Drawing Dancer Anatomy: Limb Proportion and Joint Alignment Practice

Original tasks 1, 2 / complete keys

Task 1

A dancer's head unit is 4 cm. Planned ratios: upper arm 1.3 units, forearm 1.1 units. Calculate the total arm length from shoulder to wrist in centimeters. Then state one joint-alignment check for a raised arm.

Answer: Total arm length = 1.3 + 1.1 = 2.4 head units = 2.4 × 4 cm = 9.6 cm. Alignment check: the shoulder, elbow, and wrist dots should form a gentle curve, and the elbow should not sit farther than a stated offset, such as 0.5 head unit (2 cm), from the line between shoulder and wrist.

Reason: Add the segment ratios, multiply by the head unit, and compare the three joint dots to a chosen tolerance.

Check: Re-measure the scale bar, confirm 2.4 units equals 9.6 cm, and verify the elbow offset is labeled.

Task 2

In an arabesque, the supporting leg has thigh 1.8 units and lower leg 1.6 units. The head unit is 2.5 cm. The working leg is foreshortened to 70 percent of its planned length. Calculate the supporting leg length in centimeters and the foreshortened working leg length if its planned total is 3.4 units.

Answer: Supporting leg = 1.8 + 1.6 = 3.4 units = 3.4 × 2.5 cm = 8.5 cm. Working leg planned = 3.4 units = 8.5 cm; foreshortened = 0.70 × 8.5 cm = 5.95 cm. Alignment check: the supporting ankle, knee, and hip should stack within the stated offset, while the working hip is the pivot.

Reason: Compute the full length, then apply the stated foreshortening fraction. Label the reduction so the check is reproducible.

Check: Confirm 3.4 × 2.5 = 8.5, then 0.70 × 8.5 = 5.95, and verify the pivot and offset are marked.

Drawing Dancer Anatomy: Limb Proportion and Joint Alignment Practice

Original tasks 3, 4 / complete keys

Task 3

A seated dancer has a head unit of 3.5 cm. Planned thigh is 1.8 units and lower leg is 1.6 units. The knee is bent so the lower leg points toward the viewer and is shortened by 25 percent. Calculate the drawn thigh length and drawn lower-leg length in centimeters.

Answer: Thigh = 1.8 × 3.5 cm = 6.3 cm. Lower leg planned = 1.6 × 3.5 cm = 5.6 cm; shortened = 0.75 × 5.6 cm = 4.2 cm. Alignment check: the hip and knee dots should match the thigh measurement, and the shortened lower leg should be labeled as foreshortened.

Reason: Multiply each ratio by the head unit, then apply the stated reduction only to the foreshortened segment.

Check: Re-measure 6.3 cm and 4.2 cm against the scale bar and confirm the 25 percent note is visible.

Task 4

A dancer's total height is planned as 7.5 head units with a head unit of 3 cm. The legs are planned as 3.8 head units total. Calculate total height and leg length in centimeters. State one proportion check comparing the leg length to total height.

Answer: Total height = 7.5 × 3 cm = 22.5 cm. Leg length = 3.8 × 3 cm = 11.4 cm. Proportion check: legs are 3.8 ÷ 7.5 ≈ 0.51 of total height, so the leg measurement should be about half the total height within the stated tolerance.

Reason: Convert both ratios to centimeters and compare their quotient to confirm the planned proportion.

Check: Verify 22.5 cm and 11.4 cm on the scale bar, then confirm 11.4 ÷ 22.5 ≈ 0.51 matches the planned ratio.

Drawing Dancer Anatomy: Limb Proportion and Joint Alignment Practice

Source rubric / reflection

- [ ] A single unit is declared and a scale bar is visible.
- [ ] Joint dots are placed before contours.
- [ ] Each limb segment is measured against the declared ratio.
- [ ] Supporting-leg alignment is checked with a plumb line or stated offset.
- [ ] Intentional deviations and foreshortening are labeled.
- [ ] Valid alternatives are accepted if internal consistency is shown.

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