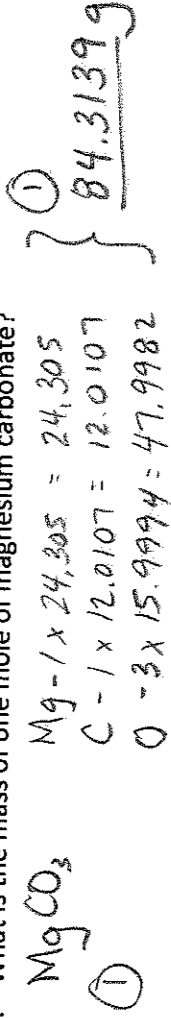


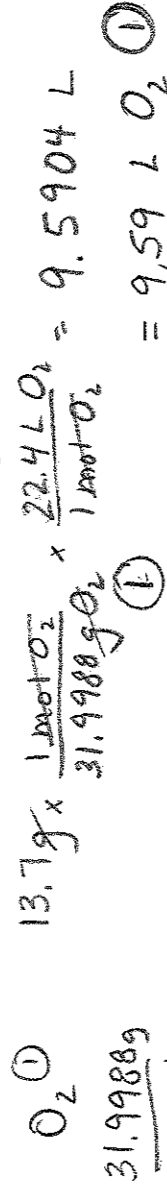
Name: Solutions Date: _____

Answer each of the following questions in the space provided. Show ALL work to receive full value. You may only use a periodic table and a calculator. All other information is on the board.

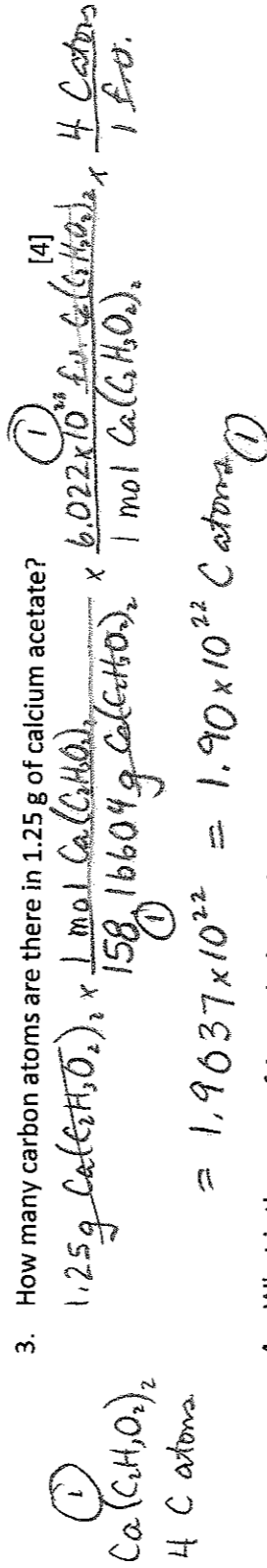
1. What is the mass of one mole of magnesium carbonate? [2]



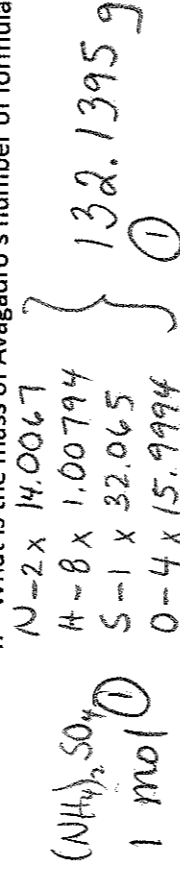
2. What is the volume of 13.7 g of oxygen gas? [3]



3. How many carbon atoms are there in 1.25 g of calcium acetate? [4]



4. What is the mass of Avogadro's number of formula units of ammonium sulfate? [2]



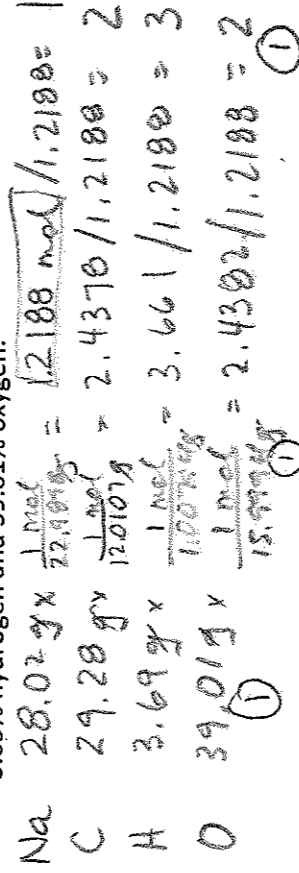
5. Calculate the percent composition of hydrogen and sulfur in ammonium sulfate. [3]

$$\begin{array}{l} \text{H: } \underline{6.10\%} \\ \text{S: } \underline{24.27\%} \end{array}$$

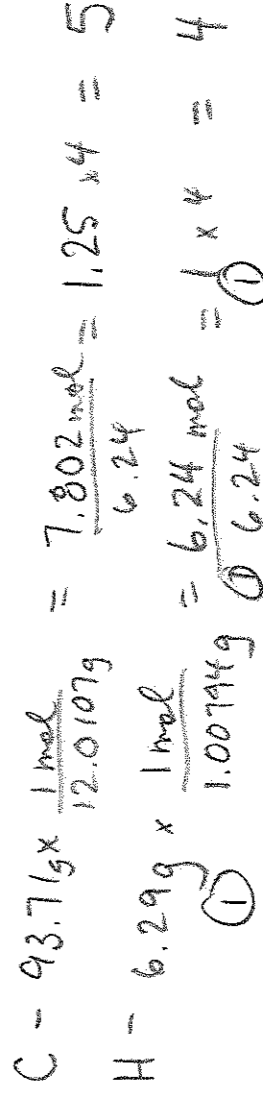
$$8 \times 1.00794 = \underline{8.06352} = 6.10\% \\ \underline{132.1395}$$

$$\frac{32.065}{132.1395} = 24.27\%$$

6. Determine the empirical formula for a compound that contains 28.02% sodium, 29.28% carbon, 3.69% hydrogen and 39.01% oxygen. [4]



7. Determine the empirical formula for a compound that contains 93.71% carbon and 6.29% hydrogen. [4]



8. If the compound in question 7 has a molar mass of 128.17 g, determine its molecular formula. [3]

