Reading Two Signals at the Same Detector Mark

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

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Question 1

Choice (2)

The first ion gives 20/1 = 20 and the second gives 40/2 = 20. The third gives 40/1 = 40.

Question 2

Doubling both the mass number and the size of the charge leaves the quotient unchanged. The display alone cannot distinguish the first two ions.

Question 3

At charge +1 the ratio equals the mass number. The marks at 20 and 40 show that both masses are present. The earlier shared mark could hide the heavier ion.

Question 4

Ne has 10 protons, so Ne^{+} has 9 electrons. Ar has 18 protons, so Ar^{2+} has 16 electrons.