Draw a Hut: Roof and Wall Construction

Original tasks 1, 2, 3 / complete keys

Task 1

Front view: wall width 6 units, wall height 1.5 units, roof rise 1.5 units, overhang 0.5 units per side. Find roof span and ridge position.

Answer: Roof span = 6 + 0.5 + 0.5 = 7 units. Ridge is at 3.5 units from either span end, 1.5 units above wall top.

Reason: Span adds wall width and two overhangs. Ridge is at span midpoint.

Check: Verify 6 + 0.5 + 0.5 = 7 and 7 ÷ 2 = 3.5.

Task 2

Three-quarter view: wall width 5 units, wall height 1 unit, roof rise 1 unit, overhang 0.25 units per side. State the roof base length and wall-top corner offsets.

Answer: Roof base length = 5 + 0.25 + 0.25 = 5.5 units. Each wall-top corner is 0.25 units inside the roof base end.

Reason: Overhang offsets are measured from wall-top corners to roof ends.

Check: Confirm 5 + 0.25 + 0.25 = 5.5 and offsets are equal.

Task 3

A hut has wall width 4 units and roof span 5 units with equal overhangs. Find each overhang and the ridge position from a span end.

Answer: Total overhang = 5 − 4 = 1 unit, so each overhang = 0.5 units. Ridge is at 2.5 units from either span end.

Reason: Subtract wall width from span, divide by two for equal overhangs. Ridge is span midpoint.

Check: Check 4 + 0.5 + 0.5 = 5 and 5 ÷ 2 = 2.5.

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Original tasks 4 / complete keys

Task 4

Front view: wall width 3 units, wall height 1 unit, roof rise 1 unit, overhang 0.5 units per side. Find roof span, ridge height above baseline, and each slope run.

Answer: Roof span = 3 + 0.5 + 0.5 = 4 units. Ridge height above baseline = 1 + 1 = 2 units. Each slope runs 2 units horizontally and 1 unit vertically.

Reason: Span adds overhangs. Ridge height adds wall height and rise. Slope run is half span.

Check: Verify 3 + 0.5 + 0.5 = 4, 1 + 1 = 2, and 4 ÷ 2 = 2.

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Source rubric / reflection

- [ ] Baseline and wall top are parallel and separated by the stated wall height.
- [ ] Wall width matches the stated proportion and opposite sides are equal.
- [ ] Ridge is centered over the wall width.
- [ ] Roof span equals wall width plus two overhangs.
- [ ] Both roof slopes have equal horizontal and vertical runs.
- [ ] Overhang is equal on both sides.
- [ ] Midline is used consistently for proportion checks.
- [ ] Two-angle drawings use the same unit values.
- [ ] Valid alternative styles are accepted if geometry checks pass.

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