Head Proportion Plate: Guided Feature Placement Practice

Original tasks 1, 2 / complete keys

Task 1

A head outline is 20 centimeters tall from the top of the skull to the chin. Calculate the heights of H1, H2, and H3 from the top, and the height of the mouth line. State where the eye line and nose base sit.

Answer: H1 is at 5 centimeters, H2 at 10 centimeters, H3 at 15 centimeters, and the mouth line at 17.5 centimeters from the top. The eye line is at H2 (10 centimeters) and the nose base at H3 (15 centimeters).

Reason: Multiply the head height by 0.25, 0.50, and 0.75 to get H1, H2, and H3. The mouth line is halfway between H3 and the chin, so average 15 and 20 to get 17.5 centimeters.

Check: Verify that 5 + 5 = 10 and 10 + 5 = 15, so the bands are equal. Check that 17.5 is halfway between 15 and 20 by adding 2.5 to 15 and subtracting 2.5 from 20.

Task 2

A head outline is 14 centimeters tall. The head width at H2 is 10 centimeters. Using the five-eye width convention, calculate one eye width. If your drawn eye width is 2.5 centimeters, is it wider or narrower than the convention, and by how much?

Answer: One eye width by the convention is 10 divided by 5, which is 2 centimeters. A drawn eye width of 2.5 centimeters is wider than the convention by 0.5 centimeters.

Reason: Divide the head width at H2 by five to estimate one eye width. Subtract the convention value from the drawn value to find the difference.

Check: Multiply the convention eye width by five to confirm it equals the head width: 2 times 5 equals 10 centimeters. Subtract 2 from 2.5 to confirm the 0.5 centimeter difference.

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Original tasks 3, 4 / complete keys

Task 3

A head outline is 18 centimeters tall. You decide to shift the eye line down by 1 centimeter from H2. Calculate the new eye line height from the top. To keep spacing consistent, by how much should you shift the nose base and mouth line? State the new heights of the nose base and mouth line.

Answer: H2 is at 9 centimeters, so the new eye line is at 10 centimeters from the top. The nose base shifts down by 1 centimeter to 14.5 centimeters. The mouth line stays halfway between the nose base and the chin: average 14.5 and 18 to get 16.25 centimeters from the top.

Reason: Calculate H2 as 50 percent of 18, which is 9 centimeters, then add 1 centimeter for the shift. Calculate H3 as 75 percent of 18, which is 13.5 centimeters, and add 1 centimeter to get the new nose base. The mouth line is always halfway between the nose base and the chin, so average the new nose base (14.5) and the chin (18).

Check: Verify the eye-to-nose distance: 14.5 minus 10 equals 4.5 centimeters, the same as the original H2-to-H3 distance (13.5 minus 9). Check the mouth line by averaging: (14.5 + 18) divided by 2 equals 16.25 centimeters, confirming it sits halfway between the shifted nose base and the fixed chin.

Task 4

A head outline is 12 centimeters tall and 8 centimeters wide at H2. You draw eyes with a width of 1.5 centimeters each and place their centers 3 centimeters apart. Check whether the eye spacing and width are consistent with the five-eye convention. State any differences in centimeters.

Answer: The convention eye width is 8 divided by 5, which is 1.6 centimeters. Your drawn eye width of 1.5 centimeters is 0.1 centimeters narrower than the convention. The convention distance between eye centers is two eye widths, or 3.2 centimeters, but your centers are 3 centimeters apart, which is 0.2 centimeters narrower than the convention.

Reason: Divide the head width at H2 by five to get the convention eye width. Compare the drawn eye width to that value. The convention places eye centers two eye widths apart: half an eye width from each eye center to its inner edge, plus a one-eye-width gap between the eyes. Multiply the convention eye width by two and compare that to the drawn center distance.

Check: Multiply the convention eye width by five to confirm it equals the head width: 1.6 times 5 equals 8 centimeters. Subtract 1.5 from 1.6 to confirm the 0.1 centimeter difference. Multiply 1.6 by 2 to get 3.2 centimeters for the convention center distance, then subtract 3 from 3.2 to confirm the 0.2 centimeter difference in center spacing.

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Source rubric / reflection

- [ ] Head outline is drawn and the top of the skull and bottom of the chin are marked.
- [ ] Head height is measured in centimeters and recorded.
- [ ] H1, H2, and H3 are calculated at 25, 50, and 75 percent of the head height and drawn as horizontal guide lines.
- [ ] A vertical center line is drawn from the top of the skull to the chin.
- [ ] Eye centers are placed on H2 and spaced using a stated eye width, with the choice recorded.
- [ ] Nose base is placed on H3 and centered on the vertical center line.
- [ ] Mouth line is placed halfway between H3 and the chin and centered on the vertical center line.
- [ ] Ears are drawn between H2 and H3 on both sides.
- [ ] Symmetry is checked by measuring distances from the vertical center line to each feature.
- [ ] Any adjustment to the convention is recorded and related features are shifted consistently.

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