

Answer each of the following questions using the equation provided. BE SURE TO BALANCE EACH EQUATION BEFORE SOLVING ANY PROBLEMS. SHOW ALL WORK.

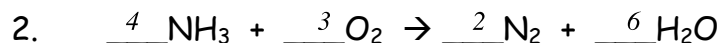


a. 2 moles of NO will react with $\underline{1}$ mole(s) of O_2 to produce $\underline{2}$ mole(s) of NO_2 .

b. $? \text{ moles NO}_2 = 3.6 \text{ moles O}_2 \times \frac{2 \text{ moles NO}_2}{1 \text{ moles O}_2} = 7.2 \text{ moles NO}_2$

c. How many moles of NO must react to form 4.67 moles of NO_2 ?

$$? \text{ mol NO} = 4.67 \text{ mol NO}_2 \times \frac{2 \text{ mol NO}}{2 \text{ mol NO}_2} = 4.67 \text{ mol NO}$$

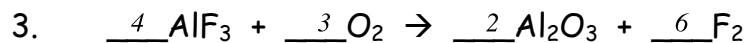


a. 20 moles of NH_3 are needed to produce $\underline{30}$ moles of H_2O .

$$? \text{ mol H}_2\text{O} = 20 \text{ mol NH}_3 \times \frac{6 \text{ mol H}_2\text{O}}{4 \text{ mol NH}_3} = 30 \text{ mol H}_2\text{O}$$

b. How many moles of N_2 will be produced if 3.5 moles of O_2 react?

$$? \text{ mol N}_2 = 3.5 \text{ mol O}_2 \times \frac{2 \text{ mol N}_2}{3 \text{ mol O}_2} = 2.3 \text{ mol N}_2$$

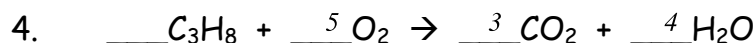


a. 20 moles of AlF_3 will produce 30 moles of F_2 .

$$? \text{ mol } \text{F}_2 = 20 \text{ mol } \text{AlF}_3 \times \frac{6 \text{ mol } \text{F}_2}{4 \text{ mol } \text{AlF}_3} = 30 \text{ mol } \text{F}_2$$

b. 0.8 moles of AlF_3 will react with 0.6 moles of O_2 .

$$? \text{ mol } \text{AlF}_3 = 0.6 \text{ mol } \text{O}_2 \times \frac{4 \text{ mol } \text{AlF}_3}{3 \text{ mol } \text{O}_2} = 0.8 \text{ mol } \text{AlF}_3$$



a. How many moles of oxygen react with 11 moles of C_3H_8 ?

$$? \text{ mol } \text{O}_2 = 11 \text{ mol } \text{C}_3\text{H}_8 \times \frac{5 \text{ mol } \text{O}_2}{1 \text{ mol } \text{C}_3\text{H}_8} = 55 \text{ mol } \text{O}_2$$

b. How many moles of CO_2 are produced if 3.5 moles of water are produced?

$$? \text{ mol } \text{CO}_2 = 3.5 \text{ mol } \text{H}_2\text{O} \times \frac{3 \text{ mol } \text{CO}_2}{4 \text{ mol } \text{H}_2\text{O}} = 2.6 \text{ mol } \text{CO}_2$$



a. Fill in the following word equation-- three moles of oxygen gas react with four moles of iron to produce two moles of iron (III) oxide.

b. $\frac{4.5}{2}$ moles of O_2 are required to produce 3.0 moles of iron (III) oxide.

$$? \text{ mol } \text{O}_2 = 3.0 \text{ mol } \text{Fe}_2\text{O}_3 \times \frac{3 \text{ mol } \text{O}_2}{2 \text{ mol } \text{Fe}_2\text{O}_3} = 4.5 \text{ mol } \text{O}_2$$