Checking Mass When Water Vapor Replaces Air

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

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Question 1

Choice (3)

The total count is ten in each cell. With equal volume and temperature the model gives equal pressures.

Question 2

P has 10 × 29 = 290 mass units. Q has 6 × 29 + 4 × 18 = 246 mass units. Q has the smaller gas mass.

Question 3

Equal pressures establish the same particle count in this model. The particle masses differ, so equal counts give gas masses of 290 and 246 rather than equal masses.

Question 4

The count stays ten, so pressure stays the same. The mass falls by 29 − 18 = 11 units, from 246 to 235.