

### **Practice Problems**

- 31. a.**  $\text{H}_2 + \text{Cl}_2 \rightarrow 2\text{HCl}$   
**b.**  $2\text{Al} + \text{Fe}_2\text{O}_3 \rightarrow 2\text{Fe} + \text{Al}_2\text{O}_3$   
**c.**  $\text{Ba}(\text{ClO}_3)_2 \rightarrow \text{BaCl}_2 + 3\text{O}_2$   
**d.**  $3\text{Cu} + 8\text{HNO}_3 \rightarrow$   
 $3\text{Cu}(\text{NO}_3)_2 + 2\text{NO} + 4\text{H}_2\text{O}$
- 32. a.**  $\text{Fe}_2\text{O}_3 + 3\text{Mg} \rightarrow$   
 $3\text{MgO} + 2\text{Fe}$   
**b.**  $3\text{NO}_2 + \text{H}_2\text{O} \rightarrow$   
 $2\text{HNO}_3 + \text{NO}$   
**c.**  $\text{SiCl}_4 + 2\text{H}_2\text{O} \rightarrow$   
 $\text{SiO}_2 + 4\text{HCl}$   
**d.**  $(\text{NH}_4)_2\text{Cr}_2\text{O}_7 \rightarrow$   
 $\text{N}_2 + \text{Cr}_2\text{O}_3 + 4\text{H}_2\text{O}$
- 33. a.**  $4\text{Fe} + 3\text{O}_2 \rightarrow 2\text{Fe}_2\text{O}_3$   
**b.**  $2\text{H}_2\text{O}_2 \rightarrow 2\text{H}_2\text{O} + \text{O}_2$   
**c.**  $2\text{C}_8\text{H}_{18} + 25\text{O}_2 \rightarrow$   
 $16\text{CO}_2 + 18\text{H}_2\text{O}$   
**d.**  $2\text{Al} + 3\text{F}_2 \rightarrow 2\text{AlF}_3$
- 34. a.**  $2\text{C}_3\text{H}_7\text{OH} + 9\text{O}_2 \rightarrow$   
 $6\text{CO}_2 + 8\text{H}_2\text{O}$   
**b.**  $2\text{Al} + 3\text{Fe}(\text{NO}_3)_2 \rightarrow$   
 $2\text{Al}(\text{NO}_3)_3 + 3\text{Fe}$   
**c.**  $2\text{Fe}(\text{OH})_3 \rightarrow \text{Fe}_2\text{O}_3 + 3\text{H}_2\text{O}$   
**d.**  $2\text{PbO}_2 \rightarrow 2\text{PbO} + \text{O}_2$