Tracking Air Space as Liquid Level Rises

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

Tracking Air Space as Liquid Level Rises

Question 1

Choice (3)

Subtract the 1.5 L liquid from the 3.0 L total volume.

Question 2

The starting gas volume is 2.0 L. The fixed-amount product is 100 × 2.0 = 200 kPa·L. Dividing by 1.5 L gives about 133 kPa.

Question 3

At the final volume, keeping all the original gas predicts about 133 kPa. The measured 120 kPa is lower, consistent with less gas in the headspace at the same temperature.

Question 4

The remaining gas gives 120 × 1.5 = 180 kPa·L. It expands to 2.0 L, giving 90 kPa.