Ring Drawing: Band, Gem, and Metallic Shading Construction

Original tasks 1, 2 / complete keys

Task 1

Draw a ring in front view: two concentric circles for the band and a round setting centered at the top. Use a light direction from the right. Describe your construction and shading choices.

Answer: Construction: draw an outer circle of 50 mm diameter and an inner circle of 40 mm diameter, both centered on the same point (hypothetical example). Mark the top center and draw a setting base circle of 16 mm diameter, then a rim circle of 20 mm diameter. Inside the rim, draw a small octagon table and connect its vertices to the rim to form facets. Shading: light from the right. Shade the band darker on the left, with a highlight on the right outer edge. Shade facets facing right lighter, left darker. Add a bright highlight on the table.

Reason: Front view uses circles because the band faces the viewer directly. Concentric circles keep band thickness even. Centering the setting on the top mark keeps it aligned. Consistent light direction from the right determines which side of the band and which facets are lighter.

Check: Measure outer and inner diameters; the difference should be equal on all sides. Check that the setting center aligns with the band's top center. Trace facet lines for shared vertices. Confirm the highlight is on the right side of the band and on right-facing facets.

Task 2

Draw a ring in side view: a narrow rectangle with rounded ends for the band and a small oval setting on top. Use a light direction from above. Describe your construction and shading choices.

Answer: Construction: draw a rectangle 40 mm long and 8 mm wide with rounded ends for the band (hypothetical example). Mark the top center and draw a setting base ellipse of 14 mm by 8 mm, then a rim ellipse of 18 mm by 10 mm. Inside the rim, draw a small hexagonal table and connect vertices to the rim. Shading: light from above. Shade the band darker at the bottom, with a highlight along the top edge. Shade facets facing up lighter, down darker. Add a highlight on the table.

Reason: Side view shows the band as a narrow shape because the loop is seen edge-on. Rounded ends suggest the band's curvature. The setting appears as a shallow oval. Light from above means the top edge and upward-facing facets are lighter.

Check: Check that the band's rounded ends are symmetric. Confirm the setting is centered on the top edge. Trace facet lines for shared vertices. Confirm the highlight is along the top edge and on upward-facing facets.

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Original tasks 3 / complete keys

Task 3

Draw a ring in three-quarter view with an oval band and a square gem. Use a light direction from the lower left. Describe your construction and shading choices.

Answer: Construction: draw a light major axis of 55 mm and minor axis of 33 mm (ratio 0.6, hypothetical example). Sketch the outer ellipse. Draw the inner ellipse with the same ratio and the same center by scaling both axes by the same factor, for example 0.8, giving axes of 44 mm by 26.4 mm (ratio 0.6), so the band width is proportional around the loop. Note that this gives proportional, not constant, width; if you want even width, offset the inner ellipse slightly toward the major axis. Add a small offset at the left and right sides only to suggest depth, and connect the sides. Mark the top center and draw a setting base ellipse of 18 mm by 11 mm, then a rim ellipse of 22 mm by 13 mm. Inside the rim, draw a square table rotated slightly and connect its four vertices to the rim to form four facets. Shading: light from lower left. Shade the band darker on the upper right, with a highlight on the lower left outer edge. Shade facets facing lower left lighter, upper right darker. Add a highlight on the table.

Reason: Three-quarter view uses ellipses with a consistent axis ratio. A square gem with four facets is a valid alternative to a many-faceted gem if vertices are shared. Light from lower left means the lower left side of the band and lower-left-facing facets are lighter.

Check: Measure outer and inner ellipse axes; compute minor divided by major for each and compare. Check that the setting is centered. Trace facet lines for shared vertices and no crossings. Confirm the highlight is on the lower left outer edge and on lower-left-facing facets.

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Original tasks 4 / complete keys

Task 4

Draw a ring in three-quarter view with a band and a gem, then intentionally create one construction error and correct it. Describe the error, the correction, and how you checked the result.

Answer: Construction: draw a three-quarter ring with outer ellipse 60 mm by 36 mm and inner ellipse 50 mm by 30 mm, same center, so the band width is proportional around the loop (hypothetical example). Intentionally draw the inner ellipse with a different ratio (for example, 48 mm by 24 mm) so the band looks uneven. Correction: redraw the inner ellipse with the same ratio as the outer (minor divided by major equals 0.6) and the same center, using 50 mm by 30 mm, so the band width is proportional around the loop. Note that this gives proportional, not constant, width; if you want even width, offset the inner ellipse slightly toward the major axis. Add a small offset at the left and right sides only to suggest depth. Add a setting and six-facet gem. Shade with light from upper right. Check: outer ratio 36 divided by 60 equals 0.6; corrected inner ratio 30 divided by 50 equals 0.6; band width proportional around the loop; facets share vertices; highlight on upper right.

Reason: The error is a mismatched axis ratio between outer and inner ellipses, which makes band thickness uneven. Correcting the ratio restores even thickness. The check method uses simple arithmetic to compare ratios and visual inspection for shared vertices and consistent light direction.

Check: Compute minor divided by major for outer and inner ellipses; they should be close. Measure band width at several points around the loop; it should be proportional, or visually even if an offset method was used. Trace facet lines for shared vertices. Confirm the highlight is on the upper right side and on upper-right-facing facets.

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Source rubric / reflection

- [ ] Band outer and inner ellipses share the same axis ratio within about ten percent.
- [ ] Band width is proportional around the loop, consistent with the same-ratio concentric construction, or visually even if an offset method was used.
- [ ] Setting is centered on the band's top edge and sits inside the band outline.
- [ ] Gem facets share vertices and do not cross.
- [ ] Shading uses strong value contrast with one consistent light direction.
- [ ] Highlights are placed on band and gem in positions consistent with the light direction.
- [ ] Construction lines are erased or faint in the final drawing.
- [ ] Valid stylistic alternatives are accepted: facet count, gem shape, and light direction may vary if consistency checks pass.

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