# Chemistry Worksheet 

## Balancing Chemical Equations

Balance the following chemical equations:

1. $\mathrm{C}_{3} \mathrm{H}_{8}+\mathrm{O}_{2} \rightarrow \mathrm{CO}_{2}+\mathrm{H}_{2} \mathrm{O}$
2. $\mathrm{Mg}+\mathrm{H}_{2} \mathrm{SO}_{4} \rightarrow \mathrm{MgSO}_{4}+\mathrm{H}_{2}$
3. $\mathrm{Al}+\mathrm{H}_{2} \mathrm{O} \rightarrow \mathrm{Al}_{2} \mathrm{O}_{3}+\mathrm{H}_{2}$
4. $\mathrm{S}_{8}+\mathrm{O}_{2} \rightarrow \mathrm{SO}_{3}$
5. $\mathrm{NH}_{3}+\mathrm{HCl} \rightarrow \mathrm{NH}_{4} \mathrm{Cl}$

## Molar Mass Calculations

Calculate the molar mass of the following chemical compounds:
6. $\mathrm{H}_{2} \mathrm{O}$
7. $\mathrm{CaCO}_{3}$
8. $\mathrm{C}_{3} \mathrm{H}_{8}$
9. $\mathrm{KMnO}_{4}$
10. $\mathrm{H}_{2} \mathrm{SO}_{4}$

## Stoichiometric Calculations

Answer the following stoichiometric problems:
11. How many grams of $\mathrm{O}_{2}$ are required to completely burn 32 grams of $\mathrm{CH}_{4}$ ?
(Molar mass: $\mathrm{CH}_{4}=16 \mathrm{~g} / \mathrm{mol}, \mathrm{O}_{2}=32 \mathrm{~g} / \mathrm{mol}$ )
12. How many grams of $\mathrm{H}_{2} \mathrm{O}$ are produced when 48 grams of $\mathrm{O}_{2}$ react with hydrogen to form water?
(Molar mass: $\mathrm{H}_{2} \mathrm{O}=18 \mathrm{~g} / \mathrm{mol}, \mathrm{O}_{2}=32 \mathrm{~g} / \mathrm{mol}$ )
13. What is the mass of NaCl formed when 30 grams of Na react completely with chlorine gas?
(Molar mass: $\mathrm{NaCl}=58.5 \mathrm{~g} / \mathrm{mol}, \mathrm{Na}=23 \mathrm{~g} / \mathrm{mol}$ )

