Joining Two Chambers in a Gas Model

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

Joining Two Chambers in a Gas Model

Question 1

The left product is 160 × 1.0 = 160 kPa·L. The right product is 100 × 2.0 = 200 kPa·L. The right starts with more gas at the same temperature.

Question 2

Choice (3)

The gate lets gas redistribute. The combined chambers remain closed, so their total amount of gas is fixed.

Question 3

The total pressure-volume product is 160 + 200 = 360 kPa·L at fixed temperature. Divide by the combined volume 3.0 L to get 120 kPa.

Question 4

The starting volumes differ. The amount contributed by each chamber depends on its pressure times its volume. Equal weighting would only match this model if the volumes were equal.

Question 5

The right chamber gains gas. Its pressure rises from 100 to 120 kPa at the same volume and temperature, which indicates a greater gas amount there.