Isometric Monument Drawing: Axes, Blocks, and Annotated Forms

Original tasks 1, 2 / complete keys

Task 1

Draw a single block 3W by 2D by 2H on an isometric grid. Annotate the axes and state a shading rule.

Answer: A rectangular prism with top face 3 steps along W and 2 along D, vertical edges 2H. Axes labeled H, W, D with ticks. Shading rule stated (for example, left-facing faces shaded).

Reason: The top face uses W and D counts; vertical edges use H. Annotating counts makes the construction checkable.

Check: Count the steps on each axis: 3 along W, 2 along D, 2 along H. Verify that all edges are parallel to an axis and that the shading rule is written.

Task 2

Draw a monument with a base 5W by 4D by 1H and a centered column 2W by 2D by 4H. Annotate all counts.

Answer: Base top face 5W by 4D, drop 1H. Column centered by counting 1.5 steps from each W side (5−2=3, half=1.5) and 1 step from each D side (4−2=2, half=1); draw 2W by 2D top face, drop 4H. Total height 1+4=5 units.

Reason: Centering requires equal counts from opposite edges. The W offset is a half-unit (1.5 steps) and the D offset is a whole unit (1 step); both are permitted because the convention allows whole and simple half-units. Annotate the 1.5-step offsets so the centering is checkable.

Check: Verify base counts 5-4-1 and column counts 2-2-4. Check that the column's corners are equidistant from the base edges by counting steps: 1.5 steps on each W side and 1 step on each D side. Confirm total height 1+4=5 units.

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Original tasks 3, 4 / complete keys

Task 3

Draw a stepped monument: three blocks stacked, each 1 unit smaller in W and D than the one below, starting with 5W by 5D by 1H. State the shading rule.

Answer: Bottom block 5W by 5D by 1H; middle 4W by 4D by 1H centered by counting 0.5 step from each side (5−4=1, half=0.5); top 3W by 3D by 1H centered by counting 0.5 step from each side (4−3=1, half=0.5). Total height 1+1+1=3 units. Shading rule stated.

Reason: Each block is centered by counting 0.5 step from each side, because each upper block is 1 unit smaller in W and D than the one below. State the centering method and the half-step offsets so the construction is checkable.

Check: Count each block's W and D steps: 5, 4, 3. Verify centering by counting equal steps from opposite edges. Check total height 1+1+1=3.

Task 4

Draw a monument with a base 4W by 4D by 1H, a column 1W by 1D by 5H centered, and a cap 2W by 2D by 1H centered on the column. Annotate axes and counts.

Answer: Base 4-4-1; column 1-1-5 centered by counting 1.5 steps from each W side and 1.5 steps from each D side (4−1=3, half=1.5); cap 2-2-1 centered on the column by counting 0.5 step outward from each column edge on both W and D (cap width 2 minus column width 1 = 1, half = 0.5 overhang per side). Total height 1+5+1=7 units. Axes labeled with ticks; shading rule stated.

Reason: The column is centered on the base with 1.5-step offsets on both axes. The cap is wider than the column, so centering the cap means counting 0.5 step outward from the column's top face edges on each side. State the half-step convention.

Check: Verify counts 4-4-1, 1-1-5, 2-2-1. Check total height 1+5+1=7. Confirm the column is centered by counting 1.5 steps from each base edge, and the cap is centered by counting 0.5 step from each column edge.

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Source rubric / reflection

- [ ] Axes are drawn at 30 degrees and labeled H, W, and D with unit ticks.
- [ ] Every block edge is parallel to one of the three axes.
- [ ] Block dimensions are annotated with consistent unit counts.
- [ ] Stacked blocks are centered by counted steps, not by eye.
- [ ] A shading rule is stated and applied consistently; valid alternatives are accepted.
- [ ] Dimension labels are legible, consistently sized, and placed next to each block's top face without crossing construction lines.

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