Two Ions With the Same Mass Number

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

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Question 1

Potassium has 40 − 19 = 21 neutrons. Calcium has 40 − 20 = 20 neutrons.

Question 2

Choice (3)

Mass number is the total of protons and neutrons. Different proton and neutron counts can produce the same total.

Question 3

A +1 ion has one more proton than electron. With 19 electrons it has 20 protons, so it is the calcium ion. The student treated the ion’s electron count as if it were a neutral atom.

Question 4

The calcium model fits: it has 20 protons and 20 neutrons. The potassium model has 19 protons and 21 neutrons, so its two counts differ.