



- a. How many moles of chlorine gas can be produced if 4 moles of FeCl_3 react with 4 moles of O_2 ? SHOW ALL WORK!

$$? \text{ mol Cl}_2 = 4 \text{ mol FeCl}_3 \times \frac{6 \text{ mol Cl}_2}{4 \text{ mol FeCl}_3} = \boxed{6 \text{ mol Cl}_2}$$

$$? \text{ mol Cl}_2 = 4 \text{ mol O}_2 \times \frac{6 \text{ mol Cl}_2}{3 \text{ mol O}_2} = 8 \text{ mol Cl}_2$$

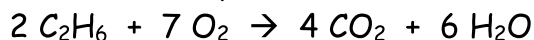
- b. What is the limiting reactant?



- c. What is the excess reactant?



2. Use the following BALANCED equation.



- a. If 15 g of C_2H_6 react with 45 g of O_2 , how many grams of water will be produced?

$$? \text{ g H}_2\text{O} = 15 \text{ g C}_2\text{H}_6 \times \frac{1 \text{ mol C}_2\text{H}_6}{30.0 \text{ g C}_2\text{H}_6} \times \frac{6 \text{ mol H}_2\text{O}}{2 \text{ mol C}_2\text{H}_6} \times \frac{18.0 \text{ g H}_2\text{O}}{1 \text{ mol H}_2\text{O}} = 27 \text{ g H}_2\text{O}$$

$$? \text{ g H}_2\text{O} = 45 \text{ g O}_2 \times \frac{1 \text{ mol O}_2}{32.0 \text{ g O}_2} \times \frac{6 \text{ mol H}_2\text{O}}{7 \text{ mol O}_2} \times \frac{18.0 \text{ g H}_2\text{O}}{1 \text{ mol H}_2\text{O}} = \boxed{22 \text{ g H}_2\text{O}}$$

- b. What is the limiting reactant?



- c. What is the excess reactant?

