Draw a Penny: Rim, Profile and Lettering Layout

Original tasks 1, 2, 3 / complete keys

Task 1

A coin has an outer diameter of 70 mm and a rim thickness of 5 mm. Calculate the inner field diameter and state one placement rule for the profile.

Answer: Inner field diameter is 70 minus 10, which equals 60 mm. The profile should sit inside the 60 mm field with a small margin from the inner rim circle.

Reason: Rim thickness appears on both sides, so subtract twice the thickness from the outer diameter. Placement keeps the rim visible and the profile balanced.

Check: Recompute 70 minus 2 times 5 and confirm the result is 60 mm; visually check the profile does not touch the inner circle.

Task 2

You plan eight characters on the upper guide arc. Describe how to mark spacing before lettering and one check that gaps are even.

Answer: Mark eight equal tick intervals along the guide arc, then place one character on each tick. Check by counting the gaps between adjacent characters and confirming each gap is approximately equal.

Reason: Tick marks convert spacing into a countable pattern, making even gaps checkable before letters are drawn.

Check: Count the gaps, not the letters; compare adjacent gaps visually or with a small paper strip.

Task 3

A drawing has an outer diameter of 90 mm and an inner field diameter of 80 mm. What rim thickness was used, and does the arithmetic check pass?

Answer: Rim thickness is 5 mm because 90 minus 80 equals 10, and 10 divided by 2 equals 5. The check passes: 90 minus 2 times 5 equals 80 mm.

Reason: The difference between outer and inner diameters is twice the rim thickness. Dividing by two gives the single-side thickness.

Check: Multiply the rim thickness by 2 and subtract from the outer diameter; confirm the result matches the inner diameter.

Draw a Penny: Rim, Profile and Lettering Layout

Original tasks 4 / complete keys

Task 4

A learner's lettering crosses the inner rim circle and the profile is off-center. List two fixes and one rubric item that addresses each fix.

Answer: Fix one: redraw guide arcs inside the inner circle and move letters inward; rubric item: lettering stays inside the inner rim circle. Fix two: use the vertical centerline to reposition the profile; rubric item: profile placed inside the field with a visible margin.

Reason: Each fix targets a specific placement error, and the rubric names the observable condition that confirms the fix.

Check: After redrawing, check no letter crosses the inner circle and the profile is balanced around the centerline.

Draw a Penny: Rim, Profile and Lettering Layout

Source rubric / reflection

- [ ] Rim drawn as two concentric circles with an even gap all around.
- [ ] Profile placed inside the field with a visible margin from the inner rim circle.
- [ ] Lettering follows guide arcs with even gaps and stays inside the inner rim circle.
- [ ] Lettering is lighter than the rim and profile so the face reads first.
- [ ] Arithmetic check for inner field diameter is correct and units are consistent.
- [ ] Valid alternatives in letter style, profile detail and character count are accepted when placement and spacing are clear.

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