Checking a Heat Reading When Water Escapes

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

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Question 1

Choice (4)

The dry block has no water to evaporate. The 50 °C rise also gives 50 × 0.20 = 10.0 kJ.

Question 2

Warming Q uses 27 × 0.20 = 5.4 kJ. The remaining 10.0 − 5.4 = 4.6 kJ goes into evaporation.

Question 3

The 2.0 g of water needs 2.0 × 2.3 = 4.6 kJ. That equals the amount left after warming Q.

Question 4

The model predicts a 50 °C rise for dry Q, just like dry P. The full 10.0 kJ warms Q, so ΔT = 10.0/0.20 = 50 °C. In the first trial the rise was smaller because 4.6 kJ went into evaporating water. A 50 °C repeat would support equal energy requirements per degree.