Cityscape Drawing: Skyline Blocks and Street Depth

Original task 1 / complete key

Task 1

A paper is 16 cm wide and 24 cm tall. You place the horizon at 12 cm from the bottom and use a block width unit of 2 cm. Draw a far row of three blocks with widths 2, 4, and 2 cm, and a middle row of two blocks with widths 4 and 2 cm that overlap the far row. State the total width used by the far row and whether it fits inside the paper width with a 1 cm margin on each side.

Answer: Far row total width is 2 + 4 + 2 = 8 cm. With 1 cm margins on each side, the usable width is 16 - 2 = 14 cm. The far row fits because 8 cm is less than 14 cm.

Reason: Add the far block widths, then subtract both margins from the paper width. Compare the two values in the same unit.

Check: Re-add the widths and re-subtract the margins; confirm both results are in centimetres and that 8 is less than 14.

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Original task 2 / complete key

Task 2

A street has five streetlights along one curb. The nearest is drawn 2 cm tall and each farther light is 0.3 cm shorter than the one before it. List the five heights and state whether the last light is still taller than 0.5 cm.

Answer: Heights are 2.0, 1.7, 1.4, 1.1, and 0.8 cm. The last light is 0.8 cm, which is taller than 0.5 cm.

Reason: Subtract 0.3 cm repeatedly from 2.0 cm for five lights, then compare the final value with 0.5 cm.

Check: Add 0.3 cm back four times from 0.8 cm to recover 2.0 cm, confirming the sequence is consistent.

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Original task 3 / complete key

Task 3

A crosswalk has stripe gaps of 1.2 cm near the bottom and 0.4 cm near the horizon, with four gaps in total. The gaps decrease by equal amounts. What is the decrease per gap, and what are the four gap values?

Answer: The total decrease is 1.2 - 0.4 = 0.8 cm over three steps, so the decrease per gap is 0.8 / 3, which is about 0.27 cm. The four gaps are approximately 1.20, 0.93, 0.67, and 0.40 cm.

Reason: Four gaps have three decreases between them. Divide the total decrease by three, then subtract repeatedly from the first gap.

Check: Subtract the four gap values in order and confirm each difference is about 0.27 cm, and that the last value is 0.40 cm.

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Original task 4 / complete key

Task 4

You draw a near block 6 cm wide and a far block 2 cm wide on the same street. The near block overlaps the far block by 1 cm. State the visible width of the far block and explain which depth cue the overlap provides.

Answer: The visible width of the far block is 2 - 1 = 1 cm. The overlap provides the overlap depth cue, showing that the near block is in front of the far block.

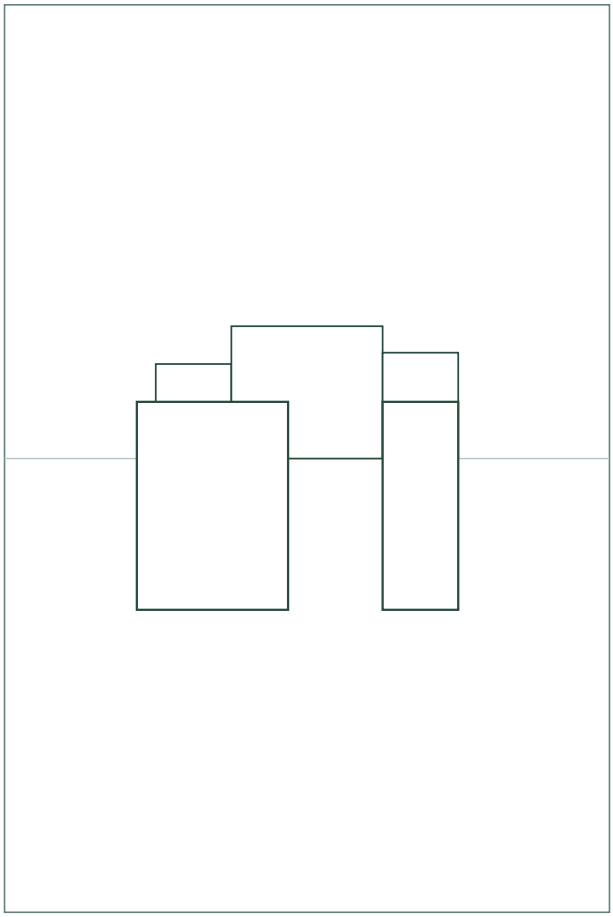
Reason: Subtract the overlapped amount from the far block width. Identify overlap as the cue that establishes front-to-back order.

Check: Add the visible width and the overlap back together to recover 2 cm, and confirm the near block is drawn larger and in front.

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Task 1 / answers

City depth and construction / actual given quantities; all extra heights are selected examples



This construction prints at 1:2. Far widths and horizon are from the original worked/task values; unspecified block heights are selected diagram choices. Worked: three far blocks, two middle blocks, one near block on each side; five lights and narrowing crosswalk gaps agree with the leftward street. Task 1: 80 mm total far width fits inside 140 mm live width.

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Task 2 / answers

City depth and construction / actual given quantities; all extra heights are selected examples



2.0, 1.7, 1.4, 1.1, 0.8 cm. Four decreases of 0.3 cm. The final light is 0.8 cm > 0.5 cm. Spacing between posts is a selected schematic choice, not measured street distance.

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Task 3 / answers

City depth and construction / actual given quantities; all extra heights are selected examples

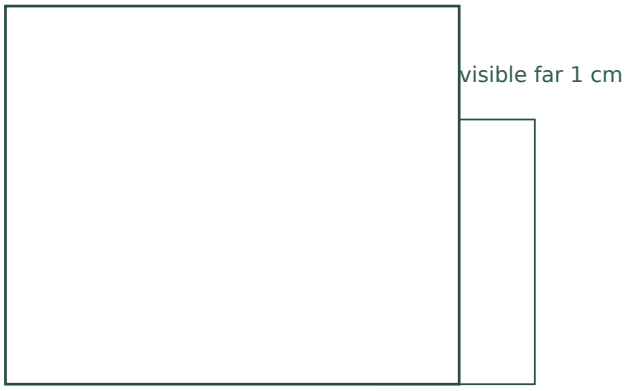


Four gaps contain three decreases: (1.2 - 0.4) / 3 = 0.2666... cm each. Displayed text rounds each exact program spacing; it does not repeatedly subtract a rounded 0.27. The physical gaps are 12, 28/3, 20/3, 4 mm.

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Task 4 / answers

City depth and construction / actual given quantities; all extra heights are selected examples



The far block begins at x=50 mm and ends at x=70 mm. The front block ends at x=60 mm, hiding 10 mm and leaving x=60..70 visible. 20 - 10 = 10 mm = 1 cm. Heights are diagram choices.

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Source rubric / reflection

- [ ] Skyline reads as at least three overlapping layers: far, middle, and near blocks.
- [ ] Block edges follow the stated convention: vertical side edges and horizontal top edges.
- [ ] Street narrows toward the horizon and at least three depth cues agree with the street direction.
- [ ] Nearer blocks overlap farther blocks, and nearer edges are darker than far edges.
- [ ] Windows stay inside block faces and do not break the rectangular prism reading.
- [ ] The drawing reads as a cityscape with a street, not a single building or a rural scene.
- [ ] Valid alternatives are accepted: block counts within the stated ranges, varied heights with a visible reason, and any three agreeing street cues.

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