Checking Charge After a Crystal Substitution

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

Checking Charge After a Crystal Substitution

Question 1

Choice (2)

The positive charge is 4 × 2 + 2 × 1 = +10. The six oxide ions contribute −12, for a net charge of −2.

Question 2

Five oxide ions give −10, which balances the +10 from the metal ions. One of the original six oxide ions would be removed.

Question 3

It supports removing one oxide ion. The other model keeps six oxide ions and instead adds one positive ion.

Question 4

Removing oxide leaves four M^{2+} and five O^{2-}, giving +10 and −10 with the two Li^{+} included. Adding metal gives five M^{2+} and six O^{2-}, for +12 and −12 with Li^{+} included. Both models sum to zero with different ion counts.