Draw Numeral Zero: Outline Construction and Stroke Order

Original tasks 1, 2, 3 / complete keys

Task 1

Draw a zero with hypothetical height 24 mm, width ratio 0.5, and ring thickness 3 mm. State outer and inner dimensions before drawing.

Answer: Outer width 12 mm, inner height 18 mm, inner width 6 mm. Draw four outer arcs then four inner arcs offset by 3 mm.

Reason: Width equals 24 times 0.5 equals 12 mm. Inner height equals 24 minus 6 equals 18 mm. Inner width equals 12 minus 6 equals 6 mm.

Check: Measure outer height and width, then inner height and width. Confirm the ring closes and the hollow center is visible.

Task 2

Draw a zero with hypothetical height 18 mm and width ratio 0.7. Use a continuous stroke that follows the four-arc path. Label the stroke as one continuous stroke.

Answer: Outer width 12.6 mm. A continuous stroke follows top-left, top-right, bottom-right, bottom-left and closes the ring.

Reason: Width equals 18 times 0.7 equals 12.6 mm. The continuous stroke is a valid alternative if it follows the same path and closes.

Check: Confirm the ring closes, the hollow center is visible, and the stroke path matches the four-arc order.

Task 3

Draw a zero with hypothetical height 20 mm and width ratio 0.6, but make the top slightly narrower than the bottom. Explain why this is valid.

Answer: Outer height 20 mm, outer width 12 mm at the widest point. The top is narrower by a small amount, but the ring closes and the hollow center remains clear.

Reason: Letter styles vary. Slight asymmetry is acceptable when closure, hollow center, and stroke logic are preserved.

Check: Check closure at all guide points, visible hollow center, and consistent stroke order. Compare top and bottom widths to confirm the variation is deliberate.

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Original tasks 4 / complete keys

Task 4

Draw a zero with hypothetical height 16 mm, width ratio 0.75, and ring thickness 2 mm. Then measure and state whether the inner width is at least half the outer width.

Answer: Outer width 12 mm, inner width 8 mm. Inner width is 8 mm, which is at least half of 12 mm.

Reason: Width equals 16 times 0.75 equals 12 mm. Inner width equals 12 minus 4 equals 8 mm. Half of outer width is 6 mm, so 8 mm is greater.

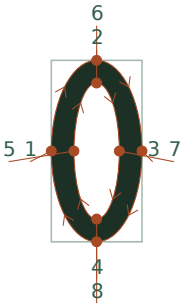
Check: Measure outer and inner widths. Confirm inner width is at least half the outer width and the ring closes.

Draw Numeral Zero: Outline Construction and Stroke Order

Task 1 / ordered drawing key

Follow this lesson pen order / print scale 1 / dimensions describe the original drawing

Outer 12 x 24 / inner 6 x 18 mm



Zero contour / frame 12 x 24 mm

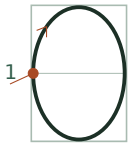
Numbers mark the pen order. Solid starts; open unshared ends. Joined parts can share a start or stop.

Draw Numeral Zero: Outline Construction and Stroke Order

Task 2 / ordered drawing key

Follow this lesson pen order / print scale 1 / dimensions describe the original drawing

One continuous path / four arcs



Continuous zero / frame 12.6 x 18 mm

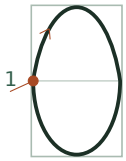
Numbers mark the pen order. Solid starts; open unshared ends. Joined parts can share a start or stop.

Draw Numeral Zero: Outline Construction and Stroke Order

Task 3 / ordered drawing key

Follow this lesson pen order / print scale 1 / dimensions describe the original drawing

One chosen narrower-top variant



Narrower-top zero / frame 12 x 20 mm

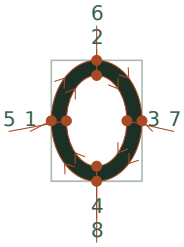
Numbers mark the pen order. Solid starts; open unshared ends. Joined parts can share a start or stop.

Draw Numeral Zero: Outline Construction and Stroke Order

Task 4 / ordered drawing key

Follow this lesson pen order / print scale 1 / dimensions describe the original drawing

Inner width 8 mm is at least half of 12



Zero contour / frame 12 x 16 mm

Numbers mark the pen order. Solid starts; open unshared ends. Joined parts can share a start or stop.

Draw Numeral Zero: Outline Construction and Stroke Order

Source rubric / reflection

- [ ] Closed ring: the outline returns to its starting guide without gaps.
- [ ] Hollow center: the inner boundary is visible and not filled.
- [ ] Stroke order: four-arc order or declared continuous-stroke alternative is followed consistently.
- [ ] Proportion: height and width match the chosen hypothetical ratio within a reasonable margin.
- [ ] Ring thickness: inner boundary is offset consistently, allowing minor variation.
- [ ] Valid alternatives: slight asymmetry, lean, or continuous stroke are accepted if closure and hollow center remain clear.

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