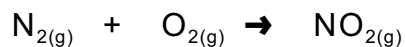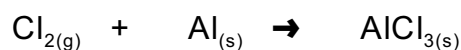1.   In the production of nitrogen dioxide, how many grams of nitrogen are needed to react with 12.50 mol of oxygen to? *(175.1 g)*

$$N_{2(g)} \ + \ O_{2(g)} \ \rightarrow \ NO_{2(g)}$$

2.   How many grams of aluminum chloride can be produced from the reaction of chlorine and 1.85 mol of aluminum ? *(247 g)*

$$Cl_{2(g)} \ + \ Al_{(s)} \ \rightarrow \ AlCl_{3(s)}$$

3.   What mass of water will be produced when 4.55 mol of propane are burned in a Bunsen burner? *(328 g)*

$$C_3H_{8(g)} \ + \ O_{2(g)} \ \rightarrow \ CO_{2(g)} \ + \ H_2O_{(g)}$$

4.   How many grams of hydrogen are produced when 1.50 mol of zinc react with hydrochloric acid, $HCl_{(aq)}$? *(3.03 g)*

$$Zn_{(s)} \ + \ HCl_{(aq)} \ \rightarrow \ ZnCl_{2(aq)} \ + \ H_{2(g)}$$

5. What mass of oxygen will be formed when 0.102 mol of iron(III) oxide decompose to form iron and oxygen ? *(4.90 g)*

$$Fe_2O_{3(g)} \rightarrow Fe_{(s)} + O_{2(g)}$$

6. What mass of water will be produced from the reaction of nitric acid, $HNO_{3(aq)}$, with 0.500 mol of aluminum hydroxide solid? *(27.0 g)*

$$Fe_2O_{3(g)} \rightarrow Fe_{(s)} + O_{2(g)}$$