legs are each 1 interval square. The shelf is 2 intervals wide and 1 deep, centered between the inner leg faces at a height of 1 interval.

Answer: Draw the 4×3 top at height 3. Place 1×1 legs at the four corners. Center the 2×1 shelf between the inner faces of the legs at height 1; its edges meet the inner leg faces without extending through the legs.

Reason: The top footprint leaves $4-2\times1=2$ intervals of clear width between the leg faces and $3-2\times1=1$ interval of clear depth. The shelf dimensions therefore fit the available interior footprint.

Check: Check the shelf is centered, 2×1 intervals, and one interval above the floor. Confirm no shelf edge passes through a leg and all isometric edges follow the same three axes.

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Source rubric / reflection

- [ ] All vertical edges are parallel to the vertical axis.
- [ ] All horizontal edges are parallel to one of the two 30-degree axes.
- [ ] The base box is drawn before legs, backs or details.
- [ ] Proportions match the planned interval counts within one small grid unit.
- [ ] Visible edges are darkened and construction lines are lightened or removed.
- [ ] Valid style alternatives, such as tapered legs or a curved back, are accepted if axis rules and proportions are kept.

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