

1 (50 points total, each part is worth a maximum of 10 points). Answer five (5) of the six (6) parts of this question (i.e., on pages 2 & 3, below). Indicate the 5 parts you want me to grade by circling their part numbers.

a. Clearly described the effects on a cat if the oxygen content of the atmosphere were to drop by 20%. Give your reasoning.

b. Give the number of significant figures for each of the following clearly describing how you come to this answer. If you wanted to do an accurate calculation, which number would you use (give me your reasoning).

$2.112 \times 10^5 \rightarrow$

4 sig figs for accurate calculations

$211,000 \rightarrow$

probably 3 sig figs

$2.1 \times 10^5 \rightarrow$

2 sig figs

c. Convert the following numbers from scientific notation to conventional numbers or from conventional numbers to scientific notation, as required.

$3,200,000 =$

3.2×10^6

$0.000,04 =$

4×10^{-5}

$2.182 \times 10^{-4} =$

0,000,218,2

$4.1 \times 10^5 =$

410,000

$34,211,000 =$

3.4211×10^7

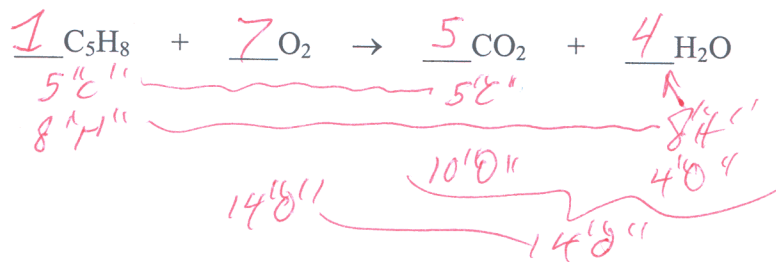
- d. Describe in detail the differences between Chronic and Acute exposure to a potentially toxic chemical.

- e. What is the second largest constituent of Air? Discuss its properties and uses.

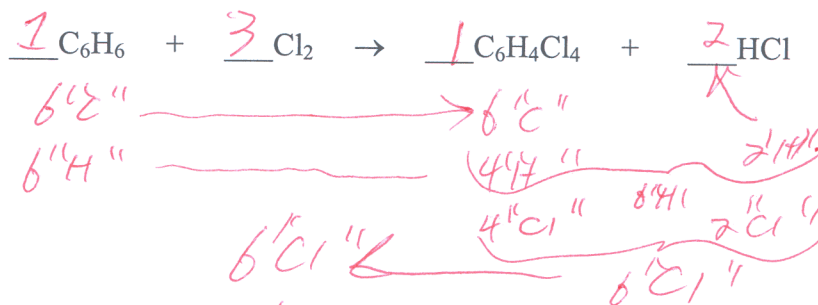
- f. Calculate the mileage of a car that drives 406 miles using 11.2 gallons of gas. Show your work.

$$\begin{aligned} \text{mileage} &= \frac{\text{mile}}{\text{fuel}} = \frac{406 \text{ miles}}{11.2 \text{ gallons}} = 36.25 \text{ m/gallon} \\ &= 36.3 \text{ m/gallon} \\ &\text{correct sig figs} \end{aligned}$$

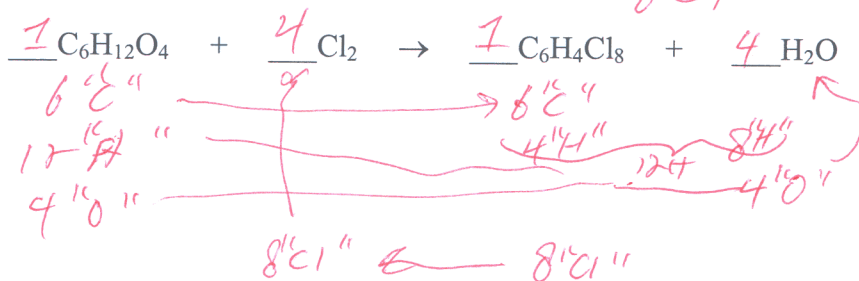
2 (25 points total). Balance each of the following chemical reactions.



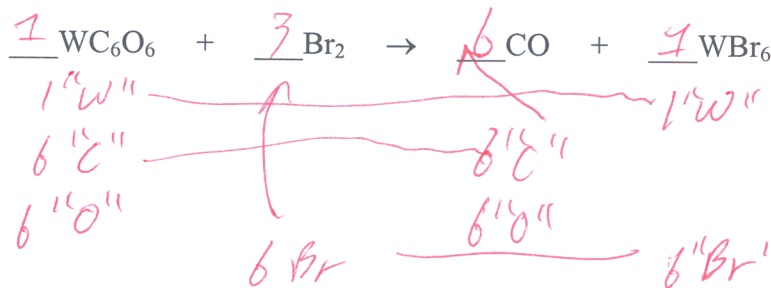
1:7:5:4



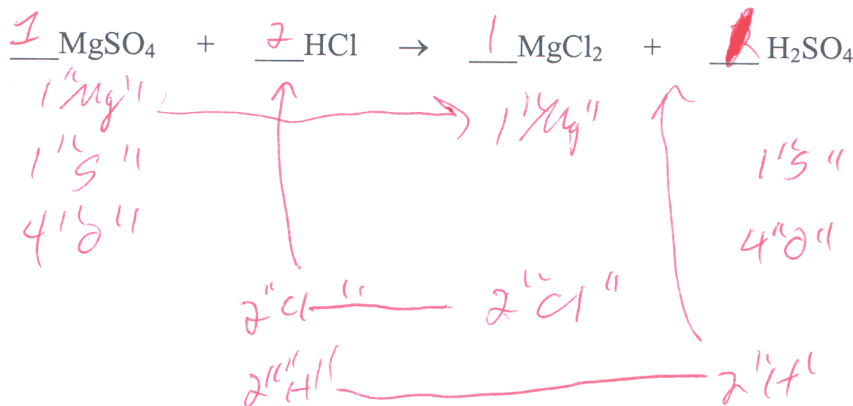
1:3:1:2



1:4:1:4



1:3:1:4



1:2:1:1