

## 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?

$3.2 \text{ mol NaHCO}_3$	$\frac{1 \text{ mol HCl}}{1 \text{ mol NaHCO}_3}$	$= 3.2 \text{ mol HCl}$
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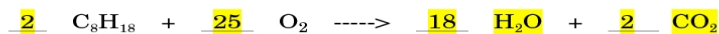
- b. how many moles of each product would be produced?

$3.2 \text{ mol NaHCO}_3$	$\frac{1 \text{ mol H}_2\text{O}}{1 \text{ mol NaHCO}_3}$	$= 3.2 \text{ mol H}_2\text{O}$
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$3.2 \text{ mol NaHCO}_3$	$\frac{1 \text{ mol CO}_2}{1 \text{ mol NaHCO}_3}$	$= 3.2 \text{ mol CO}_2$
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$3.2 \text{ mol NaHCO}_3$	$\frac{1 \text{ mol NaCl}}{1 \text{ mol NaHCO}_3}$	$= 3.2 \text{ mol NaCl}$
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3. Predict the products and balance the equation for the following reaction.



If you burn 4.33 moles of octane,  $\text{C}_8\text{H}_{18}$ .

- a. how many moles of oxygen are required?

$4.33 \text{ mol C}_8\text{H}_{18}$	$\frac{25 \text{ mol O}_2}{2 \text{ mol C}_8\text{H}_{18}}$	$= 54.1 \text{ mol O}_2$
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- b. how many moles of each product are produced?

$4.33 \text{ mol C}_8\text{H}_{18}$	$\frac{18 \text{ mol H}_2\text{O}}{2 \text{ mol C}_8\text{H}_{18}}$	$= 39.0 \text{ mol H}_2\text{O}$
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$4.33 \text{ mol C}_8\text{H}_{18}$	$\frac{16 \text{ mol CO}_2}{2 \text{ mol C}_8\text{H}_{18}}$	$= 34.6 \text{ mol CO}_2$
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