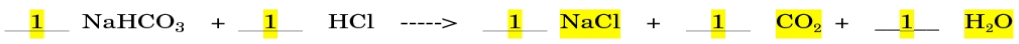
**Worksheet**
**Mole Ratio**

NAME:_____

**Show all work and remember to use significant figures and units!**

1. Predict the products and balance the equation for the reaction between sodium bicarbonate and hydrochloric acid.




2. If you use 3.2 moles of sodium bicarbonate in the reaction in question #1,
   a. how many moles of HCl would be used?

$$\frac{3.2 mol NaHCO_3}{} \left| \frac{1 mol HCl}{1 mol NaHCO_3} \right| = 3.2 mol HCl$$

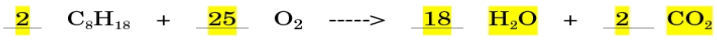
   b. how many moles of each product would be produced?

$$\frac{3.2 mol NaHCO_3}{} \left| \frac{1 mol H_2O}{1 mol NaHCO_3} \right| = 3.2 mol H_2O$$

$$\frac{3.2 mol NaHCO_3}{} \left| \frac{1 mol CO_2}{1 mol NaHCO_3} \right| = 3.2 mol CO_2$$

$$\frac{3.2 mol NaHCO_3}{} \left| \frac{1 mol NaCl}{1 mol NaHCO_3} \right| = 3.2 mol NaCl$$

3. Predict the products and balance the equation for the following reaction.




If you burn 4.33 moles of octane, $C_8H_{18}$.
   a. how many moles of oxygen are required?

$$\frac{4.33 mol C_8H_{18}}{} \left| \frac{25 mol O_2}{2 mol C_8H_{18}} \right| = 54.1 mol O_2$$

   b. how many moles of each product are produced?

$$\frac{4.33 mol C_8H_{18}}{} \left| \frac{18 mol H_2O}{2 mol C_8H_{18}} \right| = 39.0 mol H_2O$$

$$\frac{4.33 mol C_8H_{18}}{} \left| \frac{16 mol CO_2}{2 mol C_8H_{18}} \right| = 34.6 mol CO_2$$