Mermaid Drawing Base: Torso and Tail Guides

Original tasks 1, 2, 3 / complete keys

Task 1

On paper, mark a shoulder line and a waist line 8 cm apart. Divide the x-height into three equal parts. State the chest and waist positions in centimeters measured downward from the shoulder line.

Answer: Chest at about 2.67 cm below the shoulder; waist at 8 cm below the shoulder (the bottom of the x-height).

Reason: Eight centimeters divided by three gives 2.67 cm per part. The chest guide is one part down from the shoulder, and the waist is three parts down.

Check: Add the three parts: 2.67 + 2.67 + 2.67 = 8.01 cm, which rounds to 8 cm within 0.01 cm.

Task 2

A base has an x-height of 5 cm and a tail length of 3 times the x-height. The hip line is one part below the waist. Calculate the tail length and the hip line distance below the waist.

Answer: Tail length is 15 cm. Hip line is about 1.67 cm below the waist.

Reason: Tail length equals 3 times 5 cm, which is 15 cm. One part of the x-height is 5 cm divided by 3, about 1.67 cm.

Check: Multiply 1.67 cm by 3 to get 5.01 cm, which rounds to 5 cm within 0.01 cm.

Task 3

Describe how to check that the left and right transition curves are mirror images at the hip line. Use a hypothetical tolerance of 0.2 cm.

Answer: Measure the horizontal distance from the center line to each transition curve at the hip line. If the two distances differ by 0.2 cm or less, treat them as matching.

Reason: Symmetry at the transition keeps the tail centered and avoids a lopsided base. A small tolerance allows for hand-drawing variation.

Check: Subtract the smaller distance from the larger; the result should be 0.2 cm or less.

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Original tasks 4 / complete keys

Task 4

A learner draws a tail with a sharp bend halfway along its length. Suggest a fix and a check method using short ruler segments.

Answer: Redraw the tail as a light center curve with gradual direction changes, then draw parallel edges. Check by placing a ruler along short segments; the angle should change gradually, not jump.

Reason: A sharp bend breaks the smooth transition from torso to tail. A center curve guides consistent width and direction.

Check: Compare the direction of adjacent short segments; if the change is abrupt, smooth the curve and recheck.

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Source rubric / reflection

- [ ] Torso guides include a shoulder line, a waist line, and three equal parts with consistent units.
- [ ] Torso-to-tail transition is smooth and tangent to the torso sides at the hip line.
- [ ] Tail curve has gradual direction changes and a consistent width.
- [ ] Fin guide is simple and placed at the chosen tail length.
- [ ] Left and right offsets at the hip line match within the chosen tolerance.
- [ ] Valid alternatives, such as a different tail direction, are accepted if proportions and smoothness are maintained.

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