Shelter Drawing: Front and Side Views with Roof and Door

Original tasks 1, 2 / complete keys

Task 1

Draw a front view of a shelter 5 units wide and 3 units tall to the eaves, with a flat roof and a door 1 unit wide and 2 units tall centered on the wall. Use one grid square per unit. Describe the drawing and check the door placement.

Answer: Front view: a 5 by 3 rectangle for the wall, a horizontal line above the eaves for the flat roof, and a 1 by 2 door centered on the wall with its bottom on the ground line. The door center is 2.5 units from either side.

Reason: The wall width is 5, so the center is at 2.5 units. The door width is 1, so it spans from 2 to 3 units. The door height is 2, less than the wall height 3.

Check: Measure from each side to the door center; both distances should be 2.5 units. Confirm the door bottom touches the ground line and the door height is 2 units.

Task 2

Draw a side view of a shelter 4 units deep and 3 units tall to the eaves, with a gable roof rising 2 units above the eaves. The ridge runs front-to-back. The door is on the front wall. Describe the drawing and check the roof peak position.

Answer: Side view: a 4 by 3 wall rectangle. The ridge runs across the complete 4-unit depth as a horizontal line 2 units above the eaves, at total height 5. Connect its endpoints vertically to the eaves endpoints. There is no single peak at the depth midpoint in this side projection. Show the front-wall door as a vertical edge at the front end; its height is not given by this task and must be stated as a chosen example if drawn.

Reason: A front-to-back ridge varies along the depth coordinate. The side projection retains depth and height, so the two ridge endpoints remain separated by 4 units and share height 3 + 2 = 5; they do not collapse into one point.

Check: Confirm the wall depth 4 and eaves height 3. Check both ridge endpoints are at height 5, their horizontal separation is 4, and the ridge is level. The front-wall door edge stays at the front end; no unstated door height is treated as a given.

Shelter Drawing: Front and Side Views with Roof and Door

Original tasks 3, 4 / complete keys

Task 3

A shelter is 6 units wide, 4 units deep, and 3 units tall to the eaves. The roof rises 2 units. The door is 1 unit wide and 2 units tall, offset 1 unit from the left side of the front wall. Draw both views and check the door offset.

Answer: Front view: 6 by 3 wall, gable base 6 and rise 2, with a 1 by 2 door whose left edge is 1 unit from the left wall edge. Side view: 4 by 3 wall and a 4 by 2 rectangular roof profile above the eaves, with level ridge at total height 5. The door edge remains at the front end and is 2 units tall. Its 1-unit front-view offset is widthwise and disappears in the side projection.

Reason: The door spans front-view $x = 1$ to $x = 2$. Side projection suppresses x, retaining front-to-back depth and height. Thus the door still projects at the front end, while the full ridge depth remains visible.

Check: Check door left edge at 1, width 1 and height 2 in front view. In side view check door edge height 2 at the front end, eaves height 3 and horizontal ridge height 5 over depth 4.

Task 4

Draw a front view of a shelter 7 units wide and 4 units tall to the eaves, with a gable roof rising 3 units. The door is 2 units wide and 3 units tall, centered on the wall. Check the areas of the wall, door, and roof.

Answer: Front view: 7 by 4 wall, gable roof with base 7 and peak 3 units above the eaves, door 2 by 3 centered on the wall with its bottom on the ground line. Wall area 28, door area 6, roof area 10.5.

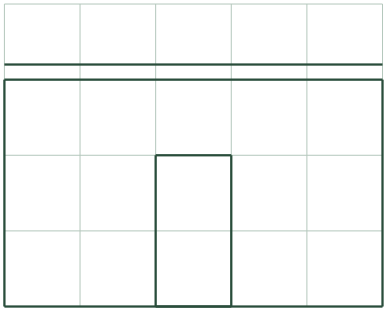
Reason: Wall area is 7 times 4 equals 28. Door area is 2 times 3 equals 6. Roof area is half of 7 times 3 equals 10.5. The door center is at 3.5 units from either side.

Check: Measure the door center from each side; both distances should be 3.5 units. Confirm the door height 3 is less than the wall height 4. Recalculate areas to confirm 28, 6, and 10.5 square units.

Shelter Drawing: Front and Side Views with Roof and Door

Task 1 / answers

Shelter orthographic diagrams / one grid unit = chosen 10 mm, printed 1:1



FRONT

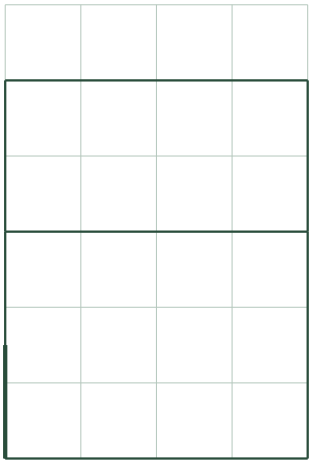
Flat cap +0.2 unit chosen thickness

Walls at eaves 3 units; ridge height 3. Flat roof cap is an illustrative thickness; wall height stays 3. Door: 1 by 2, left edge 2 units.

Shelter Drawing: Front and Side Views with Roof and Door

Task 2 / answers

Shelter orthographic diagrams / one grid unit = chosen 10 mm, printed 1:1



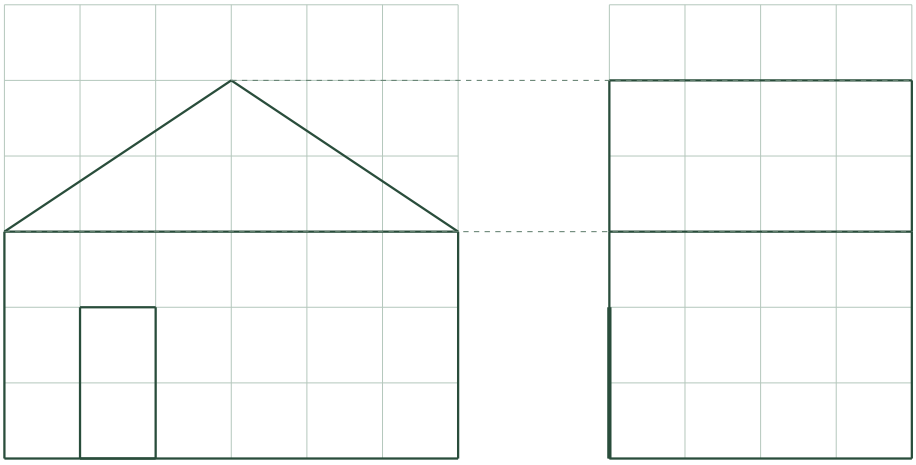
SIDE / front end is left

Walls at eaves 3 units; ridge height 5. Front gable is triangular; side projection preserves the full level ridge length, not a midpoint peak. Task 2 door height is unspecified: this edge uses a declared chosen 1.5-unit example.

Shelter Drawing: Front and Side Views with Roof and Door

Task 3 / answers

Shelter orthographic diagrams / one grid unit = chosen 10 mm, printed 1:1



FRONT

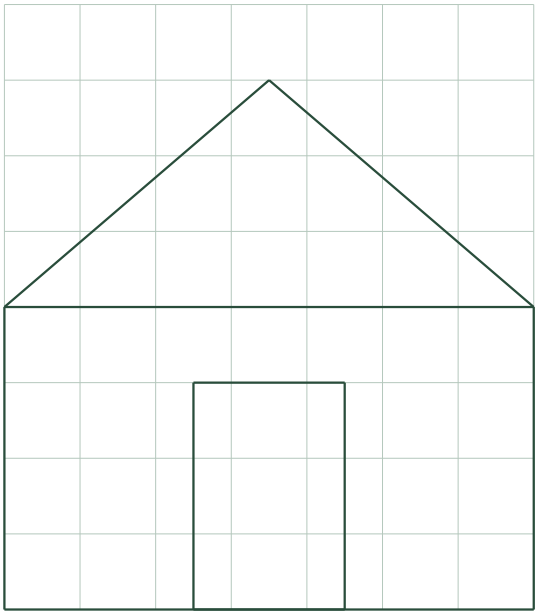
SIDE / front end is left

Walls at eaves 3 units; ridge height 5. Front gable is triangular; side projection preserves the full level ridge length, not a midpoint peak. Door: 1 by 2, left edge 1 units.

Shelter Drawing: Front and Side Views with Roof and Door

Task 4 / answers

Shelter orthographic diagrams / one grid unit = chosen 10 mm, printed 1:1



FRONT

Walls at eaves 4 units; ridge height 7. Front gable is triangular; side projection preserves the full level ridge length, not a midpoint peak. Door: 2 by 3, left edge 2.5 units.

Shelter Drawing: Front and Side Views with Roof and Door

Source rubric / reflection

- [ ] Front view shows a wall rectangle with the stated width and height.
- [ ] Front view roof base equals the wall width and the peak is centered.
- [ ] Door is a rectangle with the stated width and height, bottom on the ground line.
- [ ] Side view shows a wall rectangle with the stated depth and height.
- [ ] Side view roof retains a horizontal ridge across the full depth at ridge height, with vertical roof ends above the eaves; the front-to-back ridge does not collapse to one midpoint peak in the side projection.
- [ ] Door edge appears in the side view as a vertical line at the front edge with matching height.
- [ ] Heights align across both views on the same ground line.
- [ ] Dimensions are checkable with simple arithmetic and consistent units.
- [ ] Valid alternatives (flat roof, offset door) are allowed if stated and consistent.

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