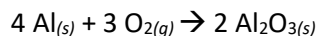
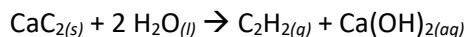


Chemistry – Chapter 12 Book problems #1: Introduction to stoichiometry

1. This equation shows the formation of aluminum oxide, which is found on the surface of aluminum objects exposed to the air:



- a. Write the six mole ratios that can be derived from this equation.
 - b. How many moles of aluminum are needed to form 3.7 mol Al_2O_3 ?
2. According to the equation: $4 \text{Al}_{(s)} + 3 \text{O}_{2(g)} \rightarrow 2 \text{Al}_2\text{O}_{3(s)}$
- a. How many moles of oxygen are required to react completely with 14.8 mol Al?
 - b. How many moles of Al_2O_3 are formed with 0.78 mol O_2 reacts with aluminum?
3. Acetylene gas (C_2H_2) is produced by adding water to calcium carbide (CaC_2).



How many grams of acetylene are produced by adding water to 5.00 g CaC_2 ?

4. Use the equation in question 13 to determine how many moles of CaC_2 are needed to react completely with 49.0 g H_2O .