Chemistry Worksheet

Balancing Chemical Equations

Balance the following chemical equations:

1.
$$C_3H_8 + O_2 \rightarrow CO_2 + H_2O$$

$$2.~\mathrm{Mg}\,+\,\mathrm{H_2SO_4}\rightarrow\mathrm{MgSO_4}\,+\,\mathrm{H_2}$$

3. Al +
$$H_2O \rightarrow Al_2O_3 + H_2$$

4.
$$S_8 + O_2 \rightarrow SO_3$$

5.
$$NH_3 + HCl \rightarrow NH_4Cl$$

Molar Mass Calculations

Calculate the molar mass of the following chemical compounds:

- 6. H₂O
- 7. CaCO₃
- 8. C_3H_8
- 9. $KMnO_4$

10. H_2SO_4

Stoichiometric Calculations

Answer the following stoichiometric problems:

11. How many grams of O_2 are required to completely burn 32 grams of CH_4 ?

(Molar mass: $CH_4 = 16 \text{ g/mol}, O_2 = 32 \text{ g/mol})$

12. How many grams of H_2O are produced when 48 grams of O_2 react with hydrogen to form water?

(Molar mass: $H_2O = 18 \text{ g/mol}, O_2 = 32 \text{ g/mol})$

13. What is the mass of NaCl formed when 30 grams of Na react completely with chlorine gas?

(Molar mass: NaCl = 58.5 g/mol, Na = 23 g/mol)