Reading Heat Capacity From Two Slopes

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

Reading Heat Capacity From Two Slopes

Question 1

Choice (2)

The graph rises by 30 J from 20 to 30 °C and by 60 J from 30 to 40 °C.

Question 2

From 20 to 30 °C it is (30 − 0)/10 = 3 J/°C. From 30 to 40 °C it is (90 − 30)/10 = 6 J/°C.

Question 3

The 90 J includes the first 30 J transferred from 20 to 30 °C. Subtract that earlier contribution. Only 60 J belongs to the 30 to 40 °C interval, giving 60 J ÷ 10 °C = 6 J/°C.

Question 4

The upper-range heat capacity is 6 J/°C, so 30 J raises the temperature by 5 °C. Starting at 30 °C, the sample reaches 35 °C.