Realistic Phoenix Drawing: Feather Anatomy and Shading

Original tasks 1, 2, 3, 4 / complete keys

Task 1

A wing has 3 covert feathers, 5 secondaries, and 4 primaries. How many wing feathers are drawn in total?

Answer: 12 feathers.

Reason: Count coverts as 3, secondaries as 5, and primaries as 4; 3 + 5 + 4 = 12.

Check: Recount each layer separately and add the three numbers once.

Task 2

On 20 cm paper, a 2 mm overlap band is used. If 6 overlap edges are shaded, what total band length is shaded along those edges?

Answer: 12 mm total.

Reason: Each band is 2 mm; 6 bands × 2 mm = 12 mm.

Check: Multiply band width by number of edges and confirm units are millimetres.

Task 3

A tail fan has a longest plume of 9 cm. What is the maximum allowed length of a shorter plume if variation stays within one third of the longest?

Answer: 6 cm minimum, so shorter plumes must be at least 6 cm.

Reason: One third of 9 cm is 3 cm; 9 cm − 3 cm = 6 cm.

Check: Subtract one third of the longest length and compare each shorter plume to that minimum.

Task 4

You draw 7 tail plumes with overlap order: center on top, then alternating left and right beneath. If the center plume is number 1, how many plumes are beneath it?

Answer: 6 plumes.

Reason: Total plumes 7 minus the top center plume 1 equals 6 beneath.

Check: Count plumes not numbered 1 and confirm the total returns to 7.

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Source rubric / reflection

- [ ] Wing shows coverts, secondaries, and primaries in layered order.
- [ ] Each feather has a shaft that stops before the tip and two vanes.
- [ ] Stroke direction is consistent and mirrored across wings.
- [ ] Three values are used, with darkest band at overlap edges.
- [ ] Tail plumes vary in length within one third of the longest and have clear overlap order.
- [ ] Body contour feathers point toward the tail.
- [ ] Valid alternative conventions are accepted if consistency and overlap clarity are maintained.

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