Comparing Gas Pressure After Equal Warming

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

Comparing Gas Pressure After Equal Warming

Question 1

Choice (1)

The rise is 30/270 for P and 30/300 for Q. The same rise is a larger fraction of the smaller initial temperature.

Question 2

P reaches 300 K, giving 90 × 300/270 = 100 kPa. Q reaches 330 K, giving 90 × 330/300 = 99 kPa.

Question 3

P rises by 10 kPa while Q rises by 9 kPa. For each vessel the fractional temperature rise is what sets the fractional pressure rise. Those fractions differ even though the temperature changes are both 30 K.

Question 4

Q needs 300 × 100/90 = 333.3 K, or 333 K to the nearest kelvin.