Drawing a Restaurant Facade: Signage and Seating Layout

Original tasks 1, 2, 3 / complete keys

Task 1

At 1 cm = 1 m, draw a facade 7 cm wide and 3.5 cm high. Place a sign band from 2.2 cm to 2.8 cm above the baseline and a door 1.6 cm wide and 2.1 cm high. State the gap between the door top and the sign band bottom.

Answer: The door top is at 2.1 cm. The sign band bottom is at 2.2 cm, so the gap is 2.2 minus 2.1 = 0.1 cm.

Reason: Subtract the door height from the band bottom height. A positive result is the clear gap; a negative result would mean overlap, so the band would need to be raised.

Check: Measure the door height and band bottom on the drawing and subtract; the result should be positive and match 0.1 cm at the stated scale.

Task 2

At 1 cm = 1 m, place three table circles of 0.8 cm diameter in a row with 0.9 cm gaps between edges. What total width do they occupy?

Answer: Three tables occupy 3 times 0.8 cm = 2.4 cm. Two gaps occupy 2 times 0.9 cm = 1.8 cm. Total width is 2.4 + 1.8 = 4.2 cm.

Reason: Add the table diameters and the gaps between them.

Check: Measure the row on the drawing; it should be about 4.2 cm wide at the stated scale.

Task 3

A sign band is 5 cm wide. You want six letters with equal spacing and a 0.2 cm margin on each side. What is the available width for letters and gaps, and what is one possible letter width if gaps are 0.1 cm?

Answer: Available width is 5 minus 0.2 minus 0.2 = 4.6 cm. Five gaps of 0.1 cm use 0.5 cm, leaving 4.1 cm for six letters, so each letter is about 0.68 cm wide.

Reason: Subtract margins, subtract total gap width, then divide by the number of letters.

Check: Add margins, gaps, and letter widths back together; the total should equal 5 cm.

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Original tasks 4 / complete keys

Task 4

At 1 cm = 1 m, a seating area is 3 cm wide. You place two tables of 0.8 cm diameter with a 0.9 cm gap between them and a 0.5 cm gap to each edge. Does it fit? Show the arithmetic.

Answer: Total width is 0.5 + 0.8 + 0.9 + 0.8 + 0.5 = 3.5 cm. This exceeds 3 cm, so it does not fit. One fix: keep both edge gaps at 0.5 cm and reduce the gap between tables to 0.4 cm, giving 0.5 + 0.8 + 0.4 + 0.8 + 0.5 = 3.0 cm, which fits exactly. Another fix: use one table with 0.5 cm edge gaps, giving 0.5 + 0.8 + 0.5 = 1.8 cm, which fits with room to spare.

Reason: Add all horizontal elements and compare with the available width.

Check: Measure the seating row on the drawing and compare with the 3 cm area width.

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Source rubric / reflection

- [ ] Facade rectangle is drawn with a labeled baseline and a stated scale.
- [ ] Sign band is placed above the door with a measurable gap.
- [ ] Lettering uses a consistent cap-height guide or a clearly stated alternative convention.
- [ ] Entrance path is clear and measurable.
- [ ] Seating includes at least two tables and chairs with a measurable walking gap.
- [ ] Line weights distinguish outline from construction guides.
- [ ] Labels are short and placed outside the main drawing area.

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