Checking Equal Pressure in Warm and Cool Chambers

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

Checking Equal Pressure in Warm and Cool Chambers

Question 1

Choice (3)

The products are 60 × 300 and 40 × 450, both 18,000 in the model. With equal volumes, equal products give equal pressures.

Question 2

At fixed particle count and volume, pressure scales with the absolute temperature. The new pressure is 100 × 300/450, or about 67 kPa.

Question 3

P initially loses particles. Its pressure is still 100 kPa, higher than the approximately 67 kPa in Q, so gas flows on balance from P to Q.

Question 4

Both chambers now have equal volume and temperature. Equal pressures require equal particle counts in the stated model. There are 100 particle units altogether, giving 50 in each chamber.