Draw a Half Basketball Outline with Seam Curves

Original tasks 1, 2, 3 / complete keys

Task 1

Draw a half-ball with a 12 cm baseline and 6 cm midline. Place two seam curves using the one-third and two-thirds convention. State your hypothetical bow depth.

Answer: Seam starts at 4 cm and 8 cm from the left. A hypothetical 1 cm inward bow at each seam midpoint is acceptable if both seams match and stay inside the half-circle.

Reason: The baseline thirds give 12 divided by 3 equals 4 cm, so starts are 4 cm and 8 cm. Equal bow depths keep the seams symmetrical.

Check: Measure the top point to the midline, confirm both seam starts, and compare the two bow depths with a ruler.

Task 2

A half-ball has a 9 cm baseline and 4.5 cm midline. Mark the seam start points and explain how to check symmetry.

Answer: Seam starts are at 3 cm and 6 cm from the left. Check symmetry by measuring from the center to each start point and comparing the left and right bow depths.

Reason: Nine divided by three equals 3 cm, so the thirds are at 3 cm and 6 cm. Symmetry requires equal distances from the center and equal bows.

Check: Use a ruler to measure center-to-start distances and the inward bow at each seam midpoint.

Task 3

Draw a half-ball with a 14 cm baseline and 7 cm midline. Add an optional center seam and label all parts. Describe how you keep labels clear.

Answer: Seam starts are at about 4.67 cm and 9.33 cm from the left. The optional center seam runs from the top midline toward the center. Labels use leader lines placed outside the shape.

Reason: Fourteen divided by three gives repeating decimals, so rounded marks are acceptable if both sides match. Leader lines prevent labels from covering seams.

Check: Confirm the half-circle touches the midline, seam starts are balanced, and no label touches the drawing.

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Original tasks 4 / complete keys

Task 4

A half-ball has an 8 cm baseline and 4 cm midline. One seam bows 0.6 cm inward and the other bows 1.2 cm. Identify the problem and give a corrected plan.

Answer: The bows are unequal. Correct by matching both seams to a single hypothetical depth, such as 0.8 cm, and recheck that both stay inside the half-circle.

Reason: Equal bow depths support the convention's symmetry. Matching values removes the visual imbalance.

Check: Measure each seam's inward bow at its midpoint and compare the two values.

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Source rubric / reflection

- [ ] Half-circle sits on the baseline and touches the midline at its top point.
- [ ] Left and right baseline points are equidistant from the center.
- [ ] Seam curves start at the one-third and two-thirds baseline points.
- [ ] Seam curves bow inward with matching depth and do not cross the outline.
- [ ] Labels are clear and placed outside the drawing.
- [ ] Valid alternatives: different line weights, optional center seam, and scaled dimensions are accepted if geometry and seam placement remain consistent.

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