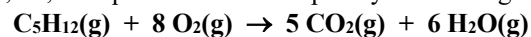


Be sure to show all work, use the correct number of significant figures, circle final answers and use correct units in all problems.

1. What mass of oxygen, O₂, is required to react completely with 37.1 grams of pentane, C₅H₁₂? (4 points)



2. The reaction of 20.0 g H₂ with 30.0 g O₂ yields 12.4 g H₂O. What is the limiting reactant? What is the theoretical yield in grams? What is the percent yield of this reaction? (6 points) $2 \text{H}_2(\text{g}) + \text{O}_2(\text{g}) \rightarrow 2 \text{H}_2\text{O}(\text{g})$

3. A mass of 2.052 g of a metal carbonate, MCO₃, is heated to give the metal oxide and 0.4576 g CO₂.



What is the identity of the metal? (4 points)

4. Fill in the missing stoichiometric coefficients. **Blank entries** will be **considered** to be **zero**. All stoichiometric coefficients must be whole numbers. (6 points)

