Draw Realistic Snake Scales: Overlapping Rows and Tattoo Layout

Original tasks 1, 2, 3 / complete keys

Task 1

A straight body section is 80 mm long. Dorsal scales are 5 mm wide and belly scales are 10 mm wide (hypothetical). How many scales fit in one dorsal row and one belly row, and which row has fewer?

Answer: Dorsal: 80 ÷ 5 = 16 scales. Belly: 80 ÷ 10 = 8 scales. The belly row has fewer scales.

Reason: Divide the section length by each scale width using the same unit. Wider scales produce fewer scales over the same length.

Check: Multiply the number of scales by the scale width: 16 × 5 = 80 mm and 8 × 10 = 80 mm. Both match the section length.

Task 2

You draw a row of 12 flank scales, each 7 mm wide (hypothetical), along a curve. What total length does the row cover? If the curve is 90 mm long, how much length remains uncovered?

Answer: Row length: 12 × 7 = 84 mm. Remaining length: 90 − 84 = 6 mm.

Reason: Multiply the number of scales by the width of one scale, then subtract from the curve length.

Check: Add the remaining length to the row length: 84 + 6 = 90 mm, matching the curve length.

Task 3

A tattoo layout box is 60 mm wide. You plan three bands: dorsal 20 mm, flank 25 mm, belly 15 mm. Do the bands fit inside the box, and how much margin remains if you center them?

Answer: Total band width: 20 + 25 + 15 = 60 mm. The bands exactly fill the box, leaving 0 mm margin. To keep a margin, reduce one band or enlarge the box.

Reason: Add the band widths and compare with the box width. A positive difference is the available margin.

Check: Re-add the bands: 20 + 25 + 15 = 60 mm, equal to the box width, confirming no margin.

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Original tasks 4 / complete keys

Task 4

In a dorsal row you count 18 scales over 72 mm. In a belly row you count 9 scales over the same 72 mm. What are the average scale widths, and does the size progression follow the convention?

Answer: Dorsal average width: 72 ÷ 18 = 4 mm. Belly average width: 72 ÷ 9 = 8 mm. The belly scales are wider, so the progression follows the convention.

Reason: Divide the same length by each count to find average width. Compare the two averages to check the dorsal-to-belly size increase.

Check: Multiply back: 18 × 4 = 72 mm and 9 × 8 = 72 mm. Both match the row length.

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Source rubric / reflection

- [ ] Overlap direction is consistent: front edges overlap the scale ahead in every row.
- [ ] Three bands are present and distinguishable: dorsal, flank, belly.
- [ ] Scale size increases gradually from dorsal to belly; no random mixing.
- [ ] Rows follow the body curve rather than running straight across.
- [ ] Tattoo layout has a clean margin and readable band structure.
- [ ] Valid alternatives (sharper or rounder shapes, uneven spacing) are accepted if consistency and readability remain.

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