

43a.

$$0.0130 \text{ mol C} / .0065 = 2$$

$$0.0390 \text{ mol H} / .0065 = 6$$

$$0.0065 \text{ mol O} / .0065 = 1$$

$\text{C}_2\text{H}_6\text{O}$

77)



30.0g      65.0g

60.3g

$$\text{30.0g C}_6\text{H}_6 \times \frac{1 \text{ mol}}{78.11 \text{ g}} \times \frac{1}{1} \times \frac{157.0 \text{ g C}_6\text{H}_5\text{Br}}{1 \text{ mol}} =$$

$$\text{65.0g Br}_2 \times \frac{1 \text{ mol}}{159.80 \text{ g}} \times \frac{1}{1} \times \frac{157.0 \text{ g}}{1 \text{ mol}} =$$

63.86g

b)

$$\frac{42.3 \text{ g}}{60.3 \text{ g}} = \frac{\text{actual}}{\text{Theoretical}} \times 100$$

70.1 % yield

# Significant Figure Review

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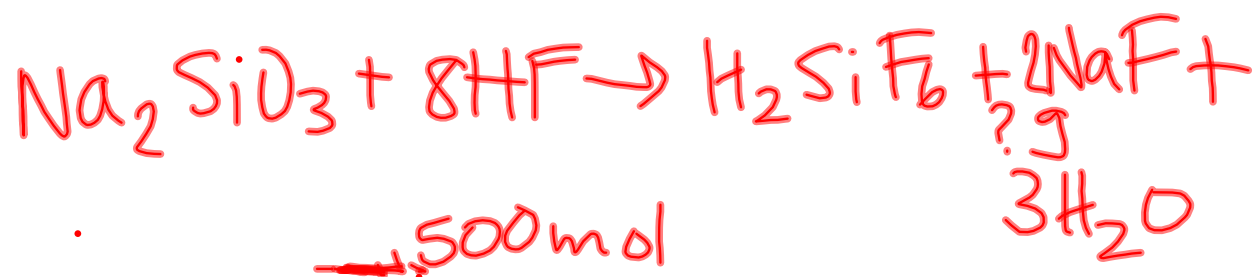
- Sandwiched zeros are sig. 5001
- All non zero digits are sig. 751
- Leading zeros are never sig. 0.04
- Trailing zeros are not significant unless there is a decimal  
0.0300  
400  
 $4.00 \times 10^2$

Addition / Subtraction

Multiplication / Division \*

$$\begin{array}{l} \text{b. } 11.66 \text{ g Fe} \times \frac{1 \text{ mol}}{55.85 \text{ g}} = .20878 \\ 5.01 \text{ g O} \times \frac{1 \text{ mol}}{16.00} = .31313 \\ \hline .20878 \\ 1.5 \end{array}$$





$$.500 \text{ mol HF} \times \frac{2 \text{ NaF}}{8 \text{ HF}} \times \frac{41.99 \text{ g}}{1 \text{ mol}}$$

$$15 \text{ yrs} \times \frac{365 \text{ days}}{1 \text{ yr}} \times \frac{24 \text{ hrs}}{1 \text{ day}} \times \frac{60 \text{ min}}{1 \text{ hr}} \times \frac{60 \text{ min}}{1 \text{ min}}$$



73) a.  $\text{NaHCO}_3$  LR

$$1.00\text{g NaHCO}_3 \times \frac{1\text{mol}}{84.01\text{g}} \times \frac{3\text{ CO}_2}{3\text{ NaHCO}_3} = 0.0119\text{ mol CO}_2$$

$$1.00\text{g H}_3\text{C}_6\text{H}_5\text{O}_7 \times \frac{1\text{mol}}{192.1\text{g}} \times \frac{3\text{ CO}_2}{1\text{ H}_3\text{C}_6\text{H}_5\text{O}_7} =$$

$$b. \quad 0.0119\text{mol} \times \frac{44.01\text{g}}{1\text{mol}} = 0.524\text{g CO}_2$$

0.0156 mol CO<sub>2</sub>

$$.0119 \text{ mol NaHCO}_3 \times \frac{1 \text{ mol H}_3\text{Cit}}{3 \text{ mol NaHCO}_3}$$

$$3.97 \times 10^{-3} \text{ mol H}_3\text{Cit}$$

$$1.00 - .763 = \boxed{.237 \text{g}} \text{ remain used } .763 \text{g H}_3\text{Cit}$$