Contour Line Lightbulb: Labeled Outline and Shading Practice

Original tasks 1, 2 / complete keys

Task 1

Draw a lightbulb 10 cm tall and 6 cm wide. The neck is 2.5 cm wide and the base is 3.5 cm wide with three ridges. Label glass bulb, neck, base, filament, and outline. Add a 0.6 cm unshaded highlight strip on the upper-left glass curve and a cast shadow touching the base bottom.

Answer: A contour lightbulb with five labels, straight leader lines, an unshaded upper-left strip, and a soft oval shadow touching the base bottom.

Reason: The height-to-width ratio is about 1.7, so the bulb is slightly taller than wide. The neck is narrower than the base, and three ridges are drawn as separate contour lines. Labels are placed outside the shape.

Check: Measure the drawn height and width; confirm the neck is narrower than the base; count three base ridges; check five labels and that no leader lines cross; confirm the highlight strip is unshaded and the shadow touches the base bottom.

Task 2

A drawn lightbulb is 7 cm tall and 4 cm wide. The base is 2.5 cm wide. The cast shadow oval is 5 cm wide and touches the base bottom. Is the shadow width reasonable? Explain and give a corrected width using a hypothetical rule that the shadow width should be about 1.5 times the base width.

Answer: No. The shadow is too wide. A reasonable width is about 3.75 cm (1.5 times 2.5 cm).

Reason: The hypothetical rule gives $1.5 \times 2.5 = 3.75$ cm. The drawn shadow at 5 cm is wider than needed and may look disconnected from the base.

Check: Multiply base width by 1.5; compare with the drawn shadow width; adjust the oval so it touches the base bottom and stays close to the calculated width.

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Original tasks 3, 4 / complete keys

Task 3

You have drawn the glass bulb and neck but not the base or filament. List the next three contour steps in order and state where the filament line should be placed.

Answer: Next steps: draw the base with visible ridges, draw the filament inside the glass, then label all parts. The filament line goes inside the glass bulb as a thin loop or zigzag.

Reason: Contour order moves from outside edges to inside details, then to labels. The filament is an internal edge, so it is drawn after the outer base is complete.

Check: Check that the base has at least two ridges, the filament is inside the glass, and labels are added last with leader lines that do not cross.

Task 4

A student labels the neck as 'base' and the base as 'neck'. The leader lines do not cross. What is wrong, and how should it be fixed?

Answer: The labels are swapped. Move the 'neck' label to the narrow section between bulb and base, and move the 'base' label to the wider ridged section at the bottom.

Reason: The neck is the narrow connector; the base is the wider ridged part. Correct labeling depends on matching the word to the drawn edge, not just avoiding crossed lines.

Check: Point to the narrow connector and confirm it is labeled neck; point to the ridged bottom section and confirm it is labeled base; check each leader dot touches the correct edge.

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Source rubric / reflection

- [ ] Contour lines are single, visible edges with consistent weight.
- [ ] Glass bulb, neck, base, and filament are all drawn and distinguishable.
- [ ] Five labels are present with straight leader lines that do not cross.
- [ ] Each leader line ends with a dot on the correct edge.
- [ ] Highlight strip is unshaded and placed on the upper-left glass curve.
- [ ] Cast shadow is a soft oval touching the base bottom.
- [ ] Shading stays inside contour lines and does not cover labels.
- [ ] Valid alternatives: highlight may be on the upper-right if the light source is reversed; cast shadow may extend left or right as long as it touches the base bottom.

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