Recovering Decays From Two Nuclear Totals

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

Recovering Decays From Two Nuclear Totals

Question 1

Choice (3)

The mass-number sum falls by 12. At four units per alpha decay, this requires three alpha decays.

Question 2

Three alpha decays lower the atomic-number sum by six, from 160 to 154. The measured final sum is 156, so two beta-minus decays added two units.

Question 3

Two alpha decays and no beta-minus decays also lower the atomic-number sum by four. That would lower the mass-number sum by eight. The mass-number reading rules out this alternative.

Question 4

An unchanged mass-number sum means no alpha decay occurred because no allowed event raises that sum. The three-unit rise in atomic-number sum requires three beta-minus decays.