Marble Drawing: Highlight and Cast-Shadow Shading Plate

Original tasks 1, 2, 3 / complete keys

Task 1

A circle is lit from the upper right. State where the highlight and cast shadow should go and give each a value from the 1-to-5 convention.

Answer: Highlight upper right, slightly above equator, value 1. Cast shadow extends lower left, value 4 near contact fading to value 2 at the far edge, with a narrow value 5 contact accent.

Reason: The highlight sits on the light side; the cast shadow falls opposite the light. Values follow the convention: brightest at the highlight, darkest at contact accent.

Check: Draw a light arrow upper right. Confirm highlight is on that side and cast shadow is lower left. Check that cast shadow near-contact is darker than its far edge.

Task 2

A marble drawing shows a value 5 core shadow covering the entire lower half and no reflected light. Identify the error and describe the fix using values.

Answer: The dark side is over-darkened evenly. Fix by narrowing the value 5 to a crescent core shadow opposite the highlight and adding a thin value 2 to 3 reflected-light rim near the lower edge.

Reason: A sphere's darkest band is the core shadow, not the whole dark side. Reflected light keeps the lower edge from merging with the cast shadow.

Check: Squint at the drawing. If the lower edge is uniformly dark with no lighter rim, the reflected light is missing. Confirm the value 5 area is a crescent, not a half-circle.

Task 3

With upper-left light, a cast shadow is drawn as a circle directly under the marble. Explain why this is inconsistent and give a corrected shape and value range.

Answer: A circle directly under the marble contradicts upper-left light. Correct to a soft wedge extending lower right, value 4 near contact fading to value 2 at the far edge, with a narrow value 5 contact accent.

Reason: Cast shadows extend away from the light source. A centered circle implies overhead light, which conflicts with the stated direction.

Check: Compare the cast shadow direction with the light arrow. They must be opposite. Check that the near-contact area is darker than the far edge.

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Original tasks 4 / complete keys

Task 4

A student's marble has a value 1 highlight and a value 1 reflected-light rim. Is this valid? Explain using the convention and suggest a correction if needed.

Answer: Not valid. Reflected light must be subordinate to the highlight. Change the reflected-light rim to value 2 or 3 while keeping the highlight at value 1.

Reason: If both are value 1, the reflected light competes with the highlight and flattens the form. The convention caps reflected light at value 3.

Check: Compare the two areas side by side. The highlight should be the brightest spot. If the rim matches it, lower the rim to value 2 or 3 and re-check the sphere reads as three-dimensional.

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Source rubric / reflection

- [ ] Light direction is clearly indicated and all shadows agree with it.
- [ ] Highlight is small, bright (value 1), and placed on the light side.
- [ ] Core shadow is opposite the highlight and darker than surrounding values.
- [ ] Reflected light is present as a thin rim and does not exceed value 3.
- [ ] Cast shadow extends away from the light and fades outward.
- [ ] Contact accent is narrow and darker than the cast shadow body.
- [ ] Value strip shows five distinguishable values.
- [ ] Valid alternatives are accepted if light direction and value relationships remain consistent.

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