# Checking a Float Between Two Liquid Layers

Scoring guide · one credit per question · review written work against each rubric

### Checking a Float Between Two Liquid Layers

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### Question 1

Choice (3)

The float has density 12.0/12.0 = 1.00 g/cm³, between 0.80 and 1.20 g/cm³.

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### Question 2

The float displaces 6.0 × 0.80 = 4.8 g of the top liquid and 6.0 × 1.20 = 7.2 g of the bottom liquid. Together that is 12.0 g.

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### Question 3

With 6.0 cm³ in each layer, the displaced mass would rise to 4.8 + 8.4 = 13.2 g, above the float’s mass. The float needs less volume in the denser bottom layer to restore the 12.0 g balance.

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### Question 4

The remaining 8.0 cm³ displaces top liquid. The total displaced mass is 4.0 × 1.40 + 8.0 × 0.80 = 5.6 + 6.4 = 12.0 g, matching the float’s mass.