**Checking for a Missed Peak in a Heat Test**

Base your answers on the information provided and your knowledge of chemistry. Use the 2025 Chemistry Reference Tables as needed.

A museum tests a model warming pack near a temperature-sensitive display. The pack passes the test only if the temperature never exceeds 37 °C during the first six minutes. A probe records one reading every two minutes.

| Elapsed time (min) | Temperature (°C) |
|---|---|
| 0 | 30 |
| 2 | 36 |
| 4 | 36 |
| 6 | 33 |

**1** Which statement is established by the recorded readings?

(1) The pack never exceeds 37 °C.

(2) The temperature is constant between minutes two and four.

(3) Every recorded temperature is at most 37 °C.

(4) The pack is hottest at exactly minute two.

**2** Explain why the readings at minutes two and four do not guarantee that the pack passes. [1]

Answer and work

A second instrument records the maximum over the entire six-minute test. It displays 39 °C but does not show when that maximum occurred.

**3** Evaluate the claim that the pack passes because the original probe never displayed a number above 37 °C. [1]

Answer and work

**4** Describe a change to the test that would make it easier to identify when the high temperature occurred. State what data the class should record. [1]

Answer and work