Draw a Dog House: Structure and Perspective

Original tasks 1, 2 / complete keys

Task 1

Draw a dog house with a front face 8 units wide and 5 units high, a side depth of 4 units, and a gable roof with a 1.5-unit rise above the front wall. Place the ridge at the midpoint of the top edges. Add a centered rectangular entrance 3 units wide and 3 units high. Use one-point perspective with the vanishing point on the horizon. Describe the needed diagram in words: front rectangle 8 by 5, side face projected with D=4, ridge connecting midpoints, entrance centered.

Answer: Front face 8 by 5. Put VP=(16,2.5). Rays from (8,0) and (8,5) reach the halfway rear edge at x=12, y=1.25 and y=3.75; join these points vertically to form the projected side. Use a front gable peak at (4,6.5), 1.5 units above the 5-unit wall, and extend the ridge toward VP. Center the 3-by-3 entrance at x=2.5–5.5, y=0–3. The side top and bottom recede; the rear edge stays vertical.

Reason: The front ratio is 8/5=1.6. The entrance margins are (8−3)/2=2.5 on each side, with 2 units between its top and wall top. The rear edge coordinates come from halfway along each ray toward VP.

Check: Confirm the front rectangle is 8 by5, VP is (16,2.5), rear edge is x=12 from y=1.25 to3.75, front gable peak is at (4,6.5), entrance margins are both 2.5, and both side rays meet VP.

Task 2

Draw a dog house with a front face 7 units wide and 4 units high, a side depth of 3 units, and a gable roof with a 1.5-unit rise and a centered ridge. Add a centered arched entrance 2 units wide and 2.5 units high. Use one-point perspective. Describe the needed diagram in words: front rectangle 7 by 4, side face projected with D=3, ridge connecting midpoints, arched entrance centered.

Answer: Front face 7 by 4. Put VP=(13,2). Rays from (7,0) and (7,4) reach the halfway rear edge at x=10, y=1 and y=3. Join them vertically. Center the 2-by-2.5 arched entrance at x=2.5–4.5, with its bottom at y=0; keep the arch symmetric. Put the front gable peak at (3.5,5.5), 1.5 units above the 4-unit wall, and extend the ridge toward VP. The side is a projected quadrilateral, and its receding edges converge to VP.

Reason: The front ratio is 7/4=1.75. Entrance side margins are (7−2)/2=2.5; its height is 2.5/4=0.625 of wall height, and 1.5 units remain below the opening.

Check: Check VP=(13,2), rear edge x=10 from y=1 to3, equal 2.5-unit entrance side margins, a symmetric arch, and receding edges that meet at VP.

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Original tasks 3, 4 / complete keys

Task 3

Draw a dog house with a front face 6 units wide and 4 units high, a side depth of 2 units, and a gable roof. Place the ridge at the midpoint. Add a centered rectangular entrance 2 units wide and 2 units high. Use one-point perspective. Then check the roof height: if the roof rise above the eaves is 1.5 units, is it within the guideline of one third to one half of the wall height? Describe the needed diagram in words.

Answer: Front face 6 by 4. Put VP=(10,2). The halfway rear edge is at x=8, y=1 to3. Draw the side top and bottom from the front-right corners to VP and close them with that vertical edge. Center the 2-by-2 entrance at x=2–4. Put the gable peak at x=3 and use a roof rise of 1.5 units; its ratio to wall height is 1.5/4=0.375, within the stated one-third-to-one-half drawing guide. Extend the ridge toward VP.

Reason: A 1.5-unit roof rise divided by 4-unit wall height is 0.375, between one third and one half. The entrance is centered and its side margins are 2 units.

Check: Verify the side construction uses VP=(10,2) and rear edge x=8 from y=1 to3. Compute 1.5/4=0.375 and check entrance margins and ridge direction.

Task 4

Draw a dog house with a front face 9 units wide and 5 units high, a side depth of 4 units, and a gable roof with a 1.75-unit rise and a centered ridge. Add a centered rounded-top entrance 3 units wide and 3.5 units high. Use one-point perspective. Check the entrance height: is it within two thirds of the wall height? Describe the needed diagram in words.

Answer: Front face 9 by 5. Put VP=(17,2.5). Rays from (9,0) and (9,5) reach the halfway rear edge at x=13, y=1.25 and y=3.75. Join them vertically. Center the 3-by-3.5 rounded-top entrance at x=3–6, y=0–3.5; its height ratio is 3.5/5=0.7, above the two-thirds guide. Reduce it to 3 units high if you want to meet that guide. Put the front gable peak at (4.5,6.75), 1.75 units above the 5-unit wall, and extend the ridge toward VP.

Reason: The opening width is 3/9=1/3 of the front width, while its height 3.5/5=0.7 exceeds two thirds. The suggested 3-unit revision gives a ratio of0.6 and keeps it centered.

Check: Check VP=(17,2.5), rear edge x=13 from y=1.25 to3.75, front gable peak is at (4.5,6.75), equal 3-unit opening margins, and compare 3.5/5=0.7 with two thirds; after correction verify 3/5=0.6.

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Source rubric / reflection

- [ ] Body is a clear rectangular box with front and side faces sharing a vertical edge.
- [ ] Front roof peak is centered and the ridge recedes toward the same vanishing point as the side face.
- [ ] Front roof slopes mirror across the gable centerline; entrance is centered and leaves the stated margins.
- [ ] One-point projection is consistent: front edges stay horizontal/vertical, side top/bottom and ridge recede to the vanishing point, and rear vertical edges stay vertical.
- [ ] Proportions are consistent: front width-to-height ratio between 1.5:1 and 2:1; roof height one third to one half of wall height.
- [ ] Line quality is clean: final edges are firm, construction lines are light, and parallel edges stay parallel.
- [ ] Entrance alternatives such as a rectangle, arch, or rounded top are acceptable if centered and within the stated margins.

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