Draw a Simple Oreo Cookie: Layers, Cream, and Embossed Pattern

Original tasks 1, 2, 3 / complete keys

Task 1

A side-view drawing has a cream layer 1.5 units tall and each wafer 3 units tall. Is the cream height within the recommended range of one third to one half of a wafer's height? Show the arithmetic.

Answer: Yes. One third of 3 is 1, and one half of 3 is 1.5. The cream height of 1.5 equals the upper bound, so it is within the range.

Reason: Divide the wafer height by 3 and by 2 to get the range: 3 divided by 3 equals 1; 3 divided by 2 equals 1.5. Compare the cream height to these bounds.

Check: Recompute 3 divided by 3 and 3 divided by 2, then confirm 1.5 is between 1 and 1.5 inclusive.

Task 2

A cookie is 8 units wide. The cream layer is inset by 0.5 units on each side. What is the cream layer's width? Show the arithmetic.

Answer: The cream width is 7 units. Subtract 0.5 twice from 8: 8 minus 0.5 equals 7.5; 7.5 minus 0.5 equals 7.

Reason: The inset reduces the width on both the left and right sides, so subtract the inset twice.

Check: Add the two insets back to the cream width: 7 plus 0.5 plus 0.5 equals 8, matching the cookie width.

Task 3

A top-view wafer has a diameter of 10 units. The embossed pattern must leave a rim margin of 1 unit. What is the maximum diameter of the pattern? Show the arithmetic.

Answer: The maximum pattern diameter is 8 units. Subtract the margin twice: 10 minus 1 equals 9; 9 minus 1 equals 8.

Reason: The margin applies on both sides of the pattern, so subtract it twice from the wafer diameter.

Check: Add the two margins to the pattern diameter: 8 plus 1 plus 1 equals 10, matching the wafer diameter.

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Original tasks 4 / complete keys

Task 4

A side-view drawing has a top wafer 2 units tall, a cream layer 1 unit tall, and a bottom wafer 1.5 units tall. Identify the proportion mistake and state a fix with arithmetic.

Answer: The wafers are unequal in height. Make the bottom wafer 2 units tall to match the top wafer. The total height becomes 2 plus 1 plus 2 equals 5 units.

Reason: A sandwich cookie needs matching wafers. Compare the top and bottom wafer heights; if they differ, adjust the shorter one to match the taller one.

Check: Confirm the top and bottom wafer heights are equal, then add the three layer heights to get the total.

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Source rubric / reflection

- [ ] The side view shows two wafers of equal width and height with a cream layer between them.
- [ ] The cream layer is inset slightly on both sides and its height is between one third and one half of a wafer's height.
- [ ] The top wafer has a symmetrical embossed pattern inside a clean rim margin.
- [ ] The cream is lighter than the wafer, with a bright top band and horizontal strokes.
- [ ] Each wafer-cream junction has a narrow dark shadow.
- [ ] The embossed pattern uses a consistent raised-edge convention: light upper-left edges and darker lower-right edges.
- [ ] Valid alternative patterns and letter styles are accepted if they keep the layer structure, proportion logic, and shading convention.

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