Finding a Dissolved Marker in Two Liquids

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

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Question 1

Water holds 5.0 × 0.20 = 1.0 mg. Oil holds 12.0 × 0.050 = 0.60 mg.

Question 2

Choice (3)

Oil has 12.0 mg/L compared with 5.0 mg/L for water, but its smaller volume contains only 0.60 mg compared with 1.0 mg in water.

Question 3

The total doubles. At unchanged concentration, doubling a layer’s volume doubles the marker mass in that layer. Both layers double, so their sum doubles.

Question 4

The oil volume is needed to convert the oil concentration to mass. The water volume and water concentration are also needed because some marker is dissolved in the water.