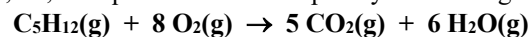


**Answers**

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1. What mass of oxygen, O<sub>2</sub>, is required to react completely with 37.1 grams of pentane, C<sub>5</sub>H<sub>12</sub>? (4 points)



**132 g O<sub>2</sub>**

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

**LR = O<sub>2</sub>**

**TY = 33.8 g**

**% yield = 36.7%**

3. A mass of 2.052 g of a metal carbonate, MCO<sub>3</sub>, is heated to give the metal oxide and 0.4576 g CO<sub>2</sub>.



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

**M = Barium**

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

**1, 2, 1, 2**

**2, 15, 12, 6**

**1, 3, 2**