Balancing Chemical Equations Worksheet

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

Balancing Chemical Equations

Question 1

Choice (4)

Choice (4). Each nitrate group has three O atoms and each formula unit has two nitrate groups. Multiply 3 formula units × 2 nitrate groups × 3 O atoms = 18 O atoms.

Question 2

$2H_2 + O_2 \rightarrow 2H_2O$. Each side contains four H atoms and two O atoms. Award credit for the balanced equation and the matching atom counts.

Question 3

Changing a subscript changes the identity of the product from water to hydrogen peroxide. Coefficients change the amounts while preserving the chemical formulas. Accept equivalent reasoning.

Question 4

Choice (2)

Choice (2). Both sides have four Al atoms and six O atoms. The other choices have unequal Al or O counts.

Carbon and Hydrogen in a Burner

Question 5

Choice (3)

Choice (3). One C_3H_8 contains three C atoms. Each CO_2 has one C atom, so the coefficient of CO_2 is 3 when propane has coefficient 1.

Question 6

$C_3H_8 + 5O_2 \rightarrow 3CO_2 + 4H_2O$. Both sides contain three C, eight H, and ten O atoms. Award credit for these coefficients with unchanged formulas.

Question 7

Oxygen is unbalanced. The reactants contain eight O atoms, and the products contain ten (6 in CO_2 and 4 in H_2O). Award credit for the element and both counts.

Question 8

Four water molecules form for each propane molecule consumed in the balanced reaction. Each water molecule has two H atoms and one O atom. Accept an equivalent particle-count interpretation.