Comparing Metal Amounts in Two Oxide Models

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

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Question 1

Choice (1)

Each mole of Al_2O_3 formula units contains three moles of oxygen atoms. Divide 0.060 mol by three.

Question 2

In MgO, 0.060 mol O pairs with 0.060 mol Mg. In Al_2O_3, 0.020 mol of formula units contains 0.040 mol Al.

Question 3

MgO has one O per Mg, giving 0.120 mol O. Al_2O_3 has three O per two Al, giving 0.120 × 3/2 = 0.180 mol O.

Question 4

Al_2O_3 gives three O atoms per two Al atoms, or 1.5 per Al. The formula gives the ratio in an extended ionic solid. It does not imply that separate Al_2O_3 molecules make up the solid.