

# Chapter 12 WS

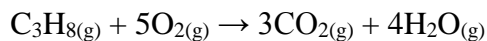
## Gas Stoichiometry

Name: \_\_\_\_\_

Period: \_\_\_\_\_ Date: \_\_\_\_\_

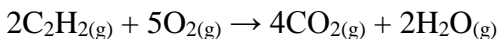
Solve each of the following sets of problems. Make sure to show ALL work and write your answers in the space on the right. All reactions are at STP.

- 1) Combustion of Propane that burns 8.75 L of propane.



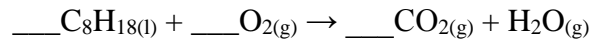
- a. Volume of O<sub>2</sub> that reacts \_\_\_\_\_
- b. Volume of CO<sub>2</sub> produced \_\_\_\_\_
- c. Volume of H<sub>2</sub>O produced \_\_\_\_\_

- 2) Combustion of Acetylene that produces 0.775 mol of carbon dioxide.



- a. Volume of CO<sub>2</sub> produced \_\_\_\_\_
- b. Volume of O<sub>2</sub> that reacts \_\_\_\_\_
- c. Moles of C<sub>2</sub>H<sub>2</sub> that react \_\_\_\_\_
- d. Mass of H<sub>2</sub>O produced \_\_\_\_\_

3) Combustion of Octane that burns 825 g of octane



- a. Moles of  $\text{C}_8\text{H}_{18}$  that reacts \_\_\_\_\_
- b. Volume of  $\text{CO}_2$  produced \_\_\_\_\_
- c. Volume of  $\text{H}_2\text{O}$  produced \_\_\_\_\_
- d. Volume of  $\text{O}_2$  that reacts \_\_\_\_\_
- e. What relationship do you notice between the numbers for answers B-D? (hint: does that relationship appear anywhere else?)
- f. If the number of molecules of each chemical were calculated instead of the volumes for answers B-D, what would the relationship be?